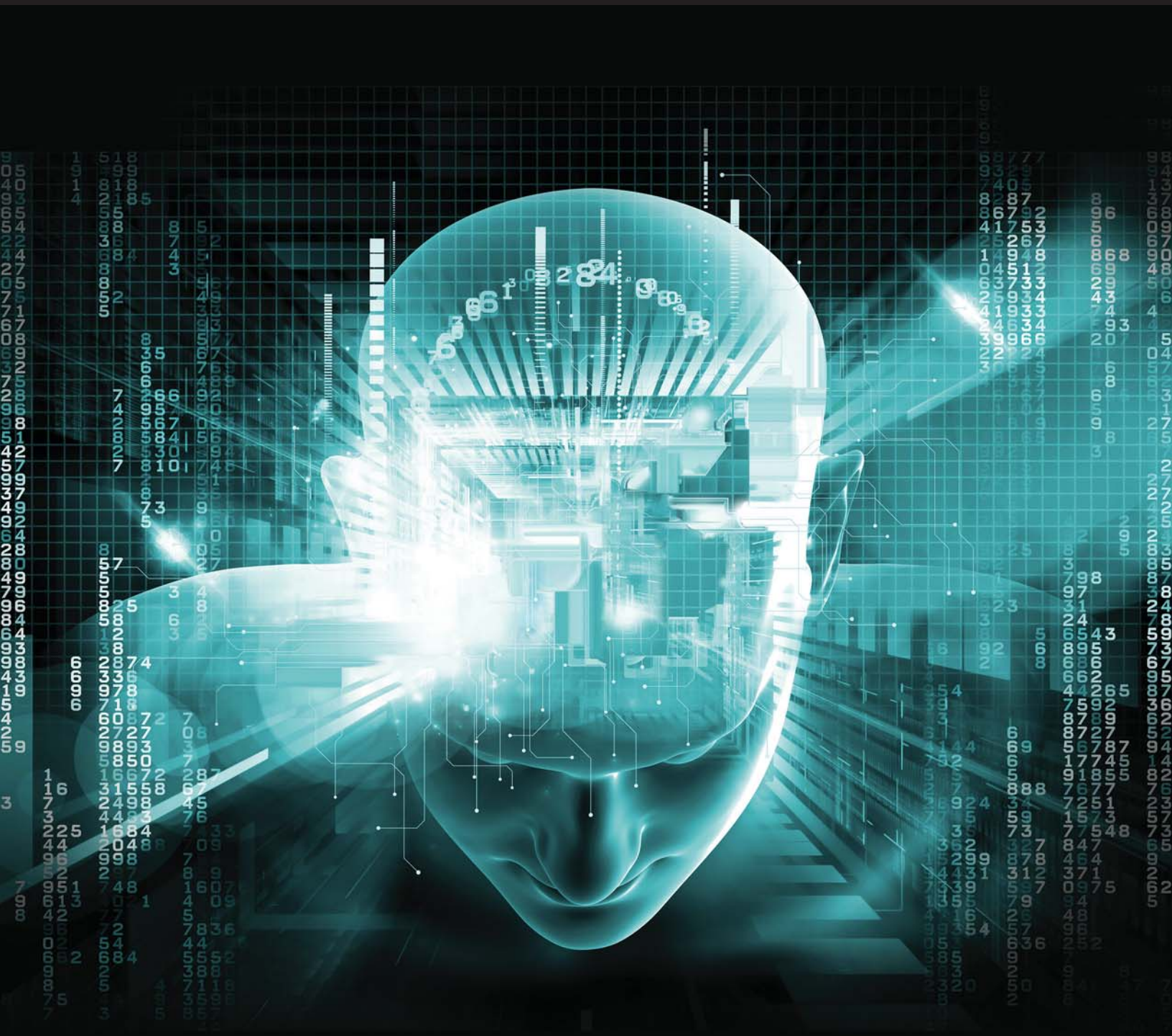
September 2014
Shortform Catalog



MICREL®
Innovation Through Technology®

Shortform Catalog

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Corporate Profile

Micrel Inc., is a leading global manufacturer of IC solutions for the worldwide High-Performance Linear and Power, LAN, and Timing and Communication markets. The Company's products include advanced mixed-signal, analog and power semiconductors, high-performance communication, clock management, Ethernet switch and physical layer transceiver ICs. Customers include leading manufacturers of enterprise, consumer, industrial, mobile, telecommunications, automotive, and computer products. Corporation headquarters and state-of-the-art wafer fabrication facilities are located in San Jose, CA, with regional sales and support offices and advanced technology design centers situated throughout the Americas, Europe, and Asia. In addition, the Company maintains an extensive network of distributors and reps worldwide. Web: http://www.micrel.com.

Founded in 1978, Micrel maintains a portfolio of world class wafer fabrication processes that enable the Company to produce new products faster than the competition. The Company uses, singularly or in combination, CMOS, Bipolar, and DMOS technologies in its High-Performance Linear and Power products. With the acquisition of Synergy Semiconductor in 1998, Micrel has high-speed bipolar capability in the form of ASSET™ (All Spacer Separated Element Transistor) process. This proprietary, patented bipolar technology employs a narrow deep-trench isolation technique that allows for electrical isolation between adjacent circuit elements. This means the Company can place multiple analog and digital functions on the same IC without the various functions causing the interference typically found when alternate techniques are used.

LAN Solutions

Micrel is an established leader in wired LAN Solutions networking, with more than 500 million ports shipped. The Company's Ethernet products are widely used in digital home devices (IP-STB, IP-TV, etc.), routers, access points, VoIP, automotive, industrial, and Power over LAN Solutions (PoLS) applications, to name a few. There are a wide range of field-proven, multi-port products in a variety of packages, including physical layer transceivers (PHYs), embedded controllers, unmanaged and managed switches, and System-on-Chip (SoC) ICs with an integrated processor. Micrel's comprehensive portfolio of LAN Solutions products operate over commercial, industrial, and extended temperature ranges; support AEC-Q100 Automotive qualification; and are available in a variety of environmentally friendly, lead-free packaging options.

Timing and Communication Solutions

Micrel's Timing and Communication Business Unit products include complete Clock and Timing as well as High Speed Communications solutions. The company's Clock and Timing portfolio offers solutions for the complete clock and timing tree requirements of advanced systems. Addressing the high performance requirements of a wide range of applications including clock generation and distribution for high data rate communications protocols such as 10G/100Gigabit Ethernet, Gigabit Ethernet, Fibre Channel, PCI Express® Generation 1, 2 and 3, Common Public Radio Interface (CPRI), the portfolio is also widely applicable for consumer and other general purpose requirements. This broad product offering, with industry leading performance, allows the clock and timing ICs and modules to address multiple market sectors including servers and cloud computing, networking and data communications, storage, telecommunications, femtocell and macrocell base stations, set-top boxes, embedded and mobile applications.

In the past two years, Micrel has added several key technologies through acquisitions. Phaselink, a private company based in Taiwan and Silicon Valley, was acquired in March 2012 and complements Micrel's high performance clock generation and distribution products for the communication market and expands the Company's portfolio into the consumer and industrial markets. Then, in August 2013, Micrel expanded the growing portfolio of clock and timing products by acquiring the IP and technology for MEMS-based PureSilicon™ oscillators and Crystal-less™ clock generators from Discera Inc., a leading provider of silicon timing solutions. This complemented the existing clock and timing product line by providing new products with a variety of significant benefits for existing consumer, networking, computing and audio/video markets. These MEMS-based solutions extend Micrel's portfolio into new applications requiring enhanced ruggedness such as in industrial and automotive end markets.

Micrel's Precision Edge® product family includes precision frequency synthesizers, clock and data fanout, distribution, signal level shifting, frequency scaling and multiplexing of clock or data signals — all aimed at meeting the most rigorous, timing-critical applications. In addition, active cable and backplane management, redundancy and protection switching, data and clock management applications are supported with the Precision Edge Clock and Data Distribution product portfolio. AnyIn™ and fail-safe input circuitry simplify connectivity to the source while the outputs support multiple output levels such as CML, ECL/PECL/LVPECL, HSTL, TTL, LVDS, and LVCMOS. All Precision Edge products are designed to provide the lowest skew and jitter IC solutions available.

The High Speed Communications portfolio offers Physical Media Dependent (PMD) devices such as burst-mode and continuous mode limiting post amplifiers, laser diode drivers, integrated single-chip transceivers, and optical module controller circuits for high speed communications products. Primary applications are fiber-optic modules and solutions targeted at FTTH/PON, SONET/SDH/OTN telecommunications, Enterprise data communications, Storage Area Networks, and wireless base station infrastructure. Micrel's unique solutions for Fiber-Optic Passive Optical networks (PON) provide superior input sensitivity, hysteresis, and LOS/SD timing performance for improved link efficiency with a resulting reduction in CAPEX/OPEX and improved manufacturability. The portfolio supports existing generation 1GEPON/GPON networks as well as next generation 10GEPON/XGPON build outs.

High Performance Linear and Power Solutions

Micrel has a reputation for being a high-quality and premiere supplier of LDO regulators in the worldwide market and is a major global supplier to the mobile phone, computing and industrial markets. The High Performance Linear and Power group focuses on the development develop high-performance power management ICs which address customers' needs while leveraging Micrel's differentiated proprietary MOSFET process technology and advanced packaging. With one of the industry's broadest portfolio of mixed signal products, Micrel enables customers to choose from hundreds of devices from each major product category, including DC/DC switching controllers and regulators that offer some of the widest input range (2.2V to 75V), highest efficiency (>90 percent), smallest solution size, and lowest standby power benchmarks in the industry.

The SuperSwitcher™ family offers superior design flexibility and leverages our proprietary integrated MOSFET technology. Micrel's family of IntelliMOS™ and micro modules (MCMs) power solutions offer some of the highest levels of integration for design simplicity so vital for today's busy designer. In addition, the products provide high power density along with the superior performance required for demanding applications such as cloud servers and smartphones.

As an undisputed leader in LDOs, Micrel has a broad range of output current and package offerings. The product line also has an expansive input voltage range of solutions ranging from 1.8V all the way up to 120V. This family of products includes high-efficiency LDOs (HELDO®) and the award-winning Ripple Blocker™ ultra-high supply frequency rejection line of LDOs.

Micrel's MOSFET drivers also offer one of the industry's widest operating voltage ranges; from 5.5V all the way up to 100V, high drive power capability and comprehensive fault protection. The Company's ubiquitous line of load switches are some of the smallest on the market, 0.85mm x 0.85mm, and feature some of the lowest voltage drop. Micrel's hot swap products are designed with robust bipolar technology, and are extremely reliable. The line of current limit switches provides high current accuracy across one of the market's widest current ranges.

In the area of portable LED drivers there are scores to choose from; the wide input and output range of $2.2V_{IN}$ to $45V_{OUT}$, combined with the smallest foot print give customers the widest range of options possible. The line of supervisor devices provide designers with the low standby current in the tiny size of just 1.2mm x 1.2mm.

Micrel's line of op-amps and comparators offers a very wide input voltage range of 2V to 32V and low supply current. Micrel's digital temperature sensors are pin-to-pin compatible with industry-standard digital temp sensors I^2C, SMBus, and single-wire communication. Widely used in everything from key fobs to garage door openers, Micrel's RF receivers and transmitters have high output power for average supply current and are automotive qualified.

Other products in the high-power arena include DDR terminators, battery chargers, timers, I/O expanders and more. Micrel has ICs to suit any electronic product designer's needs.

Micrel's Linear and Power Solutions operate over commercial, industrial and extended temperature ranges and support AEC-Q100 qualification.

Quality Assurance

Micrel first achieved ISO 9001 registration on March 31, 1997 and on December of 2004, the Company's wafer fabrication facility was certified to ISO14001:1996, the International Environmental Management System Standard. The goal of the environmental management system is to ensure regulatory compliance and to reduce environmental impact through waste reduction and recycling. Micrel is committed to delivering products and services that meet or exceed our customers' expectations — error-free, on-schedule, and at a competitive price. Micrel maintains a culture of continuous improvement that runs through all disciplines in the company, and includes the activities of its suppliers.

Commitment to Customer Satisfaction

Micrel remains committed to contributing to its customers' success. Internal processes have been developed with flexibility in mind, so the Company can quickly react to changing requirements. Micrel's outstanding sales, customer service, and technical support organizations are set up to address customer needs and requirements.

Contents

MIC28304
70V, 3A Power Module - Hyper Speed Control™ Family

Micrel's MIC28304 is synchronous step-down regulator module, featuring a unique adaptive ON-time control architecture. The module incorporates a DC-to-DC controller, power MOSFETs, bootstrap diode, bootstrap capacitor and an inductor in a single package. The MIC28304 operates over an input supply range from 4.5V to 70V and can be used to supply up to 3A of output current. The output voltage is adjustable down to 0.8V with a guaranteed accuracy of ±1%. The device operates with programmable switching frequency from 200kHz to 600kHz.

Micrel's HyperLight Load® architecture provides the same high-efficiency and ultra-fast transient response as the Hyper Speed Control™ architecture under the medium to heavy loads, but also maintains high efficiency under light load conditions by transitioning to variable frequency, discontinuous-mode operation.

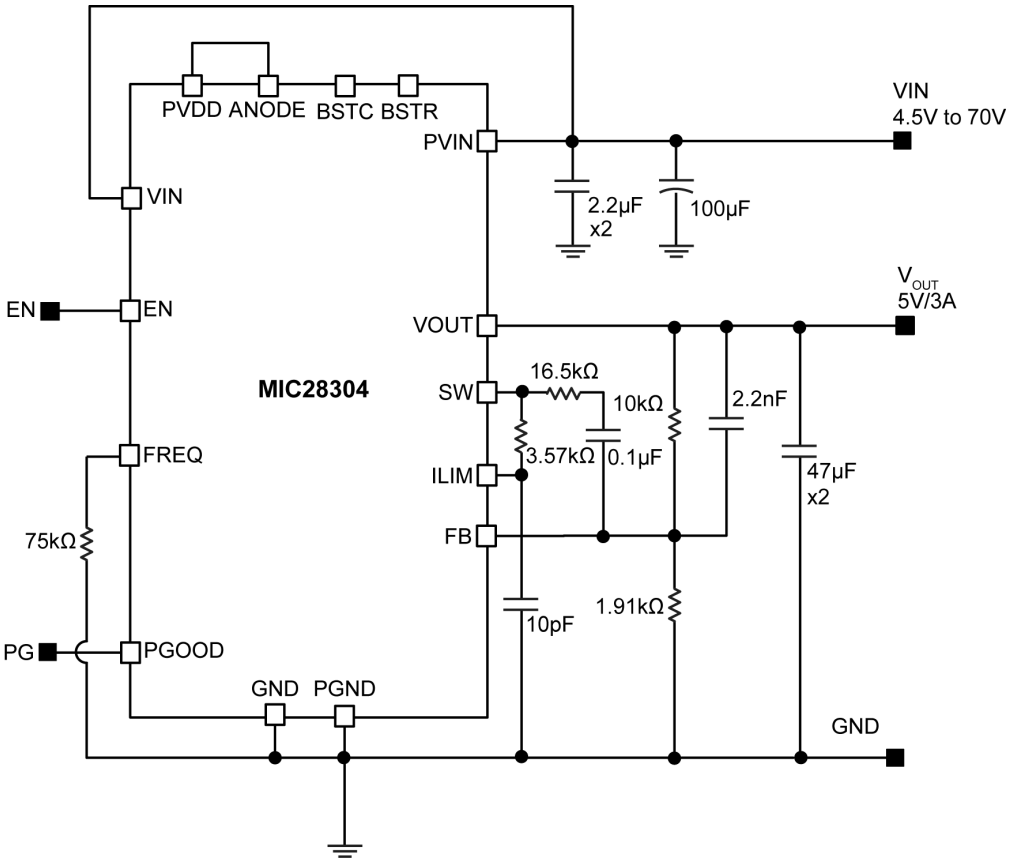
The MIC28304 offers a full suite of protection features. These include undervoltage lockout, internal soft-start, foldback current limit, "hiccup" mode short-circuit protection, and thermal shutdown.

Features

- Easy to use
  - Stable with low-ESR ceramic output capacitor
  - No compensation and no inductor to choose
- 4.5V to 70V input voltage
- Single-supply operation
- Power Good (PG) output
- Low radiated emission (EMI) per EN55022, Class B
- Adjustable current limit
- Adjustable output voltage from 0.8V to 24V (also limited by duty cycle)
- 200kHz to 600kHz programmable switching frequency
- Supports safe start-up into a pre-biased output
- –40°C to +125°C junction temperature range
- Available in 64-pin, 12mm x 12mm x 3mm QFN package

Applications

- Distributed power systems
- Industrial, medical, telecom, and automotive



MIC33163/MIC33164 and MIC33263/MIC33264
4MHz, 1A or 2A, Buck Regulator with Integrated Inductor and HyperLight Load®

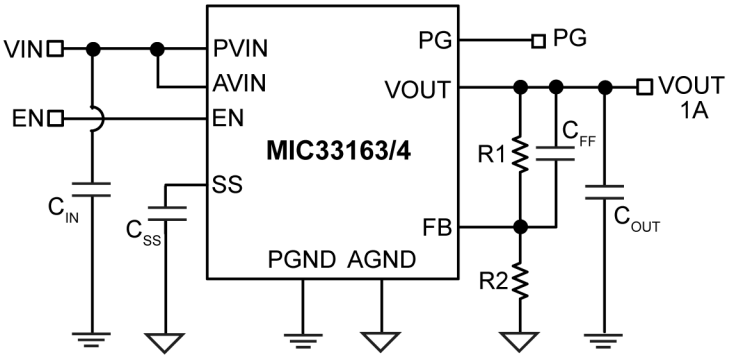
The MIC33163/4 and MIC33263/4 are highly efficient synchronous buck regulators with integrated inductors that provide the optimal trade-off between footprint and efficiency. Both parts operate at 4MHz switching frequency and provides up to 1A (MIC33163/4) or 2A (MIC33263/4) output current. In addition, the 100% duty cycle and HyperLight Load® (HLL) mode of operation delivers very high efficiency at light loads and ultra-fast transient response which makes either part perfectly suited for any space constrained application and great alternatives for low dropout regulators. An additional benefit of this proprietary architecture is very low output ripple voltage throughout the entire load range with the use of small output capacitors.

The MIC33163/4 and MIC33263/4 provide small compact total solution sizes of 4.6mm × 7mm with very few tiny external components.

At higher loads, the MIC33163/4 and MIC33263/4 provide a constant switching frequency around 4MHz while achieving peak efficiencies up to 93%. They also include undervoltage lockout to ensure proper operation during power-sag conditions, internal soft-start to reduce inrush current, foldback current limit, power good (PG) indicator, and thermal shutdown. The MIC33163/4 is available in a 20-pin 2.5mm × 3.0mm × 1.1mm QFN package and the MIC33263/4 is available in a 20-pin 2.5mm × 3.0mm × 1.9mm QFN package, both with an operating junction temperature range from –40°C to +125°C.

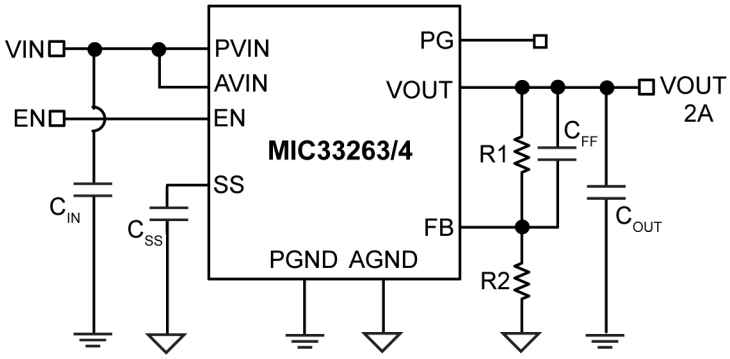
Features

- Integrated MOSFETs, inductor
- 100% duty cycle
- 4MHz PWM operation in continuous mode
- 1A output current (MIC33163/4)
- 2A output current (MIC33263/4)
- Low output voltage ripple
- 85% typical efficiency at 1mA, up to 93% peak efficiency
- Ultra-fast transient response
- Advanced copper lead frame design provides superior thermal performance
- Low radiated emission (EMI) per EN55022, Class B
- Adjustable output voltage 0.7V to 5V
- Thermal-shutdown and current-limit protection
- Configurable soft-start with pre-bias start-up capability
- Auto discharge of 180Ω (MIC33164 and MIC33264 only)
- Low profile 2.5mm x 3.0mm x 1.1mm QFN packages (MIC33163/4)
- Low profile 2.5mm x 3.0mm x 1.9mm QFN packages (MIC33263/4)
- 0.1µA shutdown current
- 33µA quiescent current



Applications

- 5V point-of-load (POL)
- Low-voltage distributed power systems
- Space-constrained applications
- Portable devices
- SSD storage systems
- Digital cameras



MIC45205/MIC45208/MIC45212
26V, 6A/10A/14A DC-to-DC Power Modules

Micrel's MIC45205, MIC45208, and MIC45212 are synchronous step-down regulator modules, featuring a unique adaptive ON-time control architecture. The modules incorporate a DC-to-DC controller, power MOSFETs, bootstrap diode, bootstrap capacitor, and an inductor in a single package; simplifying the design and layout process for the end user.

These highly integrated solutions expedite system design and improve product time-to-market. The internal MOSFETs and inductor are optimized to achieve high efficiency at a low output voltage. The fully-optimized designs can deliver up to 6A/10A/14A current under a wide input voltage range of 4.5V to 26V, without requiring additional cooling.

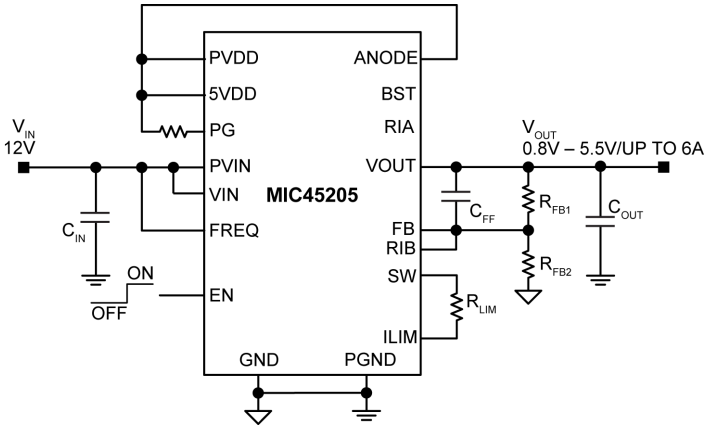
The MIC45205-1, MIC45208-1, and MIC45212-1 use Micrel's HyperLight Load® (HLL) MIC45205-2, MIC45208-2, and MIC45212-2 use Micrel's Hyper Speed Control™ architecture that enable ultra-fast load transient response, allowing for a reduction of output capacitance. All three parts offer 1% output accuracy that can be adjusted from 0.8V to 5.5V with two external resistors. Additional features include thermal shutdown protection, input undervoltage lockout, adjustable current limit, and short circuit protection. The MIC45205, MIC45208, and MIC45212 allow for safe start-up into a pre-biased output.

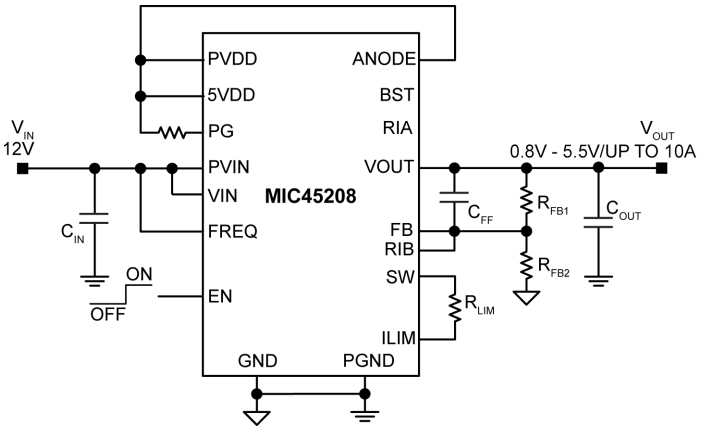
Features

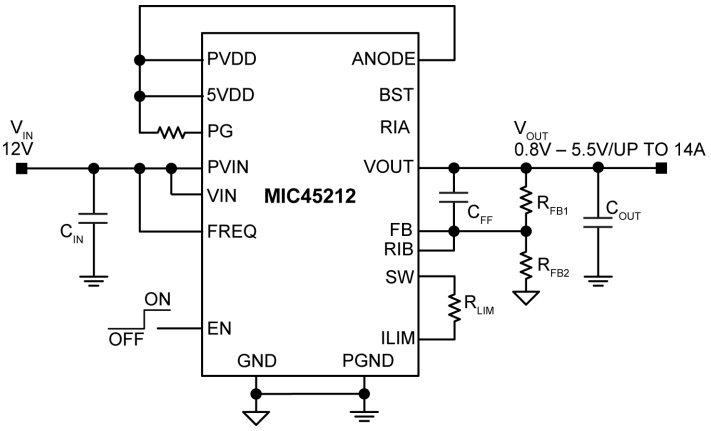
- No compensation required
- Up to 6A, 10A, or 14A output current
- >93% peak efficiency
- Output voltage: 0.8V to 5.5V with ±1% accuracy
- Adjustable switching frequency from 200kHz to 600kHz
- Enable input and open-drain power good output
- Hyper Speed Control (MIC45205-2, MIC45208-2, MIC45212-2) architecture enables fast transient response
- HyperLight Load (MIC45205-1, MIC45208-1, MIC45212-1) improves light load efficiency
- Supports safe start-up into pre-biased output
- CISPR22, Class B compliant
- –40°C to +125°C junction temperature range
- Thermal-shutdown protection
- Short-circuit protection with hiccup mode
- Adjustable current limit
- Available in the following packages:
  - 52-pin 8mm x 8mm x 3mm QFN (MIC45205)
  - 52-pin 10mm x 10mm x 4mm QFN (MIC45208)
  - 64-pin 12mm x 12mm x 4mm QFN (MIC45212)

Applications

- High power density point-of-load conversion
- Servers, routers, networking, and base stations
- FPGAs, DSP, and low voltage ASIC power supplies
- Industrial and medical equipment







Power Management Selection Guide

Linear Power Filters (Discrete Ripple Blocker™)

Bold = New P/N	Rated I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	Voltage Drop Typ (mV)	V_{D-OUT} @ Rated I_{OUT} Typ (mV)	I_{GND} Typ (µA)	Tol Typ %	Noise (µV) rms	PSRR 100Hz (dB)	PSRR 100kHz (dB)	PSRR 1MHz (dB)	PSRR 10MHz (dB)	Load Dischg	µCap	* = Reduced height package Package
MIC94300	200mA	1.8	3.6	Input Follower	170		138		98	0	58	60	55		X	1.2x1.6*, 0.88x0.88 CSP
MIC94305	500mA	1.8	3.6	Input Follower	170		150		98	0	55	60	55		X	1.6x1.6*, 0.84x1.32 CSP
MIC94310	200mA	1.8	3.6	1.2, 1.5, 1.8, 1.85, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3		40	170	±1	83	85	68	57	50		X	1.2x1.6*, 0.88x0.88 CSP, SOT-23
MIC94325	500mA	1.8	3.6	Adj		100	170	±1	83	85	57	60			X	1.6x1.6*, 0.84x1.32 CSP
MIC94345	500mA	1.8	3.6	1.2, 1.5, 1.8, 2.8, 3.3		100	170	±1	83	85	57	60			X	1.6x1.6*, 0.84x1.32 CSP
MIC94355	500mA	1.8	3.6	1.2, 1.5, 1.8, 2.8, 3.3		100	170	±1	83	85	57	60		X	X	1.6x1.6*, 0.84x1.32 CSP

Single LDOs

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* = Reduced height package Package
MIC5231	10mA	3.5	12	2.75, 3.0, 3.3, 5.0	150	650nA	50					X		SOT23-5
MIC5232	10mA	2.7	7.0	1.2, 2.5, 2.8, 3.3	100	1.8µA	55					X		SOT23-5*, 2x2
MAQ5280	25mA	4.5	120	Adj	1,100	31µA	80	X	X			X		eSOIC-8
MAQ5281	25mA	6.0	120	3.3, 5.0, Adj	2,000	6µA	90	X				X		eMSOP-8
MAQ5282	50mA	6.0	120	3.3, 5.0, Adj	2,000	6µA	90	X				X		eMSOP-8
MAQ5283	150mA	6.0	120	3.3, 5.0, Adj	1,800	8µA	75	X				X		eSOIC-8
MIC5281	25mA	6.0	120	3.3, 5.0, Adj	2,000	6µA	90	X				X		eMSOP-8, MSOP-8
MIC5280	25mA	4.5	120	Adj	1,100	31µA	80	X	X			X		eSOIC-8
MIC5282	50mA	6.0	120	3.3, 5.0, Adj	2,000	6µA	90	X				X		eMSOP-8, MSOP-8
MIC5283	150mA	6.0	120	3.3, 5.0, Adj	1,800	8µA	75	X				X		eMSOP-8, 3x3
MIC5203	80mA	2.5	16	2.6, 2.8, 3.0, 3.3, 3.6, 3.8, 4.0, 4.5, 5.0	300	180µA	60		X			X		SOT23-5, SOT143
MIC5213	80mA	2.5	16	2.5, 2.6, 2.7, 2.8, 3.0, 3.3, 3.6, 5.0	280	180µA	60		X			X		SC70-5
LP2951	100mA	2.0	30	4.8, 5.0, Adj	380	100µA	70			X				SOIC-8, PDIP-8
MIC5200	100mA	2.5	26	3.0, 3.3, 4.8, 5.0	230	130µA	70		X					MSOP-8, SOIC-8, SOT223
MIC5233	100mA	2.3	36	1.8, 2.5, 3.0, 3.3, 5.0, Adj	270	18µA	50		X			X		SOT23-5, SOT223
MIC5253	100mA	2.7	5.5	1.5, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3	165	75µA	70					X		SC70-5
MIC5270	100mA	-2.0	-16	–3.0, –4.1, –5.0, Adj	500	35µA	50					X		SOT23-5
MIC5271	100mA	-3.3	-16	–3.0, –5.0, Adj	500	25µA	50					X		SOT23-5
MIC2950	150mA	2.0	30	5.0	300	120µA	65	X	X	X				TO92
MIC2951	150mA	2.0	30	3.3, 5.0	320	120µA	67	X	X	X				MSOP-8, SOIC-8, PDIP-8
MIC5205	150mA	2.5	16	2.5, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0, Adj	165	80µA	75		X					SOT23-5
MIC5206	150mA	2.5	16	2.5, 2.7, 3.0, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0, Adj	165	1.3mA	75		X	X				MSOP-8, SOT23-5
MIC5225	150mA	2.3	16	1.5, 1.8, 2.5, 2.7, 3.0, 3.3, 5.0, Adj	310	29µA	35		X			X		SOT23-5
MIC5234	150mA	2.3	30	Adj	320	20µA		X	X			X		eSOIC-8
MIC5235	150mA	2.3	24	1.5, 1.8, 2.5, 2.7, 3.0, 3.3, 5.0, Adj	310	18µA	35		X			X		SOT23-5
MIC5236	150mA	2.3	30	2.5, 3.0, 3.3, 5.0, Adj	300	20µA	55	X	X	X		X		MSOP-8, SOIC-8
MIC5247	150mA	2.7	6.0	1.5, 1.6, 1.8, 1.85, 2.0, 2.1, 2.2, 2.4	150	85µA	60			X		X		SOT23-5,SOT23-5*, 2x2
MIC5248	150mA	2.7	6.0	1.2		100µA	63			X	X	X		SOT23-5, 2x2
MIC5238	150mA	1.5	6.0	1.0, 1.1, 1.3	310	23µA	50				X	X	X	SOT23-5,SOT23-5*
MIC5252	150mA	2.7	6.0	1.8, 2.5, 2.8, 2.85, 3.0, 4.75	135	90µA	60					X		SOT23-5, 2x2

Power Management Selection Guide

Single LDOs

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* = Reduced height package Package
MIC5255	150mA	2.7	6.0	2.5, 2.6, 2.7, 2.75, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3, 3.5	135	90µA	60					X		SOT23-5,SOT23-5*, 2x2
MIC5256	150mA	2.7	6.0	1.5, 1.8, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3	135	90µA	60			X		X		SOT23-5,SOT23-5*
MIC5258	150mA	2.7	6.0	1.2		85µA				X	X	X		SOT23-5
MIC5265	150mA	2.7	5.5	1.5, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3	210	75µA	64					X		SOT23-5*
MIC5268	150mA	2.7	6.0	1.2		110µA				X	X	X		SOT23-5
MIC5295	150mA	2.3	24	3.0, 3.3, 5.0, Adj	310	18µA	50		X			X		TO252-5
MIC5301	150mA	2.3	5.5	1.3, 1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6, Adj	40	85µA	75					X		SOT23-5*, 1.6x1.6*, 1.6x1.6
MIC5305	150mA	2.25	5.5	1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6, 4.75, Adj	60	90µA	85					X		2x2, 2x2*, SOT23-5*
MIC5302	150mA	2.3	5.5	1.3, 1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6	50	85µA	65					X		1.2x1.6*
MIC5304	150mA	2.3	5.5	3.15/1.85, 3.15/1.875, 3.2/1.8	85	24µA	65					X		1.6x1.6*
MIC5306	150mA	2.25	5.5	1.8, 2.5, 2.6	45	16µA	62					X		SOT23-5*
MIC5308	150mA	1.6	5.5	1.2, 1.5, 1.8, Adj	45	23µA	90				X	X	X	SOT23-6*, 1.6x1.6*
MIC5323	300mA	2.7	5.5	1.8, 2.8, 3.3, Adj	120	90µA	80					X		SOT23-5*, 2x2*
MIC5326	150mA	2.3	5.5	2.8	85	24µA	60					X		1.2x1.6*
MIC5363	300mA	2.5	5.5	1.2, 2.1, 2.8, 3.3	225	38µA	80				X	X		1.2x1.2*
MIC5364	300mA	2.5	5.5	1.2, 2.1, 2.8, 3.3	225	38µA	80				X	X		1.2x1.2*
MIC5365	150mA	2.5	5.5	1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3	155	32µA	80					X		SC70-5, 1x1*
MIC5366	150mA	2.5	5.5	1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3	155	32µA	80					X		SC70-5, 1x1*
MIC5375	150mA	2.5	5.5	2.8	120	29µA	60					X		SC70-5, 1x1*
MIC5376	150mA	2.5	5.5	2.8	120	29µA	60					X		SC70-5, 1x1*
MIC5377	150mA	2.5	5.5	Adj	120	29µA	60					X		SC70-5, 1.2x1.2*
MIC5378	150mA	2.5	5.5	Adj	120	29µA	60					X		SC70-5, 1.2x1.2*
MIC5207	180mA	2.5	16	1.8, 2.5, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 4.0, 5.0, Adj	165	80µA	75		X					SOT23-5, SOT23-5*
MIC5201	200mA	2.5	26	3.0, 3.3, 4.8, 5.0, Adj	270	130µA	75	X	X					SOIC-8, SOT223
MIC5367	200mA	2.5	5.5	1.2, 1.5, 3.3	180	29µA	65				X	X		1.6x1.6*
MIC5368	200mA	2.5	5.5	1.2, 1.5, 3.3	180	29µA	65				X	X		1.6x1.6*
MIC2954	250mA	2.0	30	5.0, Adj	375	140µA		X		X				SOIC-8, SOT223, TO220-3
MIC5249	300mA	2.7	6.0	1.5, 1.8, 2.5, 2.8, 2.85, 3.0, 3.3	340	85µA	65			X		X		MSOP-8
MIC5259	300mA	2.7	6.0	1.5, 1.8, 2.1, 2.5, 2.8, 2.85, 3.0, 3.3	300	105µA	70					X		SOT23-5*, 2x2
MIC5303	300mA	2.3	5.5	1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3	100	85µA	65					X		1.2x1.6*
MIC5307	300mA	2.4	5.5	1.5, 1.8, 2.8, 3.0	120	20µA	62					X		SOT23-5*, 2x2
MIC5309	300mA	1.7	5.5	1.2, 1.5, 1.8, Adj	100	23µA	90				X	X	X	SOT23-6*, 1.6x1.6*
MIC5318	300mA	2.3	6.0	1.5, 1.8, 2.5, 2.8, 3.3, Adj	110	85µA	75					X		SOT23-5*, 1.6x1.6*
MIC5327	300mA	2.3	5.5	1.8, 2.8	180	24µA	60					X		1.2x1.6*
MIC5337	300mA	2.3	5.5	1.8, 2.8	180	24µA	65					X		1.2x1.6*
MIC5501	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.3	160	38µA	60					X		1x1*
MIC5502	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.3	160	38µA	60					X		1x1*
MIC5503	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.3	160	38µA	60					X		1x1*
MIC5504	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.1, 3.3	160	38µA	60					X		1x1*, SOT23-5
MIC5512	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.3	160	38µA	65					X		1.6x1.6*
MIC5514	300mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.3	160	38µA	65					X		1.6x1.6*
MIC29201	400mA	2.0	26	3.3, 4.8, 5.0, 12	400	140µA	70	X	X	X				TO220-5, TO263-5, SOIC-8

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Single LDOs

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* = Reduced height package Package
MIC29202	400mA	2.0	26	Adj	400	140µA	70	X	X					TO220-5, TO263-5
MIC29204	400mA	2.0	26	5.0, Adj	400	140µA	70	X	X					SOIC-8, PDIP-8
MIC2920A	400mA	2.0	26	3.3, 4.8, 5.0, 12	400	140µA	70	X	X					SOT223, TO220
MIC5209	500mA	2.5	16	1.8, 2.5, 3.0, 3.3, 3.6, 4.2, 5.0, Adj	350	8mA	75		X					SOIC-8, SOT223, TO263-5, 3x3
MIC5216	500mA	2.5	12	2.5, 3.3, 3.6, 5.0	300	8mA	75		X	X				SOT23-5, MSOP-8
MIC5325	400mA	1.7	5.5	1.2, 1.5, 1.8, 3.3, 3.6	110	35µA	65				X	X	X	2x2*
MIC47050	500mA	1.0	3.6	1.2, 1.8, Adj	44	6µA	50			X	X	X	X	2x2*, 2x2
MIC47053	500mA	1.0	3.6	Adj	44	6µA	55			X	X	X	X	2x2*
MIC5219	500mA	2.5	12	2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3, 3.6, 5.0, Adj	350	12mA	75		X					SOT23-5, MSOP-8, 2x2*, 2x2
MIC5237	500mA	2.5	16	2.5, 3.3, 5.0	300	8mA	75		X					TO220-3, TO263-3
MIC5239	500mA	2.3	30	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	350	23µA	50		X	X		X		MSOP-8, SOIC-8, SOT223
MIC5319	500mA	2.5	5.5	1.375, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3, 5.0, Adj	200	90µA	70					X		SOT23-5*, 2x2
MIC5353	500mA	2.6	6.0	1.8, 2.5, 2.6, 2.8, 3.0, 3.3, Adj	160	90µA	60					X		1.6x1.6
MIC29371	750mA	4.3	26	3.3, 5.0, 12	370	160µA		X	X	X				TO220-5, TO263-5
MIC29372	750mA	4.3	26	Adj	370	160µA		X	X					TO220-5, TO263-5
MIC2937A	750mA	4.3	26	3.3, 5.0, 12	370	160µA		X	X					TO220-3, TO263-3
MIC3775	750mA	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.0, 3.3, Adj	280	6.5mA	60			X		X		MSOP-8
MIC3975	750mA	2.25	16	1.65, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	300	7.5mA	55			X		X		MSOP-8
MIC37100	1.0A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	280	400µA	50		X			X		SOT223
MIC37101	1.0A	2.25	6.0	1.5, 1.65, 1.8, 2.1, 2.5, 3.3	280	400µA	50		X	X		X		SOIC-8
MIC37102	1.0A	2.25	6.0	Adj	280	400µA	50		X			X		SOIC-8, SPAK-5
MIC37110	1.0A	2.375	5.5	1.8	230	250µA	60					X		SOT223, SOIC-8, 2x2
MIC37112	1.0A	2.375	5.5	Adj.	230	250µA	60				X	X		SOIC-8, 2x2
MIC37120	1.0A	2.375	5.5	1.8	230	250µA	60					X		SOIC-8, 2x2
MIC37122	1.0A	2.375	5.5	Adj.	230	250µA	60				X	X		SOIC-8, 2x2
MIC39100	1.0A	2.25	16	1.8, 2.5, 3.3, 5.0	410	6.5mA	55		X					SOT223
MIC39101	1.0A	2.25	16	1.8, 2.5, 3.3, 5.0	410	6.5mA	55		X	X				SOIC-8
MIC39102	1.0A	2.25	16	Adj	410	6.5mA	55		X					SOIC-8
MIC47100	1.0A	1.0	3.6	0.8, 1.0, 1.2, Adj	80	350µA	80				X	X	X	eMSOP-8, 2x2
MIC69101	1.0A	1.65	5.5	1.8	215	11mA	55			X	X	X		3x3
MIC69103	1.0A	1.65	5.5	Adj	215	11mA	55			X	X	X		3x3
MIC2940A	1.25A	2.0	26	3.3, 5.0, 12	400	35mA		X	X					TO220-3, TO263-3
MIC2941A	1.25A	2.0	26	Adj	400	35mA		X	X					TO220-5, TO263-5
MIC29150	1.5A	2.25	26	3.3, 5.0, 12	350	22mA		X	X					TO220-3, TO263-3
MIC29151	1.5A	2.25	26	3.3, 5.0, 12	350	22mA		X	X	X				TO220-5, TO263-5
MIC29152	1.5A	2.25	26	Adj	350	22mA		X	X					TO220-5, TO252-5
MIC35152	1.5A	2.25	6.0	Adj	365	11mA	45					X		TO252-5
MIC37150	1.5A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	325	17mA	45		X			X		SPAK-3
MIC37151	1.5A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	325	17mA	45		X	X		X		SPAK-5, eSOIC-8
MIC37152	1.5A	2.25	6.0	Adj	325	17mA	45		X			X		SPAK-5, SOIC-8
MIC37153	1.5A	2.25	6.	Adj	325.	17mA	45.		X	X		X		eSOIC-8
MIC39150	1.5A	2.25	16	1.65, 1.8, 2.5	375	17mA	53		X					TO220-3, TO263-3
MIC39151	1.5A	2.25	16	1.65, 1.8, 2.5	375	17mA	53		X	X				TO220-5, TO263-5
MIC39152	1.5A	2.25	16	Adj	375	17mA	53		X					TO252-5, TO263-5
MIC47150	1.5A	1.4	6.5	Adj	280	15mA	55				X	X	X	TO252-5
MIC49150	1.5A	1.4	6.5	0.9, 1.2, 1.5, 1.8, Adj	280	15mA	57				X	X	X	MSOP-8, SPAK-5

Power Management Selection Guide

Single LDOs

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* = Reduced height package Package
MIC59150	1.5A	1.0	3.8	Adj	100	12.5mA	60				X	X	X	eSOIC-8
MIC61150	1.5A	1.1	3.6	1.0, Adj	75	7.6mA	50				X	X		eMSOP-10, 3x3
MIC69151	1.5A	1.65	5.5	1.8	250	20mA	55			X	X	X		eSOIC-8, 3x3
MIC69153	1.5A	1.65	5.5	Adj	250	20mA	55			X	X	X		eSOIC-8, 3x3
MIC49200	2.0A	1.4	6.5	1.0, 1.8, Adj	400	15mA	83				X	X	X	SPAK-5
MIC68200	2.0A	1.65	5.5	1.2, 1.5, 1.8, 2.5, 3.3, Adj	300	42mA	60			X	X	X		3x3
MIC37252	2.5A	3.0	6.0	Adj	550	40mA	50					X		SPAK-5, TO263-5
MIC29300	3.0A	2.25	26	3.3, 5.0, 12	370	37mA		X	X					TO220-3, TO263-3
MIC29301	3.0A	2.25	26	3.3, 5.0, 12	370	37mA		X	X	X				TO220-5, TO263-5
MIC29302	3.0A	2.25	26	Adj	370	37mA		X	X					TO220-5, TO263-5
MIC29302A	3.0A	3.00	16	Adj	450	60mA			X					TO252-5, TO263-5
MIC29303	3.0A	2.25	26	Adj	370	37mA		X	X	X				TO220-5, TO263-5
MIC29310	3.0A	2.3	16	3.3, 5.0	600	60mA		X	X					TO220-3, TO263-3
MIC29311	3.0A	2.3	8.0	5.1	600	60mA		X	X	X				TO220-5
MIC29312	3.0A	2.3	16	Adj	600	60mA		X	X					TO220-5, TO263-5
MIC35302	3.0A	2.25	6.0	Adj	370	20mA	50		X			X		TO252-5
MIC37300	3.0A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	300	27mA	50					X		SPAK-3
MIC37301	3.0A	2.25	6.0	1.5, 1.8, 2.5, 3.3	300	27mA	50			X		X		SPAK-5, eSOIC-8
MIC37302	3.0A	2.25	6.0	Adj	300	27mA	50					X		SPAK-5, TO263-5
MIC37303	3.0A	2.25	6.0	Adj	300	27mA	50			X		X		eSOIC-8
MIC39300	3.0A	2.25	16	1.8, 2.5	385	45mA			X					TO220-3, TO263-3
MIC39301	3.0A	2.25	16	1.8, 2.5	385	45mA			X	X				TO220-5, TO263-5
MIC39302	3.0A	2.25	16	Adj	385	45mA			X					TO263-5
MIC47300	3.0A	1.4	6.5	Adj	230	25mA						X	X	TO252-5
MIC49300	3.0A	1.4	6.5	0.9, 1.2, 1.5, 1.8, Adj	280	25mA					X	X	X	SPAK-5
MIC59300	3.0A	1.0	3.8	1.2V, Adj	205	30mA	65				X	X	X	TO263-5, eSOIC-8
MIC61300	3.0A	1.1	3.6	1.0, Adj	150	7.6mA	55				X	X		eMSOP-10, 3x3
MIC69301	3.0A	1.65	5.5	1.2	275	32mA	55			X	X	X		SPAK-5, eSOIC-8, TO263-5
MIC69302	3.0A	1.65	5.5	Adj	275	32mA	55				X	X		SPAK-5, TO263-5
MIC69303	3.0A	1.65	5.5	Adj	275	32mA	55			X	X	X		eSOIC-8, 4x4
MIC68400	4.0A	1.65	5.5	1.8, Adj	360	90mA	50			X	X	X		4x4
MIC29500	5.0A	2.25	26	3.3, 5.0, 12	370	70mA		X	X					TO220-3
MIC29501	5.0A	2.25	26	3.3, 5.0, 12	370	70mA		X	X	X				TO220-5, TO263-5
MIC29502	5.0A	2.25	26	Adj	370	70mA		X	X					TO220-5, TO263-5
MIC29503	5.0A	2.25	26	Adj	370	70mA		X	X	X				TO220-5, TO263-5
MIC29510	5.0A	2.3	16	3.3, 5.0	700	100mA		X	X					TO220-3
MIC29512	5.0A	2.3	16	Adj	700	100mA		X	X					TO220-5
MIC37501	5.0A	2.3	6.0	1.5, 1.65, 1.8, 2.5, 3.3	330	57mA				X		X		SPAK-7
MIC37502	5.0A	2.3	6.0	Adj	330	57mA						X		SPAK-7, TO263-5
MIC49500	5.0A	1.4	6.0	0.9, 1.2, Adj	290	55mA	75				X	X	X	SPAK-7
MIC39500	5.0A	2.25	16	1.8, 2.5	400	70mA	30		X					TO220-3, TO263-3
MIC39501	5.0A	2.25	16	1.8, 2.5	400	70mA	30		X	X				TO220-5, TO263-5
MIC69502	5.0A	1.65	5.5	Adj	250	54mA	52				X	X		SPAK-5
MIC39500	5.0A	2.25	16	1.8, 2.5	400	70mA	30		X					TO220-3, TO263-3
MIC29710	7.5A	2.3	16	3.3, 5.0	700	250mA								TO220-3
MIC29712	7.5A	2.3	16	Adj	700	250mA								TO220-5
MIC29750*	7.5A	2.5	26	3.3, 5.0	425	120mA		X	X					TO247-3

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Single LDOs

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* = Reduced height package Package
MIC29751	7.5A	2.5	26	3.3, 5.0	425	120mA		X	X	X				TO247-5
MIC29752	7.5A	2.5	26	Adj	425	120mA		X	X					TO247-5
MIC5524	500mA	2.5	5.5	1.2, 1.8, 2.8, 3.0, 3.3	260	38µA	65					X		1x1*
MIC5528	500mA	2.5	5.5	3.3	260	38µA	70					X		1.2x1.2*
MIC5317	150mA	2.5	6.0	1.0, 1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.3	155	32µA	80					X		1x1*, SOT23-5, TSOT23-5
MIC68401	4.0A	1.65	5.5	Adj	360	90mA	50			X	X	X		4x4
MIC29302H	3.0A	2.25	26	Adj	370	37mA		X	X					TO263-5

*Not recommended for new designs.

Dual LDOs

Bold = New P/N	I_{OUT} #1	I_{OUT} #2	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* Reduced Height Package Package
MIC5208	50mA	50mA	2.5	16	3.0/3.0, 3.3/3.3, 3.6/3.6, 4.0/4.0, 5.0/5.0	250	180µA		X			X		MSOP-8
MIC5211	80mA	80mA	2.5	16	1.8/1.8, 1.8/2.5, 1.8/3.3, 2.5/2.5, 2.5/3.3, 2.5/5.0, 2.7/2.7, 2.8/2.8, 3.0/3.0, 3.3/3.3, 5.0/5.0	250	90uA		X			X		SOT23-6
MIC5202	100mA	100mA	2.5	26	3.0/3.0, 3.3/3.3, 4.8/4.8, 5.0/5.0	225	170µA		X					SOIC-8
MIC5210	150mA	150mA	2.5	16	2.7/2.7, 2.8/2.8, 2.8/3.0, 2.9/2.9, 3.0/3.0, 3.3/3.3, 3.6/3.6, 4.0/4.0, 5.0/5.0	165	80µA	75	X					MSOP-8
MIC5310	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	35	85µA	70				X		2x2
MIC5320	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.4/1.5, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3, 4.6/2.8	35	85µA	65				X		1.6x1.6*, 1.6x1.6, SOT23-6*
MIC5321	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3, 4.6/2.8	35	85µA	75				X		1.6x1.6*, 1.6x1.6, SOT23-6*
MIC5322	150mA	150mA	2.3	5.5	2.8/1.5, 2.8/1.8, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	35	150µA	75				X		1.6x1.6*
MIC5370	150mA	150mA	2.3	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 3.0/1.8, 3.0/2.6, 3.0/2.8, 3.0/3.0, 3.3/1.8, 3.3/2.6, 3.3/2.8, 3.3/3.0, 3.3/3.3	155	32µA	60			X	X		1.6x1.6*
MIC5371	150mA	150mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.5, 2.8/1.8, 2.8/2.8, 3.0/2.8, 3.0/3.0, 3.3/1.8, 3.3/1.8, 3.3/3.0, 3.3/3.3	155	32µA	60			X	X		1.6x1.6*
MIC5380	150mA	150mA	2.5	5.5	1.8/1.2, 2.6/2.0, 2.7/2.7, 2.8/1.2, 2.8/1.8, 3.0/3.0, 3.3/3.3	155	32µA	60			X	X		1x1*
MIC5381	150mA	150mA	2.5	5.5	1.8/1.2, 2.8/1.2, 2.8/1.8, 3.0/3.0, 3.3/3.3	155	32µA	60			X	X		1x1*
MIC5264	150mA	150mA	2.7	5.5	2.5/1.8, 2.6/1.8, 2.6/2.6, 2.8/1.5, 2.8/1.8, 2.8/2.5, 2.8/2.6, 2.8/2.8, 2.85/1.8, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.6, 3.0/1.8, 3.0/2.5, 3.0/2.8, 3.0/3.0, 3.3/3.0, 3.3/1.8, 3.3/2.5, 3.3/3.3	210	75µA	64				X		2.5x2.5
MIC5254	150mA	150mA	2.7	6.0	3.3/2.5	135	96µA	60		X		X		MSOP-10
MIC5388	200mA	200mA	2.5	5.5	3.3/1.8, 2.8/2.8, 2.8/2.7, 2.8/1.8, 2.8/1.2, 1.8/1.2	175	32µA	73			X			CSP-6 (1.5x1)
MIC5389	200mA	200mA	2.5	5.5	3.3/1.8, 2.8/2.8, 2.8/2.7, 2.8/1.8, 2.8/1.2, 1.8/1.2	175	32µA	73			X			CSP-6 (1.5x1)
MIC2211	150mA	300mA	2.25	5.5	1.5/1.8, 1.5/2.8, 1.5/2.85, 1.5/2.9, 1.5/3.1, 1.6/2.8, 1.6/2.9, 1.6/3.3, 1.8/2.5, 1.8/2.6, 1.8/2.8, 1.8/2.9, 1.8/3.0, 1.8/3.3, 1.9/2.8, 2.0/3.0, 2.5/1.8, 2.5/1.9, 2.5/2.8, 2.5/3.0, 2.5/3.3, 2.6/1.8, 2.6/2.85, 2.6/3.0, 2.7/1.8, 2.7/3.0, 2.8/1.5, 2.8/1.6, 2.8/1.8, 2.8/2.5, 2.8/2.8, 2.8/3.0, 2.8/3.3, 2.85/2.85, 2.85/3.3, 2.9/1.5, 2.9/2.9, 3.0/1.6, 3.0/2.7, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.0/3.3, 3.3/1.8, 3.3/2.8, 3.3/3.3, 3.6/3.6, Adj/Adj	124/240	48/60µA	60				X		3x3

Power Management Selection Guide

Dual LDOs

Bold = New P/N	I_{OUT} #1	I_{OUT} #2	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} Typ	PSRR (dB)	Rev Bat	PWR Good	V_{OUT} ≤1.2V	µCap	V_{BIAS} Reqd	* Reduced Height Package Package
MIC2212	150mA	300mA	2.25	5.5	1.6/2.8, 1.6/3.3, 1.8/2.6, 1.8/2.7, 1.8/2.8, 1.8/3.3, 1.85/2.85, 1.85/2.9, 2.5/3.3, 2.6/2.8, 2.6/2.85, 2.7/2.8, 2.7/2.9, 2.7/3.0, 2.8/2.6, 2.8/2.8, 2.8/3.0, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.0/3.3, 3.3/1.8, 3.3/2.5, 3.3/2.8, 3.3/3.6	124/240	48/60µA	60		X		X		3x3
MIC2213	150mA	300mA	2.25	5.5	1.8/2.85, 2.5/3.3, Adj/Adj	124/240	48/60µA	60		X		X		3x3, 4x4
MIC2214	150mA	300mA	2.25	5.5	1.5/2.8, 1.6/2.8, 1.6/3.0, 1.6/3.3, 1.8/2.6, 1.8/2.7, 1.8/2.8, 1.8/2.9, 1.8/3.0, 1.8/3.3, 1.85/2.6, 1.85/2.65, 1.85/2.7, 1.85/2.85, 1.85/2.9, 2.5/1.8, 2.5/2.8, 2.5/3.0, 2.5/3.1, 2.6/2.6, 2.6/2.8, 2.6/2.85, 2.6/3.0, 2.7/2.8, 2.7/3.0, 2.8/2.8, 2.8/3.0, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.3, 3.0/1.6, 3.3/1.8, 3.3/2.8, 3.3/1.6, Adj/Adj	124/240	48/60µA	60		X		X		3x3, 4x4
MIC2219	150mA	300mA	2.25	5.5	3.0/3.3	120	48µA	60				X		3x3
MIC5311	300mA	300mA	2.5	5.5	1.8/2.8, 1.85/2.6, 2.85/2.7	120	28µA	60				X		3x3
MIC5312	300mA	300mA	2.5	5.5	1.8/2.8, 1.85/2.6	120	28µA	60		X		X		3x3
MIC5313	300mA	300mA	1.7	5.5	1.5/1.0, 1.5/1.1, 1.5/1.2, 1.5/1.3, 1.5/1.4, 1.5/1.5, 1.8/1.2, 1.8/1.8	85	30µA	65			X	X	X	2x2*
MIC2210	150mA	300mA	2.25	5.5	1.5/2.8, 1.8/3.3, 2.8/1.6, 2.8/3.0, 3.0/3.3, 3.3/3.3	124/240	48/60µA	60				X		3x3
MIC5314	300mA	300mA	1.7	5.5	1.5/1.0, 1.5/1.1, 1.5/1.2, 1.5/1.3, 1.5/1.4, 1.5/1.5, 1.8/1.2, 1.8/1.8	85	30µA	65		X	X	X	X	2.5x2.5*
MIC5315	300mA	300mA	1.7	5.5	1.5/(1.2/1.0),1.5/(1.3/1.0), 1.8/(1.6/1.1), 1.8/(1.8/1.0)	85	30µA	65			X	X	X	2x2*
MIC5316	300mA	300mA	1.7	5.5	1.5/(1.2/1.0),1.5/(1.3/1.0), 1.8/(1.6/1.1), 1.8/(1.8/1.0)	85	30µA	65		X	X	X	X	2.5x2.5*
MIC5330	300mA	300mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	75	85µA	70				X		2x2
MIC5331	300mA	300mA	2.3	5.5	1.8/1.2, 2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	120	40µA	65				X		2x2*
MIC5332	300mA	300mA	2.3	5.5	1.8/1.2, 2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	120	40µA	65		X		X		2x2*
MIC5333	300mA	300mA	2.3	5.5	2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.85,3.0/3.0	120	40µA	65		X		X		2.5x2.5*
MIC5335	300mA	300mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5 3.3/2.6, 3.3/2.7, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	75	90µA	65				X		1.6x1.6*
MIC5338	300mA	300mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.8, 3.3/2.8	220	38µA	55			X	X		1.6x1.6*
MIC5339	300mA	300mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.8, 3.3/2.8	220	38µA	55			X	X		1.6x1.6*
MIC5350	300mA	500mA	2.6	5.5	2.8/1.8, 2.8/2.8, 3.0/1.8, 3.3/1.8, 3.3/2.8	75/125	95µA	50				X		2x2*
MIC5212	500mA	500mA	4.0	16	3.3/2.5	350	1.5mA	75				X		SOIC-8
MIC5355	500mA	500mA	2.5	5.5	1.8/1.2, 2.5/1.8, 3.3/1.0, 3.3/1.2, 3.3/1.8	350	38µA	55			X	X		eMSOP-8
MIC5356	500mA	500mA	2.5	5.5	1.8/1.2, 2.5/1.8, 3.3/1.0, 3.3/1.2, 3.3/1.8	350	38µA	55			X	X		eMSOP-8, 3x3
MIC5357	500mA	500mA	2.6	5.5	1.8/1.5, 2.8/1.8, 3.3/1.8, 3.3/2.8	130	95µA	70				X		eMSOP-8
MIC68220	2.0A	2.0A	1.65	5.5	Adj/Adj	300	15mA	40		X	X	X		4x5
MIC5392	150mA	150mA	2.5	5.5	1.2/1.0, 2.8/1.5, 2.8/1.8, 3.0/2.8, 3.3/3.3	155	57µA	60			X	X		1.2x1.2*
MIC5393	150mA	150mA	2.5	5.5	3.0/3.0, 3.3/1.8, 3.3/3.3	155	57uA	60				X		1.2x1.2*
MIC5396	300mA	300mA	2.5	5.5	1.8/2.8	160	37uA	60				X		1.2x1.6*
MIC5397	300mA	300mA	2.5	5.5	1.8/3.0	160	37uA	60				X		1.2x1.6*
MIC5398	300mA	300mA	2.5	5.5	3.0/1.2	160	37uA	60				X		1.2x1.6*
MIC5399	300mA	300mA	2.5	5.5	1.8/2.8, 1.8/3.0, 2.8/2.8, 3.3/1.8, 3.3/2.8, 3.3/3.3	160	37uA	60				X		1.2x1.6*

Power Management Selection Guide

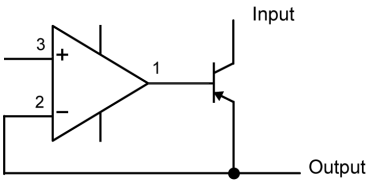
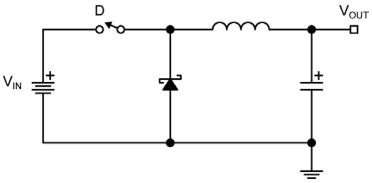
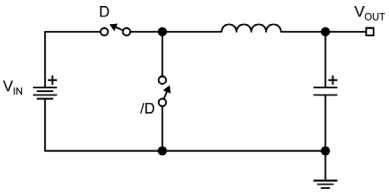
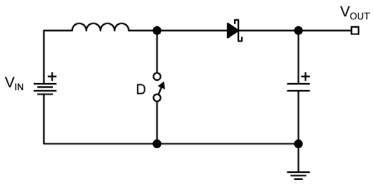
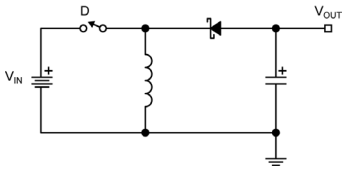
Multi-Channel LDOs

Bold = New P/N	I_{OUT} #1	I_{OUT} #2	I_{OUT} #3	I_{OUT} #4	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{D-OUT} Typ (mV)	I_{GND} (Typ)	PSRR (dB)	PWR Good	V_{OUT} ≤1.2V	µCaP	V_{BIAS} Reqd	* Reduced Height Package Package
MIC5385	150mA	150mA	150mA		2.5	5.5	3.3/1.8/1.5	180	32µA/LDO	70			X		2x2*
MIC5387	150mA	150mA	150mA		2.5	5.5	1.8/2.8/1.8, 1.8/2.8/2.8, 3.3/1.8/1.2, 3.3/1.8/1.5	180	32µA/LDO	70			X		1.6x1.6*
MIC2215	250mA	250mA	250mA		2.25	5.5	2.8/2.8/2.8, 3.0/2.8/2.8, 3.0/3.0/2.8, 3.0/3.0/1.8, 3.0/3.0/3.0, Adj/Adj/Adj	100	110µA/LDO	70			X		4x4
MIC5373	200mA	200mA	200mA		1.7	5.5	2.8/1.8/1.2	170	32µA/LDO	55	X	X	X	X	2.5x2.5*
MIC5383	200mA	200mA	200mA		1.7	5.5	2.8/1.8/1.2	170	32µA/LDO	55	X	X	X	X	2.5x2.5*
MIC5374	200mA	200mA	200mA	1mA	1.7	5.5	3.3/2.5/1.8/1.0	170	42µA/LDO	55	X	X	X	X	2.5x2.5*
MIC5384	200mA	200mA	200mA	1mA	1.7	5.5	2.8/1.8/1.2/1.2	170	42µA/LDO	55	X	X	X	X	2.5x2.5*

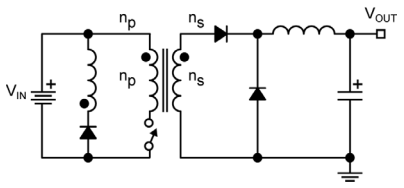
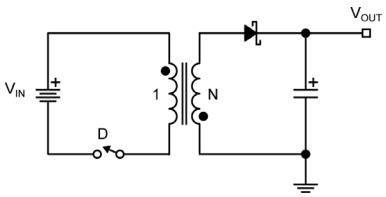
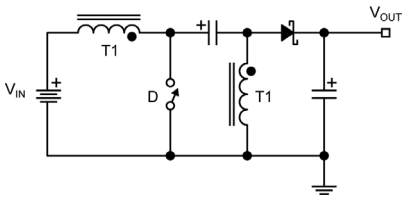
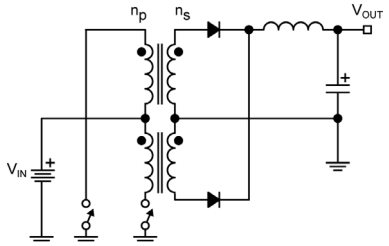
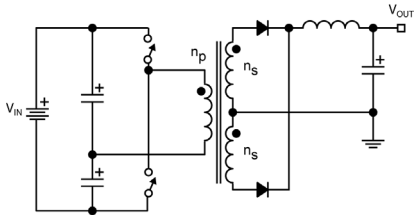
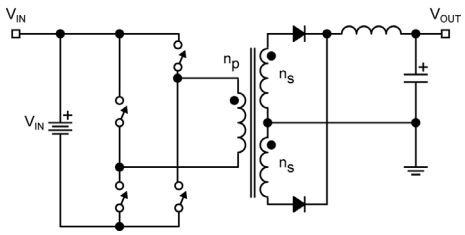
LDO Controllers

Bold = New P/N	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	I_{GND} Typ (mA)	V_{D-OUT} Typ (mV)	Tol (Typ) %	PWR Good	V_{OUT} ≤1.2V	µCap	Internal Charge Pump	External N-Ch MOSFET	V_{REF} (V)	Comments	Package
MIC5156	Adj	3.0	36.0	3.3, 5.0, Adj	2.7	Very Low	±1	X				X	1.235		PDIP-8, SOIC-8
MIC5157	Adj	3.0	36.0	3.3, 5.0, 12	4.5	Very Low	±1	X			X	X	1.235		PDIP-14, SOIC-14
MIC5158	Adj	3.0	36.0	5.0, Adj	4.5	Very Low	±1	X			X	X	1.235		PDIP-14, SOIC-14
MIC5159	Adj	1.65	5.5	1.8, 3.0, Adj	10	Very Low	±1			X		X	1.235		SOT23-6
MIC5190	Adj	0.9	5.5	Adj down to 0.5V	15	<25mV	±1		X	X		X	0.5	>40dB PSRR @ 500KHz	MSOP-10, 3x3
MIC5191	Adj	1.0	5.5	Adj down to 1.0V	15	<25mV	±1		X	X		X	1.0	>40dB PSRR @ 500KHz	MSOP-10, 3x3

Voltage Regulator DC-to-DC Topologies

	Pros	Cons
Linear Regulator 	Only Steps Down ($V_{OUT} < V_{IN}$) – Inexpensive – Very Small – Low Noise/EMI – Ideal for: – 3.3V to 2.5V – 2.5V to 1.8V – 1.8V to 1.2V	Inefficient at high input-to-output voltage differential $Eff = V_{OUT}/V_{IN}$ Note: If a linear regulator gets too hot, use a buck switching regulator instead or the new HELDO® MIC38300.
Buck Regulator 	Only Steps Down ($V_{OUT} < V_{IN}$) – Lowest Peak Current – Only One Switch Voltage Drop – Low-Ripple Current In – Output-Filter Capacitor – Simple Inductor – Low Switch-Stress Voltage Eff ≈ +85%	High-Side Switch $I_{SW}\ (Avg) \approx I_{OUT}$ $DC \approx \frac{V_{OUT}}{V_{IN} \times Eff}$
Synchronous Buck Regulator 	(Internal Switch) – Highest Efficiency (+90%) – Highest Efficiency Step Down – Same Pros as Buck – High Output Current (up to 20A)	Two Switches $I_{SW}\ (Avg) \approx I_{OUT}$ $DC \approx \frac{V_{OUT}}{V_{IN} \times Eff}$
Boost 	Only Steps Up ($V_{OUT} > V_{IN}$) – Low Peak Current – Low-Side Switch – Simple Inductor – Low Switch-Stress Voltage Eff ≈ 85%	Output cannot be completely turned off. No short-circuit protection. $I_{SW}\ (Avg) \approx \frac{I_{OUT}}{1 - DC}$ $DC \approx \frac{V_{OUT} - (V_{IN} \times Eff)}{V_{OUT}}$
Inverter/Buck-Boost 	Negative Output Only – Simple Inductor Eff ≈ 85%	High-Side Switch High Peak Currents $I_{SW}\ (Avg) \approx \frac{I_{OUT}}{1 - DC}$ $DC \approx \frac{V_{OUT}}{V_{OUT} + (V_{IN} \times Eff)}$

Voltage Regulator DC-to-DC Topologies

	Pros	Cons
Forward 	Steps Up and Down – Isolated Outputs – Low-Side Switch Low Input/Output Ripple Eff ≈ 90%	$I_{SW}\,(Avg) \approx \frac{n_S}{n_P} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{(Eff \times V_{IN})} \times \frac{n_P}{n_S}$
Flyback Applications 	Steps Up and Down – Isolated Outputs – Multiple Outputs – Negative Output – High Output Voltage – Low-Side Switch Eff ≈ 80%	Transformer instead of inductor High Peak Current High Switch-Stress Voltage $I_{SW}\,(Avg) \approx \frac{I_{OUT}}{1 - DC}$ $DC \approx \frac{V_{OUT}}{V_{OUT} + N \times V_{IN} \times Eff}$
SEPIC 	Steps Up and Down – Low-Side Switch Eff ≈ 80%	High Peak Currents Two inductors or coupled inductor High Switch-Stress Voltage $I_{SW}\,(Avg) \approx \frac{V_{OUT} \times I_{OUT} + I_{OUT}}{V_{OUT} \times Eff}$ $DC \approx \frac{V_{OUT}}{V_{OUT} + (V_{IN} \times Eff)}$
Push-Pull 	Steps Up and Down – Isolated Outputs – Low-Side Switches – Low Input/Output Ripple Eff ≈ 94%	$I_{SW}\,(Avg) \approx \frac{n_S}{n_P} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_P}{n_S}$
Half-Bridge 	Steps Up and Down – Isolated Outputs – Low FET Stress – Low Transformer Leakage Eff ≈ 95%	$I_{SW}\,(Avg) \approx \frac{n_S}{n_P} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_P}{n_S}$
Full-Bridge 	Steps Up and Down – Isolated Outputs – High Power – Low FET Stress Eff ≈ 95%	$I_{SW}\,(Avg) \approx \frac{n_S}{n_P} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_P}{n_S}$

Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synch-ronous	HLL Mode	LowQ® Mode	Skip Mode	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	* = Reduced height package Package
MIC23030	0.4	2.7	5.5	1.0, 1.2, 1.5, 1.8, Adj	0.62	.80*Vin	X	X						±2.5	8.0M		80%	1.6x1.6
MIC23031	0.4	2.7	5.5	1.0, 1.2, 1.5, 1.8, Adj	0.62	.89*Vin	X	X						±2.5	4.0M		89%	1.6x1.6
MIC23050	0.6	2.7	5.5	1.0, 1.2, 1.8, 3.3		.89*Vin	X	X						±2.5	4.0M		89%	2x2
MIC23051	0.6	2.7	5.5	1-1.2, 1-1.8, 1.15-1.4, 0.95-1.25		.89*Vin	X	X					X	±2.5	4.0M		89%	2x2
MIC23150	2.0	2.7	5.5	1.0, 1.2, 1.35, 1.8, 3.3		.80*Vin	X	X					X	±2.5	4.0M		80%	2x2
MIC23153	2.0	2.7	5.5	1.8, Adj	0.62	.89*Vin	X	X				X	X	±2.5	4.0M		80%	2.5x2.5
MIC23155	2.0	2.7	5.5	1.8, Adj	0.62		X	X				X	X	±2.5	3.0M			2.5X2.5
MIC23156	1.5	2.7	5.5	1.0-0.8, Adj		2.4	X	X				X	X	±1.5	3.0M		80%	1.81x1.71 WLCSP, 2.8x2.5
MIC23201	2.0	2.7	5.5	Adj	0.62	3.6	X					X	X	±2.5	2.0M		0.8	3x3
MIC23303	3.0	2.9	5.5	Adj	0.62	3.6	X	X				X	X	±2.5	4.0M		0.8	3x3
MIC23603	6.0	2.9	5.5	Adj	0.62	3.6	X	X				X	X	±2.5	4.0M		0.8	4x5
MIC2245	0.5	2.7	5.5	Adj	1.0	5.5	X		X					±2	4M		100%	3x3
MIC2285	0.5	2.7	5.5	Adj	1.0	5.5	X		X					±2	8.0M		100%	3x3
MIC2285A	0.5	2.7	5.5	Adj	1.0	5.5	X		X					±2	8.0M		100%	3x3*
MIC2205	0.6	2.7	5.5	Adj, 1.58	1.0	5.5	X		X					±2	2.0M		100%	3x3
MIC2206	0.6	2.7	5.5	1.2, 1.8	1.0	5.5	X		X					±2	2.0M		100%	3x3
MIC2203	0.3	2.3	5.5	Adj	0.5	5.5	X				X			±2.5	1.0M		100%	MSOP-10, 3x3
MIC2202	0.6	2.3	5.5	Adj	0.5	Vin	X				X			±2.5	1.6M-2.5M		100%	MSOP-10, 3x3
MIC2204	0.6	2.3	5.5	Adj	1.0	5.5	X				X			±2	2.0M		100%	MSOP-10, 3x3
MIC2224	1.0	2.7	5.5	DAC Controlled		5.5	X								2.0M		100%	3x3
LM2574	0.5	4.0	40	3,3, 5.0, 12, Adj	1.23	.98*Vin								±1	52K		98%	DIP-8
LM2575	1.0	4.0	40	3,3, 5.0, 12, Adj	1.23	.98*Vin								±1	52K		98%	DIP-16,TO220-5, TO263-5,SOP-24
LM2576	3.0	4.0	40	3,3, 5.0, 12, Adj	1.23	.98*Vin								±1	52K		98%	TO220-5, TO263-5
MIC4574	0.5	4.0	24	3,3, 5.0, Adj	1.23	.95*Vin								±3	200K		95%	DIP-8
MIC4575	1.0	4.0	24	3,3, 5.0, Adj	1.23	.95*Vin								±3	200K		95%	TO220-5, TO263-5
MIC4576	3.0	4.0	36	3,3, 5.0, Adj	1.23	.95*Vin								±3	200K		95%	TO220-5, TO263-5
MIC4680	1.3	4.0	34	3.3, 5.0, Adj	1.23	.97*Vin								±1	200K		97%	SOIC-8
MIC4690	1.3	4.0	34	Adj	1.23	.93*Vin								±1	500K		93%	SOIC-8
MIC4681	2.0	4.0	30	Adj	1.25	.95*Vin								±1	400K		95%	SOIC-8
MIC4682	2.0	4.0	34	Adj	1.23	.95*Vin								±1	200K		95%	SOIC-8
MIC4684	2.0	4.0	30	Adj	1.24	.94*Vin								±2	200K		94%	SOIC-8
MIC4685	3.0	4.0	30	Adj	1.24	.94*Vin								±2	200K		94%	SPAK-7
MIC4720	2.0	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M		100%	eMSOP-10, 3x3
MIC4721	1.5	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M		100%	MSOP-10
MIC4722	3.0	2.7	5.5	Adj	1.0	5.5						X	X		2.7M		100%	3x3
MIC4723	3.0	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M		100%	eMSOP-10, 3x3
MIC4724	3.0	3.0	6.0	Adj	1.0	5.5						X	X	±2	2.0M		100%	eMSOP-10
MIC2177	2.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X			±3	200K		100%	WSOIC-20
MIC2178	2.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X	X		±3	200K		100%	WSOIC-20
MIC2179	1.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X	X		±3	200K		100%	SSOP-20
MIC2267	2.0	3.0	5.5	Adj	1.0	5.5	X					X	X	±2	400K-1.5M		100%	3x3

Power Management Selection Guide

Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synch-ronous	HLL Mode	LowQ® Mode	Skip Mode	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	* = Reduced height package Package
MIC2207	3.0	2.7	5.5	Adj	1.0	5.5	X					X	X	±2	2.0M		100%	3x3
MIC2208	3.0	2.7	5.5	Adj	1.0	5.5	X					X		±1	1.0M		100%	3x3
MIC22200**	2.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	800K-1.2M		100%	3x3
MIC22205	2.0	2.9	5.5	Adj	0.7	5.5	X					X	X	±2	300K-4M		100%	3x3
MIC22400**	4.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	800K-4M		100%	eTSSOP-20, 3x4
MIC22405	4.0	2.9	5.5	Adj	0.7	5.5	X					X	X	±1	300K-4M		100%	3x4
MIC22600**	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	1.0M		100%	eTSSOP-24, 4x4
MIC22601**	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	4.0M		100%	4x4
MIC22602**	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M		100%	4x4
MIC22700**	7.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M		100%	4x4
MIC22705	7.0	2.9	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M		100%	4x4
MIC22950	10	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	400K-2M		100%	5x5
MIC24051	6.0	4.5	19	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC24052	6.0	4.5	19	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC24053	9.0	4.5	19	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC24054	9.0	4.5	19	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC24055	12.0	4.5	19	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC24056	12.0	4.5	19	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC26400	5.0	4.5	26	Adj	0.8	5.5	X						X	±1	300K	X	87%	5x6
MIC26600	7.0	4.5	26	Adj	0.8	5.5	X						X	±1	300K	X	87%	5x6
MIC26950	12	4.5	26	Adj	0.8	5.5	X						X	±1	300K	X	87%	5x6
MIC26601	6.0	4.5	28	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC26901	9.0	4.5	28	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC261201	12	4.5	28	Adj	0.8	5.5	X					X	X	±1	600K		82%	5x6
MIC26603	6.0	4.5	28	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC26903	9.0	4.5	28	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC261203	12	4.5	28	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	5x6
MIC27600	7.0	4.5	36	Adj	0.8	5.5	X						X	±1	300K	X	87%	5x6
MIC28500	4.0	30	75	Adj	0.8	5.5	X						X	±1	100-500K	X	82%	5x6
MIC28510	4.0	4.5	75	Adj	0.8	5.5	X						X	±1	100-500K	X	80%	5x6
MIC26603-ZA	6.0	4.5	28	Adj	0.6	5.5	X					X	X	±1	600K		82%	5x6
MIC26903-ZA	9.0	4.5	28	Adj	0.6	5.5	X					X	X	±1	600K		82%	5x6
MIC23163	2.0	2.7	5.5	Adj	0.7	3.8	X	X				X	X	±2.5	4.0M		100%	2x2*
MIC23164	2.0	2.7	5.5	Adj	0.7	3.8	X	X				X	X	±2.5	4.0M		100%	2x2*
MIC261203-ZA	12.0	4.5	28	Adj	0.6	5.5	X					X	X	±1	600K		82%	5x6
MIC24085	3.0	4.5	18	Adj or Fixed	0.9	5.5	X			X		X	X	±1.5	1000k		97%	3x3
MIC4930	3.0	2.7	5.5	Adj	0.625		X					X	X	±1	3.3M			3x4
MIC4950	5.0	2.7	5.5	Adj	0.625		X					X	X	±1	3.3M			3x4, SOIC-8
MIC38150	1.5	3.0	5.5	Adj	1.0	Vin-.85	X							±2.5	~2.0M			4x6
MIC38300	3.0	3.0	5.5	Adj	1.0	Vin-.85	X							±2.5	~2.0M			4x6

** Not recommended for new designs

Power Management Selection Guide

Step-Down Switching Regulators (External Switches)

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synch-ronous	HLL Mode	LowQ® Mode	Skip Mode	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	Package
MIC2101	4.5	38	Adj	0.8		X	X				X	X	±1	600K		85%	3x3
MIC2102	4.5	38	Adj	0.8		X					X	X	±1	600K		85%	3x3
MIC2103	4.5	75	Adj	0.8		X	X				X	X	±1	600K		85%	3x3
MIC2104	4.5	75	Adj	0.8		X					X	X	±1	600K		85%	3x3
MIC2124	3.0	18	Adj	0.8	5.1	X						X	±1	300K	X	93%	MSOP-10
MIC2130-1	8.0	40	Adj	0.7		X					X	X	±2	150K		92%	TSSOP-16, 4x4
MIC2130-4	8.0	40	Adj	0.7		X					X	X	±2	400K		80%	TSSOP-16, 4x4
MIC2131-1	8.0	40	Adj	0.7		X					X	X	±2	150K		92%	TSSOP-16, 4x4
MIC2131-4	8.0	40	Adj	0.7		X					X	X	±2	400K		80%	TSSOP-16, 4x4
MIC2164	3.0	28	Adj	0.8	5.5	X						X	±1	300K	X	87%	MSOP-10
MIC2164-2	3.0	28	Adj	0.8	5.5	X						X	±1	600K	X	74%	MSOP-10
MIC2164-3	3.0	28	Adj	0.8	5.5	X						X	±1	1.0M	X	66%	MSOP-10
MIC2164C	3.0	28	Adj	0.8	5.5	X						X	±3	270K	X	87%	MSOP-10
MIC2165	4.5	28	Adj	0.8	5.5	X	X				X	X	±1	600K		82%	eMSOP-10
MIC2166	4.5	28	Adj	0.8	5.5	X					X	X	±1	600K		82%	eMSOP-10
MIC2174-1	3.0	40	Adj	0.8	5.5	X						X	±1	300K	X	87%	MSOP-10
MIC2174C-1	3.0	40	Adj	0.8	5.5	X						X	±3	270K	X	87%	MSOP-10
MIC2176-1	4.5	75	Adj	0.8	-	X						X	±1	100K	X	96%	MSOP-10
MIC2176-2	4.5	75	Adj	0.8	-	X						X	±1	200K	X	93%	MSOP-10
MIC2176-3	4.5	75	Adj	0.8	-	X						X	±1	300K	X	89%	MSOP-10
MIC2159	3.0	14.5	Adj	0.8	.92*Vin	X						X	±1	400K		92%	eMSOP-10
MIC2168	3.0	14.5	Adj	0.8	.92*Vin	X						X	±1	1.0M		90%	MSOP-10
MIC2168A	3.0	14.5	Adj	0.8	.90*Vin	X						X	±1	1.0M		90%	MSOP-10
MIC2169	3.0	14.5	Adj	0.8	.90*Vin	X						X	±1	500K		92%	MSOP-10
MIC2169A	3.0	14.5	Adj	0.8	.92*Vin	X						X	±1	500K		92%	MSOP-10
MIC2169B	3.0	14.5	Adj	0.8	.92*Vin	X						X	±1	500K		92%	eMSOP-10, MSOP-10
MIC2182	4.5	32	3.3, 5.0, Adj	1.245	6.0	X			X	X		X	±1	300K		86%	SOP-16, SSOP-16
MIC2183	2.9	14	Adj	1.245	12	X				X		X	±1	400K		100%	SOP-16, QSOP-16
MIC2184	2.9	14	Adj	1.245	12	X				X		X	±1	400K		100%	SOP-16, QSOP-16
MIC2193	2.9	14	Adj	1.245		X							±1	400K		100%	SOIC-8
MIC2194	2.9	14	Adj	1.245									±1	400K		100%	SOIC-8
MIC2198	4.5	32	Adj	0.8	6.0	X							±1	500K		76%	4x4
MIC2199	4.5	32	Adj	0.8	6.0	X							±1	300K		85%	4x4
MIC2111	3.1	5.5	Adj	0.6	12.8	X			X		X	X	±1	200k to 2M	X		3x3*

Multiple Output - Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	# of Outputs	I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synchronous	HLL Mode	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	* = Reduced height package Package
MIC4742	2	2/2	2.9	5.5	Adj/Adj	0.6	5.5						±2	2.0M		100%	3x3, SSOP*
MIC4744	2	2/2	2.9	5.5	Adj/Adj	0.6	5.5						±2	4.0M		100%	3x3, SSOP*
MIC4782	2	2/2	3.0	6.0	Adj/Adj	0.607	6						±3	1.8M		100%	3x3
MIC2238	2	0.8/0.8	2.5	5.5	1.28/1.28, 1.8/1.2, 1.8/1.545, 1.8/1.575, 1.8/3.3, 1.8/1.6, 2.5/1.2, 3.3/1.2, 3.3/3.3, Adj/Adj	0.8	5.5	X			X	X	±2	2.5M		100%	3x3
MIC23250	2	0.4/0.4	2.7	5.5	0.9/1.1, 1.2/1.0, 1.2/1.6, 1.2/1.8, 1.2/2.8, 1.2/3.3, 1.575/1.8, 2.6/3.3, Adj/Adj	0.72	.86*Vin	X	X			X	±2.5	4.0M		86%	2x2*, 2.5x2.5*

Power Management Selection Guide

Multiple Output - Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	# of Outputs	I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synchronous	HLL Mode	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	* = Reduced height package Package
MIC23254	2	0.4/0.4	2.5	5.5	1.0/1.8		.86*Vin	X	X			X	±2.5	4.0M		86%	2x2*
MIC23158	2	'2/2	2.7	5.5	Adj/Adj	0.62	3.3	X	X		X	X	±2.5	3.0M		0.9	3x4
MIC23159	2	'2/2	2.7	5.5	Adj/Adj	0.62	3.3	X	X		X	X	±2.5	3.0M		0.9	3x4
MIC23450	3	'2/2/2	2.7	5.5	Adj/Adj/Adj	0.62	3.3	X	X		X	X	±2.5	3.0M		0.9	5x5
MIC23451	3	1/1/1	2.7	5.5	Adj/Adj/Adj	0.62	3.3	X	X		X	X	±2.5	3.0M		0.9	4x4
MIC24420	2	2.5/2.5	4.5	15	Adj/Adj	0.7	0.7*Vin	X			X	X	±2	1.0M		76%	4x4
MIC24421	2	2.5/2.5	4.5	15	Adj/Adj	0.7	0.7*Vin	X			X	X	±2	500K		90%	4x4
MIC25400	2	2/2	4.5	13.2	Adj/Adj	0.7	9.24	X			X	X	±2	1.0M		70%	4x4
MIC2230	2	0.8/0.8	2.5	5.5	1.28/1.65, 1.8/1.2, 1.8/1.545, 1.8/1.575, 1.8/3.3, 1.8/1.6, 2.5/1.2, 3.3/1.2, 3.3/3.3, Adj/Adj	0.8	5.5	X			X	X	±2	2.5M		100%	3x3

Multiple Phase - Step-Down Switching Regulators (External Switches)

Bold = New P/N	# of Outputs	# of Phases	I_{OUT}	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synchronous	Sync Pin	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	V_{BIAS} Reqd	Duty Cycle Max	Package
MIC2150	2	2	20A/Phase	4.5	14.5	Adj/Adj	0.7	12.03	X		X	X	±1	500K		80%	4x4
MIC2151	2	2	20A/Phase	4.5	14.5	Adj/Adj	0.7	12.03	X		X	X	±1	300K		83%	4x4
MIC2155	1	2	25A/Phase	4.5	14.5	Adj/Adj	0.7	3.6	X	X	X	X	±1	500K		80%	5x5
MIC2156	1	2	25A/Phase	4.5	14.5	Adj/Adj	0.7	3.6	X	X	X	X	±1	300K		80%	5x5

Step-Up Switching Regulators (Internal Switches)

Bold = New P/N	Peak SW Typ (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} Min (V)	V_{OUT} Max (V)	Synchronous	Int Diode	Soft Start	Tol (Typ) %	Freq (Hz)	OVP	Dithered	* = Reduced height package Package
MIC2141	1.00	2.5	14	2.8	22				±1	330K			SOT23-5
MIC2142	0.10	2.2	16		22				±2	330K			SOT23-5
MIC2145	0.90	2.4	16		16	X		X	±2	450K			MSOP-8, 3x3
MIC2171	4.00	3.0	40	3.6	65				±2	100K			TO220, TO263
MIC2172	2.00	3.0	40	3.6	65				±2	100K			DIP-8, SOIC-8
MIC2250	2.00	2.5	5.5	3.0	32			X	±3	Var		X	SOT23-5, 2x2
MIC2251	2.00	2.5	5.5	3.0	37			X	±3	Var		X	SOT23-5, 2x2
MIC2253	3.50	2.5	10	3.0	30			X	±3	1.0M	X		3x3
MIC2288	1.20	2.5	10	3.6	34				±1	1.2M	X		SOT23-5, 2x2
MIC2290	0.75	2.5	10	3.0	34		X		±1	1.2M	X		2x2
MIC2295	1.70	2.5	10	3.0	34				±1	1.2M	X		SOT23-5, 2x2
MIC2296	1.70	2.5	10	3.0	34				±1	600K	X		SOT23-5, 2x2
MIC2570	1.10	1.3	15	2.85	36				±5.5	20K			SOIC-8
MIC2571	1.10	0.9	15	2.85	36				±5.5	20K			MSOP-8
MIC2601	1.70	4.5	20	5.0	40			X	±2	1.2M	X		2x2
MIC2602	1.70	4.5	20	5.0	40			X	±2	2.0M	X		2x2
MIC2605	0.80	4.5	20	5.0	40		X	X	±2	1.2M	X		2x2
MIC2606	0.80	4.5	20	5.0	40		X	X	±2	2.0M	X		2x2
MIC2619	0.35	2.8	6.5	2.8	35				±3	1.2M	X		SOT23-6*
MIC3172	1.25	3.0	40	3.6	65				±1.6	100K			SOIC-8, DIP8

Power Management Selection Guide

Step-Up Switching Regulators (External Switches)

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} Min (V)	V_{OUT} Max (V)	Synchronous	Skip Mode	Sync Pin	Soft Start	Tol Typ %	Freq (Hz)	OVP	Dithered	Package
MIC2185	2.9	14			X	X	X	X	±2	400k			SOIC-16, QSOP-16
MIC2186	2.9	14				X	X	X	±1	100/200 /400k			SOIC-16, QSOP-16
MIC2196	2.9	14							±1	400k			SOIC-8

Flyback/Forward Converters/Push-Pull Controllers for Isolated Applications

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Gate Drive (A)	V_{START} (V)	V_{STOP} (V)	Start-Up Current Max (µA)	Duty Cycle (Max)	Topology	Frequency	Package
MIC9130	9.0	180	1.0	9.0			50%	Forward,Flyback	Adj. to 1.5MHz	SOIC-16, QSOP-16
MIC9131	9.0	180	1.0	9.0			75%	Forward,Flyback	Adj. to 1MHz	SOIC-16, QSOP-16
MIC3808	8.3	15	0.5	12.5	8.3	130	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8
MIC3809	4.1	15	0.5	4.3	4.1	130	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8
MIC3838	8.3	15	0.5	12.5	8.3	130	50%	Push-Pull	Adj. to 1MHz	MSOP-10
MIC3839	4.1	15	0.5	4.3	4.1	130	50%	Push-Pull	Adj. to 1MHz	MSOP-10
MIC38C42	15.5	20	0.5	14.5	9.0	200	96%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, MSOP-8, SOIC-8/14
MIC38C43	9.0	20	0.5	8.4	7.6	200	96%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, MSOP-8, SOIC-8/14
MIC38C44	15.5	20	0.5	14.5	9.0	200	50%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, MSOP-8, SOIC-8/14
MIC38C45	9.0	20	0.5	8.4	7.6	200	50%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, MSOP-8, SOIC-8/14
MIC38HC42	15.5	20	1.0	14.5	9.0	200	96%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, SOIC-8/14
MIC38HC43	9.0	20	1.0	8.4	7.6	200	96%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, SOIC-8/14
MIC38HC44	15.5	20	1.0	14.5	9.0	200	50%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, SOIC-8/14
MIC38HC45	9.0	20	1.0	8.4	7.6	200	50%	Forward,Flyback	Adj. to 500kHz	PDIP-8/14, SOIC-8/14
MIC38C42A **	15.5	20	0.5	14.5	9.0	200	96%	Forward,Flyback	Adj. to 500kHz	MSOP-8, SOIC-8
MIC38C43A **	9.0	20	0.5	14.5	9.0	200	96%	Forward,Flyback	Adj. to 500kHz	MSOP-8, SOIC-8
MIC38C44A **	15.5	20	0.5	14.5	9.0	200	50%	Forward,Flyback	Adj. to 500kHz	MSOP-8, SOIC-8
MIC38C45A **	9.0	20	0.5	14.5	9.0	200	50%	Forward,Flyback	Adj. to 500kHz	MSOP-8, SOIC-8

** Recommended for new designs

DC-to-DC Modules

Bold = New P/N	I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	V_{FB} (V)	V_{OUT} Max (V)	Synchronous	HLL Mode	LowQ® Mode	PWR Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	Package
MIC28304-1	3	4.5	70	Adj	0.8	24	X	X		X	X	±1	600K	85%	12x12
MIC28304-2	3	4.5	70	Adj	0.8	24	X			X	X	±1	600K	85%	12x12
MIC45205-1	6	4.5	26	Adj	0.8	5.5	X	X		X	X	±1	200-600K	85%	8x8
MIC45205-2	6	4.5	26	Adj	0.8	5.5	X			X	X	±1	200-600K	85%	8x8
MIC45208-1	10	4.5	26	Adj	0.8	5.5	X	X		X	X	±1	200-600K	85%	10x10
MIC45208-2	10	4.5	26	Adj	0.8	5.5	X			X	X	±1	200-600K	85%	10x10
MIC45212-1	14	4.5	26	Adj	0.8	5.5	X	X		X	X	±1	200-600K	85%	12x12
MIC45212-2	14	4.5	26	Adj	0.8	5.5	X			X	X	±1	200-600K	85%	12x12
MIC33163	1	2.7	5.5	Adj	0.7	5	X	X		X	X	±2.5	4.0M	100%	3x2.5
MIC33164	1	2.7	5.5	Adj	0.7	5	X	X		X	X	±2.5	4.0M	100%	3x2.5
MIC33263	2	2.7	5.5	Adj	0.7	3.8	X	X		X	X	±2.5	4.0M	100%	3x2.5
MIC33264	2	2.7	5.5	Adj	0.7	3.8	X	X		X	X	±2.5	4.0M	100%	3x2.5
MIC33030	0.4	2.7	5.5	1.2, 1.8, Adj	0.62	3.6	X	X				±2.5	8.0M	90%	2.5x2.0
MIC33050	0.6	2.7	5.5	1.0, 1.2, 1.8, 3.3, Adj	0.4	3.3	X	X				±2.5	4.0M	89%	3x3
MIC33153	1.2	2.7	5.5	1.2, Adj	0.62	3.6	X	X		X	X	±2.5	4.0M	80%	3x3.5
MIC3385	0.6	2.7	5.5	1.5, Adj	1	5.5	X		X			±1	8.0M	100%	3x3.5

Power Management Selection Guide

Multi-Output PMICs

Bold = New P/N	I_{OUT} DC/DC (mA)	I_{OUT} LDO (mA)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT}** DC/DC	V_{OUT}** LDO	HLL Mode	LowQ® Mode	Comments	* = Reduced height package Package
MIC2225	600	300	2.7	5.5	down to 1.0V	down to 0.8V			Digital Power Management IC, 2MHz DC/DC converter with LDO and independent enable, >95% efficiency.	2x2*
MIC23060	600	300	2.7	5.5	1.8V/3.3V	1.2V	X		4MHz 600mA DC/DC Regulator and 300mA LDO Regulator with flexible sequencing feature. DC/DC features HyperLight Load®. >95% efficiency.	2.5x2.5*
MIC2800	600	300/300	2.7	5.5	1.8V/3.3V	LDO1: 0.8V to (VDC/DC-VDD), LDO2: 0.8V to 3.6V		X	Digital Power Management IC, 2MHz DC/DC converter with two Linear Regulators. LDO1 is directly connected to the output of the DC/DC converter. POR/Power Good pin and LOWQ mode.	3x3
MIC2807	600	200/30	2.7	5.5	DAC cntrl, 0.3V to Vin	2.85V/2.85V			RF Power Management IC, 600mA DC/DC converter with DAC controlled output to power amplifier. 200mA RF LDO output current (provides bias voltage supply for PA), 30mA PA LDO (provides highly accurate PA reference voltage).	2.5x2.8
MIC2808	600	200/30	2.7	5.5	DAC cntrl, 0.3V to Vin	2.85V/2.85V			RF Power Management IC, 600mA DC/DC converter with DAC controlled output to power amplifier. 200mA RF LDO output. Reduced package size and LDO dropout compared to MIC2807.	2x2.5*
MIC2810	600	300/300	2.7	5.5	1.0V/2.0V	0.8V to 3.6V		X	Digital Power Management IC, 2MHz with two Linear Regulators. LDO1 has a separate VIN pin and can either post-regulate the DC/DC converter or be connect directly to the main input supply. POR/Power Good pin.	3x3
MIC2811	600	300/300	2.7	5.5	1.0V/2.0V	LDO1,2: 0.8V to 3.6V, LDO3: 1.0V to 3.9V			Digital Power Management IC, 2MHz DC/DC converter with 3 LDOs. Bypass cap for improved noise performance on LDO1 and LDO2. LDO1 and LDO2 have separate VIN pins. Separate enable pins.	3x3
MIC2821	600	300/300/300	2.7	5.5	1.0V/2.0V	LDO1,2: 0.8V to 3.6V, LDO3: 1.0V to 3.9V			Digital Power Management IC, 2MHz DC/DC converter with 3 LDOs. LDO1 and 2 have separate VIN pins. Independent enable for all four regulators.	3x3
MIC2826	500	150/150/150	2.7	5.5	I2C and Dynamic Scaling from 0.8V to 1.8V	I2C and Dynamic Scaling from 0.8V to 3.3V	X		4MHz DC/DC HyperLight Load® converter with 1.8V to DVIN Adj. via I2C & Dynamic Voltage Scaling 3 LDOs. Fast-mode (400kHz) I2C Control for Startup, Enables and Output Voltages. Optional Default Startup Sequence and Voltages. Fault Monitoring Flag (IRQb).	2.5x2.5*
MIC2827	500	150/150	2.7	5.5	I2C and Dynamic Scaling from 0.8V to 1.8V	I2C and Dynamic Scaling from 0.8V to 3.3V	X		4MHz DC/DC HyperLight Load® converter with Dynamic Voltage Scaling and 2 LDOs. Fast-mode (400kHz) I2C Control for Startup, Enables and Output Voltages. Optional Default Startup Sequence and Voltages. Fault Monitoring Flag (IRQb).	2.5x2.5
MIC2829	1000/300/ 600/600/ 800/800	11x200	2.7	5.5	DC/DCs: 0.8V to 1.8V	0.8V to 3.3V			Highly integrated PMIC for 3G/4G wireless data and portable applications. 6 buck regulators, 5 general purpose LDOs, 6 low noise regulators, SIM card level shifter, and PGOOD indicator with adjustable delay.	LGA-76, FBGA-85 (5.5x5.5mm)
MIC7400			2.4	5.5			X		Highly integrated configurable PMIC featuring five 4MHz buck regulators, one 2MHz boost regulator, global PGOOD indicator, 3.4MHz I2C master/slave programmable with EEROM, configurable start-up sequencing, Adjustable POR comparator and delay, standby low power Mode , Fault sense indictors and protection.	4.5x4.5
MIC23099	200/30		0.9	1.6	"Boost: 1.8V to 3.3V, Buck 1V to Vout1"				Single AA/AAA cell step-up/step-down dual output with battery monitoring	2.5x2.5*

** Contact factory for additional voltage output options

Sub-Power Management ICs (Sub-PMIC)

Bold = New P/N	Comments	Package
MIC4555	SIM Card Interface + Level Shifter with 50mA LDO	3x3

Battery Chargers

Bold = New P/N	Charge Cell Type	Charge Voltage	Gate Voltage Accuracy	V_{IN} Min (V)	V_{IN} Max (V)	I_{GND} (Typ)	I_{GND} Shutdown Typ (µA)	V_{D-OUT} +25°C (Typ) (mV)	V_{D-OUT} @ Tmax (mV)	Package
MIC79050	Li-Ion, 1 cell	4.2V	±0.75%	2.5	16	85µA	3.0	380	600	MSOP-8, SOIC-8, SOT223
MIC79110	Li-Ion	4.2V, Adj.	±0.75%	2.5	16	2mA	0.1	375	550	3x3

Power Management Selection Guide

DDR Terminators

Bold = New P/N	Linear	Switching	Max I_{OUT} (A)	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (V)	PWR Good	V_{TT} Accuracy (mV)	External Transistor	Freq	µCaP	Comments	Package
MIC5162	X		±7	1.35	6.0	1/2 of VDDQ		±5	X		X		MSOP-10
MIC5163	X		±7	0.75	6.0	1/2 of VDDQ		±5	X		X	Low Voltage	MSOP-10
MIC5164	X		±7	1.35	6.0	1/2 of VDDQ	X	±5	X		X		MSOP-10
MIC5165	X		±7	0.75	6.0	1/2 of VDDQ	X	±5	X		X	Low Voltage	MSOP-10
MIC5166	X		±3	0.9	3.6	1/2 of VDDQ	X	±40			X	Integrated FETs	3x4
MIC5167		X	±6	2.6	5.5	Adj down to 0.35V	X	±12		1MHz	X	Integrated Sync Buck	4x4

Electroluminescent (EL) Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	V_{OUT} (Vpp)	Operating I_Q (µA)	Frequency	Features	Package
MIC4826	1.8	5.5	160	21	60Hz-1KHz	EL panels up to 3 sq in2	MSOP-8
MIC4827	1.8	5.5	180	21	60Hz-1KHz	EL panels up to 3 sq in2	MSOP-8
MIC4830	1.8	5.5	180	45	60Hz-1KHz	EL panels up to 4 sq in2 Lowest Audible Noise	MSOP-8, 3x3
MIC4832	1.8	5.5	220	45	60Hz-1KHz	EL panels up to 3 sq in2 Lowest Audible Noise	MSOP-8, 3x3
MIC4833	2.3	5.8	220	152	100Hz-1.5KHz	Independent control of two EL elements, up to 4 in2	3x3
MIC4834	2.3	5.8	220	152	100Hz-1.5KHz	For Two EL elements in parallel, up to 3 in2	MSOP-10, 3x3

LED Backlight Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	I_{LIM} Typ (A)	I_Q Typ	Int Diode	V_{FB} (V)	Tol (Typ) %	V_{OUT} Max (V)	Duty Cycle Max	Freq (Hz)	Comments	Package
MIC2282	0.9	15	1.100	120µA		0.220	±10	36	67%	20K	Single AA Boost	MSOP-8
MIC2287	2.5	10	0.750	2.5mA		0.095	±5	34	90%	1.2M		TSOT-23-5, 2x2
MIC2287C	2.5	10	0.750	2.5mA		0.095	±10	34	90%	1.2M		TSOT-23-5, 2x2
MIC2289	2.5	10	0.750	2.5mA	X	0.095	±5	34	90%	1.2M		TSOT-23-6, 2x2
MIC2289C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.2M		TSOT-23-6
MIC2291	2.5	10	1.20	2.8mA		0.095	±5	34	90%	1.2M	Photo Flash Mode	TSOT-23-5, 2x2
MIC2292	2.5	10	0.750	2.5mA	X	0.095	±5	34	90%	1.6M		2x2
MIC2292C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.6M		2x2
MIC2293	2.5	10	0.750	2.5mA	X	0.095	±5	34	90%	2.0M		2x2
MIC2293C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	2.0M		2x2
MIC2297	2.5	10	1.70	4.0mA		0.200	±5	40	93%	600K	Current Mode	2.5x2.5
MIC2298	2.5	10	4.75	15mA		0.200	±8	30	90%	1.0M	Photo Flash & Torch Mode	3x3
MIC2299	2.5	10	4.75	15mA		0.200	±8	30	90%	2.0M	10W Flash driver and Torch Mode.	3x3
MIC3223	4.5	20	3.50	2.1mA		0.200	±5	37	90%	1.0M	Boost High Power LED Driver, Integrated FET and PWM Dimming.	eTSSOP-16
MIC3263	6.0	40	2.40	6.5mA		2.36		40	90%	400K-1.8M	Six-Channel WLED Driver for Backlighting Applications with Flicker-free Dimming. Internal & Ext dimming modes	4x4
MIC3287	2.8	6.5	0.350	2.1mA		0.250	±7.5	36	90%	1.2M		TSOT-23-5, TSOT-23-6, 2x2
MIC3289	2.5	6.5	0.750	1.4mA	X	0.250	±5	24	90%	1.2M	Dig 1-Wire	TSOT-23-6, 2x2
MIC3291	2.5	6.5	0.750	2.0mA	X	0.250	±5	25	90%	1.2M	Dig 1-Wire	TSOT-23-6, 2x2

Power Management Selection Guide

High-Brightness LED Drivers

Bold = New P/N	Type Buck	Type Boost	V_{IN} Min (V)	V_{IN} Max (V)	# of White LEDs	Dimming	I_Q (mA)	Switching Frequency	Switching MOSFET	Dithered	I_{LED}	V_{FB} (mV)	Package
MIC3201	X		6.0	20	Up to 4	PWM to 20kHz	1.2	Hyst to 1.0MHz	Internal 1A		±5%	200	eSOIC-8
MIC3202	X		6.0	37	Up to 8	PWM to 20kHz	1.2	Hyst to 1.0MHz	Internal 1A	X	±5%	200	eSOIC-8
MIC3202-1	X		6.0	37	Up to 8	PWM to 20kHz	1.2	Hyst to 1.0MHz	Internal 1A		±5%	200	eSOIC-8
MIC3203	X		4.5	42	Up to 9	PWM to 20kHz	1.0	Hyst to 1.5MHz	External	X	±5%	200	SOIC-8
MIC3203-1	X		4.5	42	Up to 9	PWM to 20kHz	1.0	Hyst to 1.5MHz	External		±5%	200	SOIC-8
MAQ3203 *	X		4.5	42	Up to 9	PWM to 20kHz	1.0	Hyst to 1.5MHz	External	X	±5%	200	SOIC-8
MIC3205	X		4.5	40	Up to 9	PWM to 20kHz	1.3	Hyst to 1MHz	External		±5%	200	3x3
MIC3230		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	100kHz-1MHz	External		±3%	250	eTSSOP-16, 3x3
MIC3231		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	100kHz-1MHz	External	X	±3%	250	eTSSOP-16, 3x3
MIC3232		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	400kHz	External		±3%	250	MSOP-10

** AEC-Q100 Qualified

Linear LED Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	# of White LEDs	Dimming	I_Q (mA)	LED V_{D-OUT} @ 20mA	I_{LED} Matching	Extra LDOs	V_{D-OUT} (mV)	I_Q LDO (µA)	Comments	* = Reduced height package Package
MIC2841A	3.0	5.5	4 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%				DAM™	2x2*
MIC2842A	3.0	5.5	4 @ 20mA	1-Wire, 48-Steps	1.4	40mV	±1.5%				DAM™	2x2*
MIC2843A	3.0	5.5	6 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%				DAM™	2x2*
MIC2844A	3.0	5.5	6 @ 20mA	1-Wire, 48-Steps	1.4	40mV	±1.5%				DAM™	2x2*
MIC2845A	3.0	5.5	6 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%	2	150	35	DAM™	2.5x2.5*
MIC2846A	3.0	5.5	6 @ 20mA	1-Wire, 48-Steps	1.4	40mV	±1.5%	2	150	35	DAM™	2.5x2.5*
MIC2860-2D	3.0	5.5	2 @ 30.2mA	1-Wire, 32-Steps	0.7	52mV @ 30.2mA	±0.5%					SC70-6, SOT-23-6*
MIC2860-2P	3.0	5.5	2 @ 30.2mA	PWM down to 250Hz	0.7	52mV @ 30.2mA	±0.5%					SC70-6, SOT-23-6*
MIC4811	3.0	5.5	6 @ 50mA	PWM (200Hz-500kHz)	1.7	100mV @ 50mA	±1.0%				DAM™	MSOP-10
MIC4812	3.0	5.5	6 @ 100mA	PWM (200Hz-500kHz)	3.2	190mV @ 100mA	±1.0%				DAM™	eMSOP-10
MIC4801	3.0	5.5	1 @ 600mA	PWM (200Hz-500kHz)	2.2	130mV @ 400mA					±1% Accuracy	SOIC-8
MIC4802	3.0	5.5	1 @ 800mA	PWM (200Hz-500kHz)	4.1	280mV @ 800mA					±1% Accuracy	eSOIC-8

Display Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Sink Current (mA)	Segments	LEDs	Description	Package
MIC5400	4.75	5.5	30		2 banks of 8	Driving Large LED Array in Signs	SOIC-28
MM5450	4.75	11.0	15	34		7-Segment LED Driver with EN	PDIP-40, PLCC-44
MM5451	4.75	11.0	15	35		7-Segment LED Driver	PDIP-40, PLCC-44

Camera Flash LED Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	# of LED Channels	Max LED Current (mA)	Standby Current (mA)	Switching Freq (MHz)	Peak Effiency (%)	Current Accuracy	Interface	* = Reduced height package Package
MIC2870	2.7	5.0	2	1500	0.90	2	94	±10%	I2C	2x2*
MIC2871	2.7	5.5	1	1200	0.23	2	94	±5%	Single-Wire	3x2*
MIC2873	2.7	5.5	1	1200	0.17	2	92	±8%	Single-Wire	1.3x1.3 WLCSP

Power Management Selection Guide

Half-Bridge MOSFET Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Boot-strap Max (V)	Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	t_r/t_f	t_{pd} (input rise/fall)	Comments	* = Reduced height package Package
MIC4100	9.0	16	100V	Dual	Non-Inverting (CMOS)	2A/2A	2.5Ω/2.5Ω	10ns into 1000pF	27ns into 1000pF	SOIC-8	Hysteresis on input pins for noisy or slow signals
MIC4101	9.0	16	100V	Dual	Non-Inverting (TTL)	2A/2A	2.5Ω/2.5Ω	10ns into 1000pF	27ns into 1000pF	SOIC-8	Level shift between VIN signal and VDD supply voltage
MIC4102	9.0	16	100V	Dual	Non-Inverting (TTL)	3A/2A	1.5Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	Embedded Anti-Shoot through Protection, PWM Input
MIC4103	9.0	16	100V	Dual	Non-Inverting (CMOS)	3A/2A	1.25Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	
MIC4104	9.0	16	100V	Dual	Non-Inverting (TTL)	3A/2A	1.25Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	
MIC4604	5.5	16	85V	Dual	Non-Inverting (TTL)	1A/1A	6Ω/4Ω	20ns/20ns into 1000pF	35ns into 1000pF	SOIC-8, 2.5x2.5*	Widest programmable Gate Drive from 5.5V to 16V, Allows longer run time in battery operate tools, Internal 85V boots strap diode
MIC4605	5.5	16	85V	Dual	Non-Inverting (TTL), PWM	1A/1A	6Ω/4Ω	20ns/20ns into 1000pF	35ns into 1000pF	SOIC-8, 2.5x2.5*	Widest programmable Gate Drive from 5.5V to 16V, Allows longer run time in battery operate tools, Internal 85V boots strap diode

Low-Side MOSFET Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Type	Logic	Sink/ Source Peak Output	Sink/ Source Output Impedance	t_r/t_f	t_{pd} (input rise/fall)	Comments	* = Reduced height package Package
MIC4414	4.5	18	Single	Non-Inverting	1.5A	3.5Ω/3.5Ω	12ns/12ns into 1000pF	12ns into 1000pF	1.2x1.2*	
MIC4415	4.5	18	Single	Inverting	1.5A	3.5Ω/3.5Ω	12ns/12ns into 1000pF	12ns into 1000pF	1.2x1.2*	
MIC4416	4.5	18	Single	Non-Inverting	1.2A	7.6Ω/7.8Ω	24ns/28ns into 1,000pF	42ns into 1000pF	SOT-143	
MIC4417	4.5	18	Single	Inverting	1.2A	7.6Ω/7.8Ω	24ns/28ns into 1,000pF	37ns into 1000pF	SOT-143	
MIC4467	4.5	18	Quad	Non-inverting NAND Inputs	1.2A	5Ω	14ns/13ns into 470pF	35ns/55ns into 470pF	WSOIC-16, PDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V
MIC4468	4.5	18	Quad	Non-inverting AND Inputs	1.2A	5Ω	14ns/13ns into 470pF	35ns/55ns into 470pF	WSOIC-16, PDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V
MIC4469	4.5	18	Quad	Inverting + Non-Inverting AND Inputs	1.2A	5Ω	14ns/13ns into 470pF	35ns/55ns into 470pF	WSOIC-16, PDIP-14, CerDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V. SMD (Military) 5962-9459403MCA
MIC4126	4.5	20	Dual	Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8, 3x3	MIC4426 upgrade; Higher input voltage; Input pulse down to 50ns
MIC4127	4.5	20	Dual	Non-Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8, 3x3	MIC4427 upgrade; Higher input voltage; Input pulse down to 50ns
MIC4128	4.5	20	Dual	Inverting + Non-Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8, 3x3	MIC4428 upgrade; Higher input voltage; Input pulse down to 50ns
MIC4426	4.5	18	Dual	Inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8, CerDIP-8	MIC4126 is recommended upgrade. SMD (Military) 5962-8850307PA
MIC4427	4.5	18	Dual	Non-inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8, CerDIP-8	MIC4127 is recommended upgrade. SMD (Military) 5962-8850309PA
MIC4428	4.5	18	Dual	Inverting + Non-Inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8, CerDIP-8	MIC4128 is recommended upgrade. SMD (Military) 5962-8850309PA
MIC4123	4.5	20	Dual	Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4423 upgrade; Higher input voltage; Input pulse down to 50ns
MIC4124	4.5	20	Dual	Non-Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4424 upgrade; Higher input voltage; Input pulse down to 50ns

Low-Side MOSFET Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	t_r/t_f	t_{pd} (input rise/fall)	Comments	* = Reduced height package Package
MIC4125	4.5	20	Dual	Inverting + Non-Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4425 upgrade; Higher input voltage; Input pulse down to 50ns
MAQ4123	4.5	20	Dual	Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	40ns/60ns into 1,800pF	eSOIC-8	Automotive Qualified, input pulse down to 50ns
MAQ4124	4.5	20	Dual	Non-Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	40ns/60ns into 1,800pF	eSOIC-8	Automotive Qualified, input pulse down to 50ns
MAQ4125	4.5	20	Dual	Inverting + Non-Inverting	3A	2.2Ω	11ns/11ns into 1,800pF	40ns/60ns into 1,800pF	eSOIC-8	Automotive Qualified, input pulse down to 50ns
MIC4423	4.5	18	Dual	Inverting	3A	2.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP-8	
MIC4424	4.5	18	Dual	Non-inverting	3A	2.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP-8, CerDIP-8	SMD (Military) 5962-8850305PA
MIC4425	4.5	18	Dual	Inverting + Non-Inverting	3A	2.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP-8	
MIC4223	4.5	18	Dual	Inverting	4A	30Ω/16Ω	15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable
MIC4224	4.5	18	Dual	Non-Inverting	4A	30Ω/16Ω	15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable
MIC4225	4.5	18	Dual	Inverting + Non-Inverting	4A	30Ω/16Ω	15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable
MIC4120	4.5	20	Single	Non-Inverting	6A	1.4Ω/1.5Ω	12ns/13ns into 2200pF	45ns/50ns into 2,200pF	eSOIC-8, 3x3	MIC4420 upgrade; Recommended for new designs; Higher input voltage; Input pulse down to 50ns
MIC4420	4.5	18	Single	Non-Inverting	6A	1.7Ω/1.5Ω	12ns/13ns into 2500pF	18ns/48ns into 2500pF	SOIC-8, MSOP-8, PDIP-8, TO-220-5, CerDIP-8	SMD (Military) 5962-8877003PA
MIC4129	4.5	20	Single	Inverting	6A	1.4Ω/1.5Ω	12ns/13ns into 2200pF	45ns/50ns into 2,200pF	eSOIC-8, 3x3	MIC4429 upgrade; Recommended for new designs; Higher input voltage; Input pulse down to 50ns
MIC4429	4.5	18	Single	Inverting	6A	1.7Ω/1.5Ω	12ns/13ns into 2500pF	18ns/48ns into 2500pF	SOIC-8, MSOP-8, PDIP-8, TO-220-5	
MIC44F18	4.5	13.2	Single	Non-Inverting (TTL), EN=0; O/P Low	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	High Speed; small, thermally efficient package with enable
MIC44F19	4.5	13.2	Single	Inverting (TTL), EN=0; O/P High	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	P-Ch Driver, High Speed; small, thermally efficient package with enable
MIC44F20	4.5	13.2	Single	Inverting (TTL) EN=0, O/P Low	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	High Speed; small, thermally efficient package with enable
MIC4421	4.5	18	Single	Inverting	9A	0.6Ω/0.8Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	MIC4421A is recommended upgrade. Latch-Up Protected; Input to –5V
MIC4421A	4.5	18	Single	Inverting	9A	0.6Ω/0.8Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	Recommended upgrade to MIC4421.50ns minimum input pulse width
MIC4422	4.5	18	Single	Non-Inverting	9A	0.6Ω/0.8Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	MIC4422A is recommended upgrade. Latch-Up Protected; Input to –5V
MIC4422A	4.5	18	Single	Non-Inverting	9A	0.6Ω/0.8Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	Recommended upgrade to MIC4422. 50ns minimum input pulse width
MIC4451	4.5	18	Single	Inverting	12A	0.6Ω/0.8Ω	20ns/24ns into 15nF	25ns/40ns into 15nF	PDIP-8, SOIC-8, TO-220-5	Latch-up Protected; Input to –5V.
MIC4452	4.5	18	Single	Non-Inverting	12A	0.6Ω/0.8Ω	20ns/24ns into 15nF	25ns/40ns into 15nF	PDIP-8, SOIC-8, TO-220-5	Latch-up Protected; Input to –5V.
MIC5020	11	50	Single	Non-Inverting			500ns into 1,500pF	400ns/900ns into 1,500pF	SOIC-8	Complementary Driver, Current Sense (50mV nominal)

Power Management Selection Guide

High-Side MOSFET Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	t_r/t_f	Comments	Package
MIC5021	12	36	Single	Non-Inverting			550ns into 2000pF	SOIC-8, PDIP-8	High Speed Driver, Current Sense (50mV nominal)
MIC5060	2.75	30	Single	Non-Inverting			90µs into 1,000pF	3x3	Rev Bat & Load Dump Protected

High or Low-Side MOSFET Drivers

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Type	Logic	t_r/t_f	Comments	* = Reduced height package Package
MIC5011	4.75	32	Single	Non-Inverting	60µs into 1,000pF	SOIC-8, PDIP-8	Ext Charge Pump Caps (opt).
MIC5013	7.0	32	Single	Non-Inverting	60µs into 1,000pF	SOIC-8, PDIP-8	Current Sense, Fault.
MIC5014	2.75	30	Single	Non-Inverting	90µs into 1,000pF	SOIC-8, PDIP-8	Rev Bat & Load Dump Protected
MIC5015	2.75	30	Single	Inverting	90µs into 1,000pF	SOIC-8, PDIP-8	
MIC5018	2.7	9.0	Single	Non-Inverting	2.1ms into 3,000pF	SOT143	
MIC5019	2.7	9.0	Single	Non-Inverting	1.34ms into 3,000pF	1.2x1.2*	
MIC5021	12	36	Single	Non-Inverting	400ns into 1,500pF	SOIC-8, PDIP-8	Current Sense (50mV Nominal)
MIC5060	2.75	30.0	Single	Non-Inverting	90µs into 1,000pF	3x3	

Latched Drivers

Bold = New P/N	Input	# of Channels	Max Output Voltage	Nominal Sink Current (mA)	Nominal Source Current (mA)	Thermal, UVLO, Overcurrent Protection	Package
MIC5800	Parallel	4	50V	400			SOIC-14, PDIP-14
MIC5801	Parallel	8	50V	400			SOIC-24, PDIP-22, PLCC-28, CerDIP-22 *
MIC58P01	Parallel	8	80V	400		X	SOICW-24, PDIP-22, PLCC-28
MIC5821	Serial	8	50V / 35V	400			PDIP-16
MIC5822	Serial	8	80V / 50V	400			PDIP-16
MIC5841	Serial	8	50V / 35V	400			SOIC-18, PDIP-18, PLCC-20
MIC5842	Serial	8	80V / 50V	400			SOIC-18, PDIP-18, PLCC-20
MIC58P42	Serial	8	80V / 50V	400		X	SOIC-18, PDIP-18, PLCC-20
MIC5891	Serial	8	50V		400		SOICW-16, PDIP-16
MIC59P50	Parallel	8	80V	400		X	SOICW-24, PDIP-24, PLCC-28
MIC59P60	Serial	8	80V / 50V	400		X	SOICW-20, PDIP-20, PLCC-20

* SMD (military) 5962-8764001WA

Un-Latched Driver Arrays

Bold = New P/N	Input	# of Channels	Max Output Voltage	Input Signal	Package
MIC2981	Parallel	8	50V	5V-TTL or 5V-to-15V CMOS or PMOS	PDIP-18, WSOIC-18
MIC2982	Parallel	8	50V	5V-TTL or 5V-to-15V CMOS or PMOS	PDIP-18, WSOIC-18

References

Bold = New P/N	Description	V_{IN} Max (V)	Tol (Typ) %	V_{OUT} (V)	Output Current Min	Output Current Max	Noise (µV) rms	Reverse Breakdown Stability	Package
LM4040C	Precision Micropower Shunt	15	±0.5	2.5, 4.096, 5.0	60µA	15mA	35	120ppm	SOT23-3
LM4040D	Precision Micropower Shunt	15	±1.0	2.5, 4.096, 5.0	60µA	15mA	35	120ppm	SOT23-3

Power Management Selection Guide

References

Bold = New P/N	Description	V_{IN} Max (V)	Tol (Typ) %	V_{OUT} (V)	Output Current Min	Output Current Max	Noise (µV) rms	Reverse Breakdown Stability	Package
LM4041C	Precision Micropower Shunt	15	±0.5	1.225, Adj (1.24V-10V)	60µA	12mA	20	120ppm	SOT23-3
LM4041D	Precision Micropower Shunt	15	±1.0	1.225, Adj (1.24V-10V)	60µA	12mA	20	120ppm	SOT23-3
MIC4043	Low-Side Secondary-Side Shunt Regulator, Improved Low Voltage LM431	10	±1.0	Adj	1mA	15mA	-	-	SOT143

Single High-Side Load Switches

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Max SW Current (A)	$R_{DS(ON)}$ @5V (mΩ)	Soft Start (µs)	Load Discharge (Ω)	Enable Logic	V_{EN} (V)	Input Pull-Up Resistor	Reverse Current Blocking	* = Reduced height package Package
MIC94030	2.7	13.5	1.0	750			Low True	1.40		X	SOT143-4
MIC94031	2.7	13.5	1.0	750			Low True	1.40	X	X	SOT143-4
MIC94040	1.7	5.5	3.0	28			High True	1.20			1.2x1.2
MIC94041	1.7	5.5	3.0	28		250	High True	1.20			1.2x1.2
MIC94042	1.7	5.5	3.0	28	100		High True	1.20			1.2x1.2
MIC94043	1.7	5.5	3.0	28		250	High True	1.20			1.2x1.2
MIC94044	1.7	5.5	3.0	28	900		High True	1.20			1.2x1.2
MIC94045	1.7	5.5	3.0	28	900	200	High True	1.20			1.2x1.2
MIC94050	1.8	5.5	1.8	125			Low True	1.20		X	SOT143-4
MIC94051	1.8	5.5	1.8	125			Low True	1.20	X	X	SOT143-4
MIC94052	1.8	5.5	2.0	70			Low True	1.20			SC70-6
MIC94053	1.8	5.5	2.0	70			Low True	1.20	X		SC70-6
MIC94060	1.7	5.5	2.0	77			High True	1.20			SC70-6, 1.2x1.6*
MIC94061	1.7	5.5	2.0	77		200	High True	1.20			SC70-6, 1.2x1.6*
MIC94062	1.7	5.5	2.0	77	800		High True	1.20			SC70-6, 1.2x1.6*
MIC94063	1.7	5.5	2.0	77	800	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94064	1.7	5.5	2.0	77	115		High True	1.20			SC70-6, 1.2x1.6*
MIC94065	1.7	5.5	2.0	77	115	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94070	1.7	5.5	1.2	120			High True	1.20			SC70-6, 1.2x1.6*
MIC94071	1.7	5.5	1.2	120		200	High True	1.20			SC70-6, 1.2x1.6*
MIC94072	1.7	5.5	1.2	120	800		High True	1.20			SC70-6, 1.2x1.6*
MIC94073	1.7	5.5	1.2	120	800	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94080	1.7	5.5	2.0	67			High True	1.25			0.85x0.85*
MIC94081	1.7	5.5	2.0	67		250	High True	1.25			0.85x0.85*
MIC94082	1.7	5.5	2.0	67	800		High True	1.25			0.85x0.85*
MIC94083	1.7	5.5	2.0	67	800	250	High True	1.25			0.85x0.85*
MIC94084	1.7	5.5	2.0	67	120		High True	1.25			0.85x0.85*
MIC94085	1.7	5.5	2.0	67	120	250	High True	1.25			0.85x0.85*
MIC94090	1.7	5.5	1.2	130			High True	1.25			SC70-6, 1.2x1.2*
MIC94091	1.7	5.5	1.2	130		250	High True	1.25			SC70-6, 1.2x1.2*
MIC94092	1.7	5.5	1.2	130	790		High True	1.25			SC70-6, 1.2x1.2*
MIC94093	1.7	5.5	1.2	130	790	250	High True	1.25			SC70-6, 1.2x1.2*
MIC94094	1.7	5.5	1.2	130	120		High True	1.25			SC70-6, 1.2x1.2*
MIC94095	1.7	5.5	1.2	130	120	250	High True	1.25			SC70-6, 1.2x1.2*
MIC94161	1.7	5.5	3.0	15.5	2700		High True	1.50		X	1.5 x 1 WLCSP
MIC94162	1.7	5.5	3.0	15.5	60	200	High True	1.20		X	1.5 x 1 WLCSP
MIC94163	1.7	5.5	3.0	15.5	60		High True	1.20		X	1.5 x 1 WLCSP
MIC94164	1.7	5.5	3.0	15.5	2700	200	High True	1.20		X	1.5 x 1 WLCSP
MIC94165	1.7	5.5	3.0	15.5	2700		High True	1.20		X	1.5 x 1 WLCSP

Power Management Selection Guide

Dual High-Side Load Switches

Bold = New P/N	V_{IN} Min (V)	V_{IN} Max (V)	Max SW Current (A)	$R_{DS(ON)}$ @5V (mΩ)	Soft Start (µs)	Load Discharge (Ω)	Enable Logic	V_{EN} (V)	Input Pull-Up Resistor	Reverse Current Blocking	Package
MIC94066	1.7	5.5	2.0	85			High True	1.20			2x2
MIC94067	1.7	5.5	2.0	85		200	High True	1.20			2x2
MIC94068	1.7	5.5	2.0	85	800		High True	1.20			2x2
MIC94069	1.7	5.5	2.0	85	800	200	High True	1.20			2x2

General-Purpose Power Distribution (USB) Switches

Bold = New P/N	Type	V_{IN} Min (V)	V_{IN} Max (V)	Adj Current Limit	Current Limit Fixed (Min)	Current Limit Adj (Max)	$R_{DS(ON)}$ @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Approved	* = Reduced height package Package
MIC2003/13	Single	2.5	5.5		500mA, 800mA, 1.2A		70			X	X	X		X	X	SOT23-5, 2x2
MIC2004/14	Single	2.5	5.5		500mA, 800mA, 1.2A		70		Active High	X	X	X		X	X	SOT23-5, 2x2
MIC2005/15	Single	2.5	5.5		500mA, 800mA, 1.2A		70		Active High	X	X	X	X	X	X	SOT23-5, SOT23-6, 2x2
MIC2005A	Single	2.5	5.5		500mA		170		Active Low, Active High	X	X	X	X	X		SOT23-5, SOT23-6
MIC2009A	Single	2.5	5.5	X		900mA	170		Active Low, Active High	X	X	X		X		SOT23-6
MIC2005L	Single	2.5	5.5		500mA, 800mA, 1.2A		70		Active Low	X	X	X	X	X	X	SOT23-5
MIC2006/16	Single	2.5	5.5		500mA, 800mA, 1.2A		70		Active High	X	X	X		X	X	SOT23-6, 2x2
MIC2007/17	Single	2.5	5.5		200mA	2.0A	100		Noninverting	X	X	X		X	X	SOT23-6, 2x2
MIC2008/18	Single	2.5	5.5	X		2.0A	70		Active High	X	X	X		X	X	SOT23-6, 2x2
MIC2009/19	Single	2.5	5.5	X		2.0A	70		Active High	X	X	X	X	X	X	SOT23-6, 2x2
MIC2025-1	Single	2.7	5.5		500mA		140	X	Active High	X	X	X	X	X	X	SOIC-8, MSOP-8
MIC2025-2	Single	2.7	5.5		500mA		140	X	Active Low	X	X	X	X	X	X	SOIC-8, MSOP-8
MIC2026-1	Dual	2.7	5.5		500mA		90	X	Active High	X	X	X	X	X	X	SOIC-8, PDIP-8
MIC2026-2	Dual	2.7	5.5		500mA		90	X	Active Low	X	X	X	X	X	X	SOIC-8, PDIP-8
MIC2026A-1	Dual	2.7	5.5		500mA		100	X	Active High	X	X	X	X	X	X	SOIC-8
MIC2026A-2	Dual	2.7	5.5		500mA		100	X	Active Low	X	X	X	X	X	X	SOIC-8
MIC2027-1	Quad	2.7	5.5		500mA		150	X	Active High	X	X	X	X	X	X	SOIC-16, WSOIC-16
MIC2027-2	Quad	2.7	5.5		500mA		150	X	Active Low	X	X	X	X	X	X	SOIC-16, WSOIC-16
MIC2033	Single	2.5	5.5		475mA, 517mA, 760mA, 950mA, 1.14A		125		Active Low, Active High	X	X	X	X	X	X	SOT-23-6, DFN-6*
MIC2039	Single	2.5	5.5	X		2.5	75		Active Low, Active High	X	X	X	X	X	X	SOT-23-6, 2x2*
MIC2040-1	Single	0.8	5.5	X		1.5A	75	X	Active High	X	X	X	X	X	X	MSOP-10
MIC2040-2	Single	0.8	5.5	X		1.5A	75	X	Active Low	X	X	X	X	X	X	MSOP-10
MIC2041-1	Single	0.8	5.5	X		1.5A	75	X	Active High	X	Latched	X	X	X	X	MSOP-10
MIC2041-2	Single	0.8	5.5	X		1.5A	75	X	Active Low	X	Latched	X	X	X	X	MSOP-10
MIC2042-1	Single	0.8	5.5	X		3.0A	60	X	Active High	X	X	X	X	X	X	SOIC-8, TSSOP-14
MIC2042-2	Single	0.8	5.5	X		3.0A	60	X	Active Low	X	X	X	X	X	X	SOIC-8, TSSOP-14
MIC2043-1	Single	0.8	5.5	X		3.0A	60	X	Active High	X	Latched	X	X	X	X	SOIC-8, TSSOP-14
MIC2043-2	Single	0.8	5.5	X		3.0A	60	X	Active Low	X	Latched	X	X	X	X	SOIC-8, TSSOP-14
MIC2044-1	Single	0.8	5.5	X		6.0A	30	X	Active High	X	X	X	X	X	X	TSSOP-16

Power Management Selection Guide

General-Purpose Power Distribution (USB) Switches

Bold = New P/N	Type	V_{IN} Min (V)	V_{IN} Max (V)	Adj Current Limit	Current Limit Fixed (Min)	Current Limit Adj (Max)	$R_{DS(ON)}$ @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Approved	* = Reduced height package Package
MIC2044-2	Single	0.8	5.5	X		6.0A	30	X	Active Low	X	X	X	X	X	X	TSSOP-16
MIC2045-1	Single	0.8	5.5	X		6.0A	30	X	Active High	X	Latched	X	X	X	X	TSSOP-16
MIC2045-2	Single	0.8	5.5	X		6.0A	30	X	Active Low	X	Latched	X	X	X	X	TSSOP-16
MIC2075-1	Single	2.7	5.5		500mA		140	X	Active High	X	X	Latched	X	X	X	SOIC-8, MSOP-8
MIC2075-2	Single	2.7	5.5		500mA		140	X	Active Low	X	X	Latched	X	X	X	SOIC-8, MSOP-8
MIC2076-1	Dual	2.7	5.5		500mA		90	X	Active High	X	X	Latched	X	X	X	SOIC-8, PDIP-8
MIC2076-2	Dual	2.7	5.5		500mA		90	X	Active Low	X	X	Latched	X	X	X	SOIC-8, PDIP-8
MIC2076A-1	Dual	2.7	5.5		500mA		100	X	Active High	X	X	Latched	X	X	X	SOIC-8
MIC2076A-2	Dual	2.7	5.5		500mA		100	X	Active Low	X	X	Latched	X	X	X	SOIC-8
MIC2077-1	Quad	2.7	5.5		500mA		150	X	Active High	X	X	Latched	X	X	X	SOIC-16, WSOIC-16
MIC2077-2	Quad	2.7	5.5		500mA		150	X	Active Low	X	X	Latched	X	X	X	SOIC-16, WSOIC-16
MIC2090-1	Single	1.8	5.5		50mA		700	X	Active High	X	X	X	X	X		SOT-23-5
MIC2090-2	Single	1.8	5.5		50mA		700	X	Active High	X	Latched	Latched	X	X		SOT-23-5
MIC2091-1	Single	1.8	5.5		100mA		700	X	Active High	X	X	X	X	X		SOT-23-5
MIC2091-2	Single	1.8	5.5		100mA		700	X	Active High	X	Latched	Latched	X	X		SOT-23-5
MIC2095-1	Single	2.5	5.5		500mA		170	X	Active High	X	X	X	X	X		1.6x1.6*
MIC2095-2	Single	2.5	5.5		500mA		170	X	Active Low	X	X	X	X	X		1.6x1.6*
MIC2097-1	Single	2.5	5.5	X		1.1A	170	X	Active High	X	X	X	X	X		1.6x1.6*
MIC2097-2	Single	2.5	5.5	X		1.1A	170	X	Active Low	X	X	X	X	X		1.6x1.6*
MIC2098-1	Single	2.5	5.5		900mA		170	X	Active High	X	X	X	X	X		1.6x1.6*
MIC2098-2	Single	2.5	5.5		900mA		170	X	Active Low	X	X	X	X	X		1.6x1.6*
MIC2099-1	Single	2.5	5.5	X		1.1A	170	X	Active High	X	X	X	X	X		1.6x1.6*
MIC2099-2	Single	2.5	5.5	X		1.1A	170	X	Active Low	X	X	X	X	X		1.6x1.6*
MIC2505	Single	2.7	7.5		2.0A		30	X	Active High		X	X	X	X		SOIC-8, PDIP-8
MIC2505-1	Single	2.7	7.5		2.0A		30	X	Active High		X	X	X	X		SOIC-8
MIC2505-2	Single	2.7	7.5		2.0A		30	X	Active Low		X	X	X	X		SOIC-8
MIC2506	Dual	2.7	7.5		1.0A		75	X	Active High		X	X	X	X		SOIC-8, PDIP-8
MIC2514	Single	3	13.5		400mA		1,500		Active High		X	X				SOT23-5
MIC2536-1	Dual	2.7	5.5		100mA		400	X	Active High		X	X	X	X	X	SOIC-8, MSOP-8
MIC2536-2	Dual	2.7	5.5		100mA		400	X	Active Low		X	X	X	X	X	SOIC-8, MSOP-8
MIC2537-1	Quad	2.7	5.5		100mA		425	X	Active High		X	X	X		X	SOIC-16
MIC2537-2	Quad	2.7	5.5		100mA		425	X	Active Low		X	X	X		X	SOIC-16
MIC2544-1	Single	2.7	5.5	X		1.5A	80	X	Active High		X	X	X		X	SOIC-8, MSOP-8
MIC2544-2	Single	2.7	5.5	X		1.5A	80	X	Active Low		X	X	X		X	SOIC-8, MSOP-8
MIC2544A-1	Single	2.7	5.5	X		1.5A	80	X	Active High		X	X	X		X	SOIC-8, MSOP-8
MIC2544A-2	Single	2.7	5.5	X		1.5A	80	X	Active Low		X	X	X		X	SOIC-8, MSOP-8
MIC2545A-1	Single	2.7	5.5	X		3.0A	35	X	Active High		X	X	X		X	SOIC-8, PDIP-8, TSSOP-14
MIC2545A-2	Single	2.7	5.5	X		3.0A	35	X	Active Low		X	X	X		X	SOIC-8, PDIP-8, TSSOP-14
MIC2546-1	Dual	2.7	5.5	X		1.5A	80	X	Active High		X	X	X		X	SOIC-16, TSSOP-16
MIC2546-2	Dual	2.7	5.5	X		1.5A	80	X	Active Low		X	X	X		X	SOIC-16, TSSOP-16
MIC2547-1	Dual	2.7	5.5	X		1.5A	80	X	Active High		X	Latched	X		X	SOIC-16, TSSOP-16
MIC2547-2	Dual	2.7	5.5	X		1.5A	80	X	Active Low		X	Latched	X		X	SOIC-16, TSSOP-16
MIC2548-1	Single	2.7	5.5	X		1.5A	80	X	Active High		X	Latched	X		X	SOIC-8, MSOP-8
MIC2548-2	Single	2.7	5.5	X		1.5A	80	X	Active Low		X	Latched	X		X	SOIC-8, MSOP-8
MIC2548A-1	Single	2.7	5.5	X		1.5A	80	X	Active High		X	Latched	X		X	SOIC-8, MSOP-8

Power Management Selection Guide

General-Purpose Power Distribution (USB) Switches

Bold = New P/N	Type	V_{IN} Min (V)	V_{IN} Max (V)	Adj Current Limit	Current Limit Fixed (Min)	Current Limit Adj (Max)	$R_{DS(ON)}$ @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Approved	* = Reduced height package Package
MIC2548A-2	Single	2.7	5.5	X		1.5A	80	X	Active Low		X	Latched	X		X	SOIC-8, MSOP-8
MIC2549A-1	Single	2.7	5.5	X		3.0A	35	X	Active High		X	Latched	X		X	SOIC-8, PDIP-8, TSSOP-14
MIC2549A-2	Single	2.7	5.5	X		3.0A	35	X	Active Low		X	Latched	X		X	SOIC-8, PDIP-8, TSSOP-14

USB Power Switches Supporting ACPI S0/S3 State Transitions

Bold = New P/N	Type	V_{IN} Min (V)	V_{IN} Max (V)	Adj Current Limit	Current Limit Fixed (Min)	Current Limit Adj (Max)	$R_{DS(ON)}$ @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Approved	Switch Element	Internal Charge Pump	Package
MIC2010-1	Dual	4.5	5.5	X	500mA	50mA to 300mA	140	X	Active High	X	X	X	X	X	X	N-Ch	X	QSOP-16
MIC2010-2	Dual	4.5	5.5	X	500mA	50mA to 300mA	140	X	Active Low	X	X	X	X	X	X	N-Ch	X	QSOP-16
MIC2012-1	Dual	4.5	5.5		500mA		140	X	Active High	X	X	X	X	X	X	N-Ch	X	QSOP-16
MIC2012-2	Dual	4.5	5.5		500mA		140	X	Active Low	X	X	X	X	X	X	N-Ch	X	QSOP-16
MIC2012	Dual	4.5	5.5		500mA		140	X	—	X	X	X	X	X	X	N-Ch	X	SOIC-8
MIC2070-1	Dual	4.5	5.5	X	500mA	50mA to 300mA	140	X	Active High	X	X	Latched	X	X		N-Ch	X	QSOP-16
MIC2070-2	Dual	4.5	5.5	X	500mA	50mA to 300mA	140	X	Active Low	X	X	Latched	X	X		N-Ch	X	QSOP-16
MIC2072-1	Dual	4.5	5.5		500mA		140	X	Active High	X	X	Latched	X	X	X	N-Ch	X	QSOP-16
MIC2072-2	Dual	4.5	5.5		500mA		140	X	Active Low	X	X	Latched	X	X	X	N-Ch	X	QSOP-16
MIC2072	Dual	4.5	5.5		500mA		140	X	—	X	X	Latched	X	X	X	N-Ch	X	SOIC-8
MIC2073-1	Dual	2.7	5.5		500mA		210	X	Active High	X	X	X	X	X	X	N-Ch	X	SOIC-8
MIC2073-2	Dual	2.7	5.5		500mA		210	X	Active Low	X	X	X	X	X	X	N-Ch	X	SOIC-8
MIC2074-1	Dual	2.7	5.5		500mA		210	X	Active High	X	X	Latched	X	X	X	N-Ch	X	SOIC-8
MIC2074-2	Dual	2.7	5.5		500mA		210	X	Active Low	X	X	Latched	X	X	X	N-Ch	X	SOIC-8

USB Transceivers

Bold = New P/N	Description	Supported Speeds	Package
MIC2550*	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2550A	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2550A-2.5	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	2.5x2.5
MIC2551*	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2551A	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2551A-2.5	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	2.5x2.5
MIC2555	Universal Serial Bus On-The-Go (OTG) Transceiver	1.5Mbps (low) and 12Mbps (full)	4x4

* Not recommended for new designs

PC Card/PCMCIA/CardBus Power Distribution Switches

Bold = New P/N	Slots Supported	V_{CC3} On-Resistance (mΩ)	V_{CC5} On-Resistance (mΩ)	V_{PP} On-Resistance (mΩ)	Current Limit	Thermal Shutdown	Charge Pump*	UL Approved	Package
MIC2560	Single	40	70	550	X	X			WSOIC-16
MIC2561	Single	110	210	550	X	X			SOIC-14
MIC2562A	Single	100	70	600	X	X	X	X	SOIC-14, TSSOP-16

Power Management Selection Guide

PC Card/PCMCIA/CardBus Power Distribution Switches

Bold = New P/N	Slots Supported	V_{CC3} On-Resistance (mΩ)	V_{CC5} On-Resistance (mΩ)	V_{PP} On-Resistance (mΩ)	Current Limit	Thermal Shutdown	Charge Pump*	UL Approved	Package
MIC2563A	Dual	100	70	600	X	X	X	X	SSOP-28
MIC2564A	Dual	120	85	1300	X	X	X	X	SSOP-24, TSSOP-24
MIC2566	Single	120	85		X	X	X	X	SOIC-14, TSSOP-14
MIC2568	Dual	120	85		X	X	X	X	SSOP-28, TSSOP-28
MIC2569	1-CableCard	90		275	X	X	X		QSOP-16

* 12V is not required for switching when equipped with a charge pump.

Single-Voltage Monitors and Supervisors

Bold = New P/N	Reset Output	Reset Threshold (V)	t_{RESET} (ms)	Accuracy (%)	I_{SUPPLY} (µA)	Manual Reset	Watchdog Timer (ms)	Power Fail Comparator	* = Reduced height package Package
MIC705	Active-Low Push-Pull	4.65	140	±2.5	30	Yes	1600	1.25	SOIC-8
MIC706	Active-Low Push-Pull	4.4	140	±2.5	30	Yes	1600	1.25	SOIC-8
MIC707	Active-High/Low Push-Pull	4.65	140	±2.5	30			1.25	SOIC-8
MIC708	Active-High/Low Push-Pull	4.4	140	±2.5	30			1.25	SOIC-8
MIC803	Active-LowOpen-Drain	2.63, 2.93, 3.00, 3.08, 4.00, 4.10, 4.38, 4.63	20/140/1100	±2.5	5.0				SOT23-3, SC70-3
MIC809	Active-Low Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	±2.5	5.0				SOT23-3, SC70-3
MIC809-5	Active-Low Push-Pull	2.93	30	±2.5	5.0				SOT23-3, SC70-3
MIC810	Active-High Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	±2.5	5.0				SOT23-3, SC70-3
MIC811	Active-Low Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	±2.5	5.0	Yes			SOT143
MIC812	Active-High Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	±2.5	5.0	Yes			SOT143
MIC1810	Active-Low Push-Pull	4.12, 4.37, 4,62	100	±2.5	5.0				SOT23-3
MIC1815	Active-Low Push-Pull	2.55, 2.88	100	±3.0	5.0				SOT23-3
MIC1232	Active-High/Low Push-Pull	4.37, 4.62	250	±3.0	18		120/600/1200		SOIC-8, PDIP-8
MIC1832	Active-High/Low Push-Pull	2.55, 2.88	250	±3.0	15	Yes	120/600/1200		SOIC-8, PDIP-8
MIC2755	Active-Low/Open-Drain	1.24	700	±2.0	2.0	Yes			MSOP-8
MIC2775	Active-High/Low Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	140	±1.5	5.0	Yes			SOT23-5
MIC2776N	Active-Low/Open-Drain	0.3	140	±1.5	3.0	Yes			SOT23-5
MIC2776H	Active-HighPush-Pull	0.3	140	±1.5	3.0	Yes			SOT23-5
MIC2776L	Active-Low Push-Pull	0.3	140	±1.5	3.0	Yes			SOT23-5
MIC2778	Active-Low Open-Drain	1.24 with adjustable hysteresis	140	±1 or ±2	1.0				SOT23-5
MIC2779H	Active-High Push-Pull	1.24 with adjustable hysteresis	140	±1 or ±2	1.0				SOT23-5
MIC2779L	Active-Low Push-Pull	1.24 with adjustable hysteresis	140	±1 or ±2	1.0				SOT23-5
MIC2785	Active-Low Push-Pull	1.62	0.025	±1.5	4.5	Yes			1.2x1.2
MIC2786	Active-Low Open-Drain and Active-High Push-Pull	1.665, 2.188, 2.313, 2.625, 2.925, 3.075, 4.375, 4.625	140/240	±2.0	7.4	Dual			2.0x2.0
MIC2787	Active-Low Open-Drain and Active-High Push-Pull	1.665, 2.188, 2.313, 2.625, 2.925, 3.075, 4.375, 4.625	140/240	±2.0	7.4	Dual			2.0x2.0
MIC6315	Active-Low Open-Drain	2.63, 2.93, 3.00, 3.08, 4.00, 4.10, 4.38, 4.63	20/140/1100	±2.5	5.0	Yes			SOT143
MIC8114	Active-Low Push-Pull	3.08	790	±2.5	5.0	Yes			SOT143
MIC8115	Active-Low Push-Pull	3.08	1100	±2.5	5.0	Yes			SOT143
MIC826	Active-High, Active-Low Push-Pull	1.665, 2.188, 2.315, 2.625, 2.925, 3.075, 4.375, 4.625	140	±1.5	3.8	Yes	1600		1.6x1.6*
MIC706P/R/S/T	Active-Low Push-Pull	2.63, 2.93, 3.08	140	±2.5	30	Yes	1600	1.25	SOIC-8
MIC708R/S/T	Active-High/Low Push-Pull	2.63, 2.93, 3.08	140	±2.5	30			1.25	SOIC-8

Power Management Selection Guide

Dual-Voltage Monitors and Supervisors

Bold = New P/N	Reset Output	Reset Threshold Voltage	Second Reset Threshold Voltage	t_{RESET} (ms)	Accuracy (%)	I_{SUPPLY} (µA)	Manual Reset	Package
MIC2772	Active-Low/Open-Drain	2.93, 3.08, 4.38, 4.63	2.93, 3.08, 4.38, 4.63	20/140/1100	±2.5	10	X	2x2
MIC2774N	Active-Low/Open-Drain	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	0.3	140	±1.5	3.5	X	SOT23-5
MIC2774H	Active-High/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	0.3	140	±1.5	3.5	X	SOT23-5
MIC2774L	Active-Low/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	0.3	140	±1.5	3.5	X	SOT23-5
MIC2777	Active-High/Low/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67,2.81, 2.93, 3.09, 4.43, 4.68	0.3	140	±1.5	3.5		SOT23-5

Pushbutton Reset ICs

Bold = New P/N	Reset Output	Reset Threshold (V)	t_{SETUP} (s)	t_{RESET} (ms)	Accuracy (%)	I_{SUPPLY} (µA)	Manual Reset	* = Reduced height package Package
MIC2782	Active-Low/Open-Drain	None	6, 8, 10, 12	500/1000/2000		2.2	Dual	0.8x1.2 CSP
MIC2786	Active-Low/Open-Drain and Active-High/Push-Pull	1.665, 2.188, 2.313, 2.625, 2.925, 3.075, 4.375, 4.625	'2, 4, 6	140/240	±2.0	7.4	Dual	2x2*
MIC2787	Active-Low/Open-Drain and Active-High/Push-Pull	1.665, 2.188, 2.313, 2.625, 2.925, 3.075, 4.375, 4.625	'2, 4, 6	140/240	±2.0	7.4	Dual	2x2*
MIC2788	Active-Low/Open-Drain and Active-High/Push-Pull	None	'2, 4, 6	140/240		2.9	Dual	2x2*
MIC2789	Active-Low/Open-Drain and Active-High/Push-Pull	None	'2, 4, 6	140/240		2.9	Dual	2x2*
MIC2790	Active-Low/Open-Drain/Push-Pull, Active-High/Push-Pull	0.4	1.2	1.05	±1.0	40	Yes	TSOT23-5, 2x2*
MIC2791	Active-Low/Open-Drain/Push-Pull, Active-High/Push-Pull	0.4	1.2	1.05	±1.0	40	Yes	1.6x1.6*
MIC2793	Active-Low/Open-Drain/Push-Pull and Active-High/Push-Pull	0.4	1.2	1.05	±1.0	40	Yes	2x2*

Fan Control

Bold = New P/N	Description	Package
MIC502	Fan Management IC	PDIP-8, SOIC-8
MIC74	2-wire SMBus™, I²C™ I/O Expander and Fan Controller	QSOP-16

Temperature Sensors

Bold = New P/N	Description	Internal Zone	Remote Zone	Data Width	CRIT Output	# of Device per I2C Bus	Resolution (Bits)	Accuracy	Package
MIC184	Local/Remote Thermal Supervisor	1	1 *	9		8 **	9	±3%	SOIC-8, MSOP-8
MIC280	Precision IttyBitty® Thermal Supervisor	1	1	12	X	8	12	±1%	SOT23-6
MIC281	Low-Cost IttyBitty® Thermal Sensor		1	8		8	8	±3%	SOT23-6
MIC284	2-Zone Thermal Supervisor w/CRIT Output	1	1	8	X	8	8	±3%	SOIC-8, MSOP-8
MIC384	3-Zone Thermal Supervisor	1	2	8		8	8	±3%	SOIC-8, MSOP-8

* MIC184 has limit registers for monitoring one zone at a time; either the internal or external zone may be monitored at any given time.

** In LM75 mode; 4 when using T1 function.

I/O Expanders

Bold = New P/N	Description	V_{IN} Min (V)	V_{IN} Max (V)	# Of Outputs	V_{OUT} Max	Max Sink Current Per Pin	Supply Current Typ	Package
MIC74	2-wire SMBus™, I²C™ I/O Expander and Fan Controller	2.7	3.6	8	5.5V	10mA	2µA	QSOP-16

Hot Swap/Power Controller Selection Guide

Low Voltage (<16V)

Bold = New P/N	# of Output	Input Voltage Range	Latch Off	Auto Retry	/FAULT	/POR	# of PWRGD	Foldback Current Limit	Comments	Package
MIC2085	1	+2.3V to +16.5V	X		X	X		X	Crowbar output for fast discharge of large CLoad during over voltage condition. Pin-for-pin equivalent to LTC1642	QSOP-16
MIC2086	1	+2.3V to +16.5V	X		X	X	1 Active High	X	Auto-discharge of CLoad and PWRGD signal in addition to all of the MIC2085 features	QSOP-20
MIC2580A	4	±12V , +3.3V, +5V	X		X	X	2 Active Low	X	Single-slot controller for CompactPCI applications.	TSSOP-24
MIC2582	1	+2.3V to +13.2V	X			X			Pin-pin equivalent to LTC1422; Dual-level over current fault detection.	SOIC-8
MIC2583	1	+2.3V to +13.2V	X		X	X	1 Active High		Dual-level over current fault detection; CLoad discharge capability.	QSOP-16
MIC2583R	1	+2.3V to +13.2V		X	X	X	1 Active High		Dual-level over current fault detection; CLoad discharge capability.	QSOP-16
MIC2310-1	1	+10.8V to +13.2V	X	X	X		1 Active High		Single FET, constant power-limit 240VA Controller	TSSOP-24
MIC2310-2	1	+10.8V to +13.2V	X	X	X		1 Active Low		Single FET, constant power-limit 240VA Controller	TSSOP-24
MIC2584	2	CH1: +2.3V to +13.2V CH2: +1.0V to +13.2V	X		X	X			Output voltage tracking with dual-level over current fault detection.	TSSOP-16
MIC2585-1	2	CH1: +2.3V to +13.2V CH2: +1.0V to +13.2V	X		X	X	2 Active High		VOUT2 follows VOUT1	TSSOP-24
MIC2585-2	2	CH1: +2.3V to +13.2V CH2: +1.0V to +13.2V	X		X	X	2 Active High		VOUT1 follows VOUT2	TSSOP-24

High Voltage (>16V)

Bold = New P/N	# of Output	Input Voltage Range	Latch Off	Auto Retry	/FAULT	/POR	# of PWRGD	Foldback Current Limit	Comments	Package
MIC2586-1	1	+10V to +80V	X				3 Active High	X	Multiple PWRGD signals with programmable sequencing delay for enabling downstream DC/DC converters	SOIC-14
MIC2586-2	1	+10V to +80V	X				3 Active Low	X	Multiple /PWRGD signals with programmable sequencing delay for enabling downstream DC/DC converters	SOIC-14
MIC2586R-1	1	+10V to +80V		X			3 Active High	X	Multiple PWRGD signals with programmable sequencing delay for enabling downstream DC/DC converters	SOIC-14
MIC2586R-2	1	+10V to +80V		X			3 Active Low	X	Multiple /PWRGD signals with programmable sequencing delay for enabling downstream DC/DC converters	SOIC-14
MIC2587-1	1	+10V to +80V	X				1 Active High	X	Pin-pin equivalent to LT1641–1	SOIC-8
MIC2587-2	1	+10V to +80V	X				1 Active Low	X	Pin-pin equivalent to LT1641–1	SOIC-8
MIC2587R-1	1	+10V to +80V		X			1 Active High	X	Pin-pin equivalent to LT1641–2	SOIC-8
MIC2587R-2	1	+10V to +80V		X			1 Active Low	X	Pin-pin equivalent to LT1641–2	SOIC-8
MIC2588-1	1	–19V to –80V	X				1 Active High		Pin-pin equivalent to LT1640/LT/LT1640A/LT4250	SOIC-8
MIC2588-2	1	–19V to –80V	X				1 Active Low		Pin-pin equivalent to LT1640/LT/LT1640A/LT4250	SOIC-8
MIC2594-1	1	–19V to –80V	X				1 Active High		MIC2588 with Programmable input ON/OFF control	SOIC-8
MIC2594-2	1	–19V to –80V	X				1 Active Low		MIC2588 with Programmable input ON/OFF control	SOIC-8
MIC2589-1	1	–19V to –80V	X				3 Active High		Programmable UVLO and OV, staggered PWRGD signals for sequencing downstream loads	SOIC-14
MIC2589-2	1	–19V to –80V	X				3 Active Low		Programmable UVLO and OV, staggered /PWRGD signals for sequencing downstream loads	SOIC-14
MIC2589R-1	1	–19V to –80V		X			3 Active High		Programmable UVLO and OV, staggered PWRGD signals for sequencing downstream loads	SOIC-14
MIC2589R-2	**1**	–19V to –80V		X			3 Active Low		Programmable UVLO and OV, staggered /PWRGD signals for sequencing downstream loads	SOIC-14
MIC2595-1	1	–19V to –80V	X				3 Active High		Programmable UVLO hysteresis, staggered PWRGD signals for sequencing downstream loads	SOIC-14
MIC2595-2	1	–19V to –80V	X				3 Active Low		Programmable UVLO hysteresis, staggered /PWRGD signals for sequencing downstream loads	SOIC-14

Hot Swap/Power Controller Selection Guide

High Voltage (>16V)

Bold = New P/N	# of Output	Input Voltage Range	Latch Off	Auto Retry	/FAULT	/POR	# of PWRGD	Foldback Current Limit	Comments	Package
MIC2595R-1	1	–19V to –80V		X			3 Active High		Programmable UVLO hysteresis, staggered PWRGD signals for sequencing downstream loads	SOIC-14
MIC2595R-2	1	–19V to –80V		X			3 Active Low		Programmable UVLO hysteresis, staggered /PWRGD signals for sequencing downstream loads	SOIC-14

Compact-PCI/PCI-X/PCI Express

Bold = New P/N	# of Output	Input Voltage Range	Latch Off	Auto Retry	# of /FAULT	/POR	# of PWRGD	Foldback Current Limit	Comments	Package
MIC2590B	10	±12, +5, +3.3, & +3.3VAUX	X		2				Dual-slot controller for PCI v2.x and PCI-X 1.0b. Compliant w/ IPMI v1.0 support. SMBus interface	TQFP-48
MIC2593	10	±12, +5, +3.3, & +3.3VAUX	X		2				Dual-slot controller for PCI v2.x and PCI-X 1.0b. Compliant w/ IPMI v1.0 support. SMBus interface	TQFP-48
MIC2341	6	'+12, +3.3, & +3.3VAUX	X		4		4		Dual-Slot PCIe, No SMBus interface, Main & AUX outputs independent	TQFP-48
MIC2341R	6	'+12, +3.3, & +3.3VAUX		X	4		4		Dual-Slot PCIe, No SMBus interface, Main & AUX outputs independent	TQFP-48
MIC2342	6	'+12, +3.3, & +3.3VAUX	X		4		4		Dual-Slot PCIe, No SMBus interface, Main & AUX outputs inter-dependent upon AUX overcurrent event	TQFP-48
MIC2342R	6	'+12, +3.3, & +3.3VAUX		X	4		4		Dual-Slot PCIe, No SMBus interface, Main & AUX outputs inter-dependent upon AUX overcurrent event	TQFP-48
MIC2591B	6	'+12, +3.3, & +3.3VAUX	X		2		1 Active Low		Dual-Slot PCIe, with IPMI v1.0 Support	TQFP-48
MIC2592B	6	'+12, +3.3, & +3.3VAUX	X		2		1 Active Low		Dual-Slot PCIe, with IPMI v1.0 Support	TQFP-48

Linear ICs Selection Guide

Comparators

Bold = New P/N	Description	V_{IN} Min (V)	V_{IN} Max (V)	Supply Current (µA)	Input Offset Voltage (Max)	Input Bias Current	Propagation Delay	Output	Package
MIC6270	Fast, High-Voltage Comparator	2.0	36	300	5mV	25nA	0.6us	Open-Drain	SOT23-5
MIC7211	Rail-to-Rail Input Comparator	2.2	10	5.0	10mV	5pA	4µs	Push-Pull	SOT23-5
MIC7221	Rail-to-Rail Input Comparator	2.2	10	5.0	10mV	5pA	4µs	Open-Drain	SOT23-5

Comparators with Internal Reference

Bold = New P/N	Description	V_{IN} Min (V)	V_{IN} Max (V)	Supply Current (µA)	Onboard Reference (V)	Onboard Reference Tolerance	Input Bias Current	Propagation Delay	Output	* = Reduced height package Package
MIC833	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.0	1.25	±1%	5pA	5µs	Open-Drain	SOT23-5
MIC834	Comparator with Reference	1.5	5.5	1.5	1.25	±1%	5pA	5µs	Open-Drain	SOT23-5
MIC841H	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Push-Pull	SC70-5, 1.6x1.6*
MIC841L	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Push-Pull	SC70-5, 1.6x1.6*
MIC841N	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Open-Drain	SC70-5, 1.6x1.6*
MIC842H	Comparator with Reference	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Push-Pull	SC70-5, 1.2x1.6*
MIC842L	Comparator with Reference	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Push-Pull	SC70-5, 1.2x1.6*
MIC842N	Comparator with Reference	1.5	5.5	1.5	1.25	±1.25%	5pA	12µs	Open-Drain	SC70-5, 1.2x1.6*
MIC845	Comparator with Reference	2.75	5.5	1.0	2.55	±2%	5pA	12µs	Open-Drain	SC70-5

Operational Amplifiers

Bold = New P/N	Description	V_{IN} Min (V)	V_{IN} Max (V)	# of Op-Amps per Package	Supply Current (per Op-Amp)	Rail-to-Rail	Input Offset Voltage Typ (mV)	Input Offset Voltage Max (mV)	Typ Input Bias Current	GBW	Slew Rate (V/µs)	Package
MIC6211	High Voltage Op-Amp	4.0	32	1	1.2mA			7.0	50nA	2.5MHz	6.0	SOT23-5
LMC7101A	General Purpose	2.7	12	1	500µA	Input/Output	0.1	6.0	1pA	500KHz	0.5	SOT23-5
LMC7101B	General Purpose	2.7	12	1	500µA	Input/Output		9.0	1pA	500KHz	0.5	SOT23-5
MIC7111	Micropower 1.8V	1.8	11	1	15µA	Input/Output		7.0	1pA	25KHz	20	SOT23-5
MIC7122	General Purpose	2.2	15	2	350µA	Input/Output		9.0	1pA	750KHz	0.7	MSOP-8
MIC7300	High Output Drive	2.2	10	1	700µA	Input/Output		9.0	0.5pA	500KHz	0.5	SOT23-5, MSOP-8
MIC860	Very Low Power	2.43	5.25	1	30µA	Output		15	20pA	4.0MHz	3.0	SC70-5
MIC861	Very Low Power	2.43	5.25	1	4.6µA	Output		10	20pA	400KHz	0.12	SC70-5
MIC862	Very Low Power	2.0	5.25	2	31µA	Output		6.0	10pA	3.0MHz	4.0	SOT23-8
MIC863	Very Low Power	2.0	5.25	2	4.2µA	Output		6.0	10pA	450KHz	0.35	SOT23-8
MIC864	Dual 33uA / 350kHz Op-Amp	2.5	5.5	2	33µA	Input/Output		8	2.5pA	350KHz	0.2	SOIC-8, 2.5x2.5*
MIC910	Low Pwr/High Speed	5.0	18	1	2.4mA			15	3.5µA	135MHz	270	SOT23-5
MIC911	Low Pwr/High Speed	5.0	18	1	1.25mA			10	1.5µA	105MHz	120	SOT23-5
MIC912	Low Pwr/High Speed	5.0	18	1	2.4mA			15	3.5µA	200MHz	360	SOT23-5
MIC913	Low Pwr/High Speed	5.0	18	1	4.2mA			16	5.5µA	350MHz	500	SOT23-5
MIC914	Low Pwr/High Speed	5.0	18	1	1.25mA			10	1.5µA	160MHz	160	SOT23-5
MIC915	Low Pwr/High Speed	5.0	18	2	2.4mA			15	3.5µA	135MHz	270	MSOP-10
MIC916	Low Pwr/High Speed	5.0	18	3	2.4mA			15	3.5µA	135MHz	270	QSOP-16
MIC918	Low Pwr/High Speed	5.0	18	1	550µA			5.0	0.26µA	51MHz	1500	SOT23-5, SC70-5
MIC919	Low Pwr/High Speed	5.0	18	1	360µA			5.0	0.13µA	27MHz	1500	SOT23-5, SC70-5
MIC920	Low Pwr/High Speed	5.0	18	1	500µA			5.0	0.26µA	80MHz	3000	SOT23-5, SC70-5
MIC921	Low Pwr/High Speed	5.0	18	1	300µA			5.0	0.13µA	45MHz	3000	SOT23-5, SC70-5
MIC922	Low Pwr/High Speed	5.0	18	1	2.5mA			5.0	1.7µA	230MHz	1500	SC70-5
MIC923	Low Pwr/High Speed	5.0	18	1	2.5mA			5.0	1.7µA	410MHz	2200	SC70-5

Linear ICs Selection Guide

References

Bold = New P/N	Description	V_{IN} Max (V)	Tol (Typ) %	V_{OUT} (V)	Output Current Min	Output Current Max	Noise (µV) rms	Reverse Breakdown Stability	Package
LM4040C	Precision Micropower Shunt	15	±0.5	2.5, 4.096, 5.0	60µA	15mA	35	120ppm	SOT23-3
LM4040D	Precision Micropower Shunt	15	±1.0	2.5, 4.096, 5.0	60µA	15mA	35	120ppm	SOT23-3
LM4041C	Precision Micropower Shunt	15	±0.5	1.225, Adj (1.24V-10V)	60µA	12mA	20	120ppm	SOT23-3
LM4041D	Precision Micropower Shunt	15	±1.0	1.225, Adj (1.24V-10V)	60µA	12mA	20	120ppm	SOT23-3
MIC4043	Low-Side Secondary-Side Shunt Regulator Improved Low-Voltage LM431	10	±1.0	Adj	1mA	15mA			SOT143

Timers

Bold = New P/N	Description	V_{IN} Min (V)	V_{IN} Max (V)	Supply Current (µA)	Timing Accuracy	Max Frequency	Package
MIC1555	RC Timer/Oscillator "555 Timer"	2.7	18	240	0.02	5MHz	SOT23-5, **2x2***
MIC1557	RC Timer/Oscillator with Shutdown	2.7	18	240	0.02	5MHz	SOT23-5

RF Wireless ICs Selection Guide

Receivers

Bold = New P/N	Frequency Range (MHz)	V_{IN} Min (V)	V_{IN} Max (V)	Modulation	Maximum Data Rate	Supply Current (mA)	Sensitivity	Temp Range	Auto Polling	Package
MICRF009	300 - 440	4.75	5.5	ASK/OOK	2Kbps	2.9	-104dBm @ 1Kbps	-40°C to +85°C		SOIC-16
MICRF010	300 - 440	4.75	5.5	ASK/OOK	2Kbps	2.9	-105dBm @ 1Kbps	-40°C to +85°C		SOIC-8
MICRF211	380 - 450	3.0	3.6	ASK/OOK	10Kbps	6.0	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16
MICRF213	300 - 350	3.0	3.6	ASK/OOK	7.2Kbps	3.9	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16
MICRF218	300 - 450	3.0	3.6	ASK/OOK	10Kbps	5.5	-110dBm @ 1Kbps	-40°C to +85°C		QSOP-16
MICRF219A	300 - 450	3.0	3.6	ASK/OOK	10Kbps	4.0	-110dBm @ 1Kbps	-40°C to +105°C	X	QSOP-16
MICRF220	300 - 450	3.0	3.6	ASK/OOK	10Kbps	4.0	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16
MICRF221	850 - 950	3.0	3.6	ASK/OOK	10Kbps	9.0	-109dBm @1Kbps	-40°C to +105°C	X	QSOP-16

Transmitters

Bold = New P/N	Frequency Range (MHz)	V_{IN} Min (V)	V_{IN} Max (V)	Modulation	Data Rate Modulation	Supply Current (mA)	Output Power	Temp Range	Package
MICRF112	300 - 450	1.8	3.6	ASK/FSK	50Kbps ASK 10Kbps FSK	6.9 (ASK) 11.5 (FSK)	+10dBm	-40°C to +125°C	MSOP-10, 2x2
MICRF113	300 - 450	1.8	3.6	ASK/OOK	20Kbps	12.3	+10dBm	-40°C to +85°C	SOT23-6
MICRF405	290 - 980	2.2	3.6	ASK/FSK	200Kbps FSK 50Kbps ASK	18.0	+10dBm	-40°C to +125°C	4x4
MAQRF112	300 - 450	1.8	3.6	ASK/FSK	10Kbps	6.9 (ASK) 11.5 (FSK)	+10dBm	-40°C to +125°C	MSOP-10

Transceivers

Bold = New P/N	Frequency Range (MHz)	V_{IN} Min (V)	V_{IN} Max (V)	Modulation	Maximum Data Rate	Supply Current Rx (mA)	Supply Current Tx (mA)	Sensitivity	Output Power	Temp Range	Package
MICRF505	850 - 950	2.0	2.5	FSK	<200Kbps	13.5	28.0	-111dBm @ 2.4Kbps	+10dBm	-40°C to +85°C	5x5
MICRF505L	850 - 950	2.25	5.5	FSK	<200Kbps	13.5	28.0	-110dBm @ 2.4Kbps	+10dBm	-40°C to +85°C	5x5
MICRF506	410 - 450	2.0	2.5	FSK	<200Kbps	12.0	21.5	-113dBm @ 2.4Kbps	+11dBm	-40°C to +85°C	5x5
MICRF507	470 - 510	2.0	2.5	FSK	<200Kbps	12.0	21.5	-113dBm @ 2.4Kbps	+11dBm	-40°C to +85°C	5x5

RF Low-Noise Amplifiers

Bold = New P/N	Frequency Range (MHz)	V_{IN} Min (V)	V_{IN} Max (V)	Supply Current (mA)	Shutdown Supply Current (µA)	Gain (dB)	Noise Figure (dB)	Input IP3 (dBm)	Input P1dB (dBm)	Temp. Range	Package
MICRF300	300-1000	1.8	3.6	2.5	1	18.3	1.15	–13	–25	–40°C to +85°C	SC70-6

Encoders

Bold = New P/N	Data Rate	V_{IN} Min (V)	V_{IN} Max (V)	Internal Address	Address Combinations	Supply Current (mA)	CRC	Temp Range	Package
MICRF302	<4.8Kbps	1.8	3.6	20-bit	>1Million	0.130	8-bit	-40°C to +85°C	2.5x2.5

Automotive (AEC-Q100 Qualified) Selection Guide

Power Management

Bold = New

P/N	V_{IN}	Comments	Package
MAQ5280	4.5V to 120V	25mA LDO with Reverse Battery Protection	eSOIC-8
MAQ5281	4.5V to 120V	25mA LDO with Reverse Battery Protection	eMSOP-8
MAQ5282	4.5V to 120V	50mA LDO with Reverse Battery Protection	eMSOP-8
MAQ5283	4.5V to 120V	150mA LDO with Reverse Battery Protection	eSOIC-8
MAQ3203	4.5V to 42V	1.5MHz Step-Down LED Driver	SOIC-8
MAQ4123	4.5V to 20V	Low-Side Mosfet Driver, Dual Inverting	eSOIC-8
MAQ4124	4.5V to 20V	Low-Side Mosfet Driver, Dual Non-Inverting	eSOIC-8
MAQ4125	4.5V to 20V	Low-Side Mosfet Driver, Inverting + Non-Inverting	eSOIC-8

RF Transmitters

Bold = New

P/N	V_{IN}	Comments	Package
MAQRF112	1.8V to 3.6V	Automotive, +10dBm, 300MHz to 450MHz, 1.8V to 3.6V, ASK/FSK Transmitter with Shudown	MSOP-10

LAN Solutions

Bold = New

P/N	V_{IN}	Comments	Package
KSZ8051MNLU	3.3V	10/100 Ethernet PHY w/ MII	5x5
KSZ8051RNLU	3.3V	10/100 Ethernet PHY w/ RMII	5x5
KSZ8041NL AM	3.3V	10/100 Ethernet PHY w/ MII & RMII	5x5
KSZ8851-16MLLU	3.3V	10/100 Ethernet (MAC+PHY) Controller w/ 16-bit Host bus	LQFP-48
KSZ8873MLL AM	3.3V	10/100 Ethernet 3-Port Switch w/ MII	LQFP-64
KSZ8873RLLU	3.3V	10/100 Ethernet 3-Port Switch w/ RMII	LQFP-64
KSZ8842-PMBL AM	3.3V	10/100 Ethernet 2-Port Switch w/ PCI	LFBGA-100
KSZ8893MQL AM	3.3V	10/100 Ethernet 3-Port Switch w/ MII & RMII	PQFP-128
KSZ8895MLU	3.3V	10/100 Ethernet 5-Port Switch w/ MII	LQFP-128
KSZ8864RMNU	3.3V	10/100 Ethernet 4-Port Switch w/ MII & RMII	8x8

KSZ8795CLX
Integrated 5-Port, 10/100 Managed Ethernet Switch with Gigabit GMII/RGMII and MII/RMII Interfaces

The KSZ8795CLX is a highly integrated, Layer 2-managed, 5-port switch with numerous features designed to reduce system cost. It is intended for cost-sensitive applications requiring four 10/100Mbps copper ports and one 10/100/1000Mbps Gigabit uplink port. The KSZ8795CLX incorporates a small package outline, lowest power consumption with internal biasing, and on-chip termination. Its extensive features set includes enhanced power management, programmable rate limiting and priority ratio, tagged and port-based VLAN, port-based security and ACL rule-based packet filtering technology, quality-of-service (QoS) priority with four queues, management interfaces, enhanced MIB counters, high-performance memory bandwidth, and a shared memory-based switch fabric with non-blocking support. The KSZ8795CLX provides support for multiple CPU data interfaces to effectively address both current and emerging fast Ethernet and Gigabit Ethernet applications where the port 5 GMAC can be configured to any of GMII, RGMII, MII and RMII modes.

The KSZ8795CLX product is built upon Micrel's industry-leading Ethernet latest analog and digital technology, with features designed to offload host processing and streamline your overall design.

• Four integrated 10/100Base-T/TX MAC/PHYs

• One integrated 10/100/1000Base-T/TX GMAC with selectable GMII, RGMII, MII, and RMII interfaces

• Small 80-pin LQFP package

A robust assortment of power-management features including energy-efficient Ethernet (EEE), PME, and wake-on-LAN (WoL) have been designed-in to satisfy energy-efficient environments.

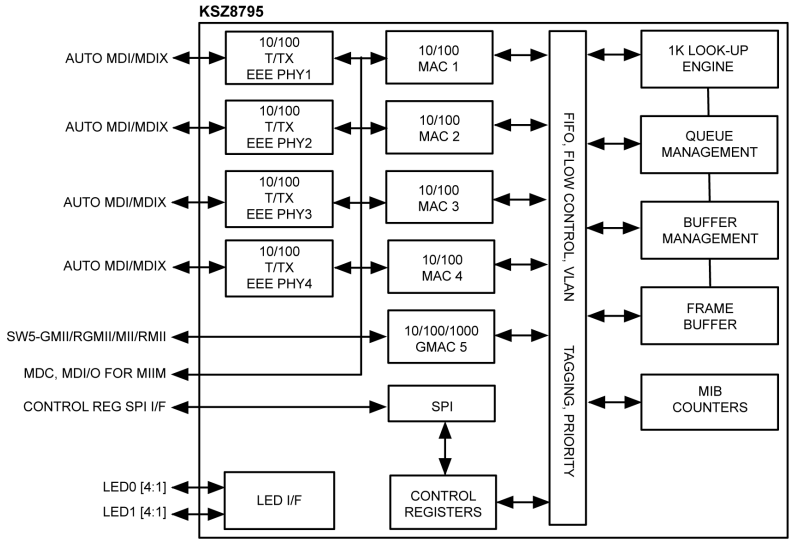
All registers in the MAC and PHY units can be managed through the SPI interface. MIIM PHY registers can be accessed through the MDC/MDIO interface.

Applications

- ATA
- VoIP embedded applications for voice monitoring, security, cloud VoIP services, kiosks, multi-function printers, paging systems, and home intercoms
- VoIP industrial M2M applications like FXO/FXS redundancy, high availability, point-of-sale terminals, machine-to-machine interaction through DTMF communication, railway VoIP networks, and high-end fax networks
- Industrial Ethernet applications that employ IEEE 802.3-compliant MACs (Ethernet/IP, Profinet, MODBUS TCP, etc.).
- VoIP phone
- Set-top/game box
- Automotive
- Industrial control
- IPTV POF
- SOHO residential gateway with full-wire speed of four LAN ports
- Broadband gateway/firewall/VPN
- Integrated DSl/cable modem
- Wireless LAN access point + gateway
- Standalone 10/100 switch
- Networked measurement and control systems

Ordering Information

P/N	Package	PHY Ports	MAC Interfaces
KSZ8765CLX	80-Pin LQFP	2 x 100Base-FX 2 x 10/100Base-T/TX	1 x GMII/RGMII/RMII/MII
KSZ8775CLX	80-Pin LQFP	3 x 10/100Base-T/TX	1 x RMII 1 x RGMII/RMII/MII
KSZ8794CNX	64-Pin QFN	3 x 10/100Base-T/TX	1 x RGMII/RMII/MII
KSZ8795CLX	80-Pin LQFP	4 x 10/100Base-T/TX	1 x GMII/RGMII/RMII/MII



LAN Solutions Product Highlights

VoIP IP Phone-on-a-Chip Family with Multiple Solutions for Mainstream Enterprise and Consumer Solutions

Micrel's new KSZ838x family provides a very high level of integration that results in a reduction in power consumption of over 40% and an over 30% reduction in BOM costs of legacy solutions.

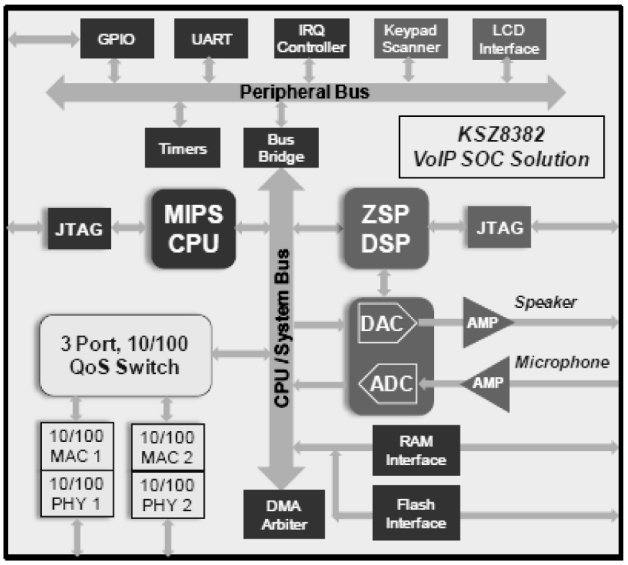
The Micrel KSZ838x IP Phone-on-a-Chip SOC supplies a complete IP phone solution for enterprise and residential IP telephony, implementing a compact, green, and low-cost IP phone. The KSZ8382 is a highly integrated SoC designed to enable a new generation of functionality for green IP phones.

The KSZ8382 SoC is the ideal choice for enterprise and residential IP phones, backed by Micrel's high-reliability and solution robustness proven in commercial, industrial, and automotive applications around the globe.

The KSZ8382 implements a multiprocessor architecture with embedded RISC CPU and powerful DSP, providing a flexible VoIP platform to offer excellent voice quality.

The chip's superior integration increases performance, featuring a high-performance audio subsystem, LCD interface, keypad scanner, memory controllers for both SDRAM and DDR2, and flexible GPIO.

Micrel offers the entire SIP stack, APIs, and drivers free of charge with its ICs.



KSZ838x IP Phone SoC

Micrel integrates the industry's most robust and lower-power 10/100 Ethernet Switch, implementing critical functionality including IEEE 802.1p priority QoS, 802.1Q VLANs, and IGMP v1/v2 snooping for multicase packet filtering. The part implements innovative advanced power management including EEE (IEEE 802.3az) PHY technology.

Applications

- Industrial LAN solutions end-device attachments for both distributed and centralized topologies
- Daisy-chained 1588 networks

KSZ8382 Functionality

- MIPS32 RISC CPU for configuration and network processing
- External SDRAM, DDR2, and Flash interfaces
- ZSP400 DSP offers high quality voice/audio processing
- 8kHz/16kHz 16-bit ADC/DAC with integrated amplifiers
- Embedded VoIP Firmware (DSP)
  - Wideband CODECs: G.722, G.722.1, G.722.2
  - Narrowband CODECs: G.711 μ-law/A-law, G.723.1, G.726, G.729A/B
  - Voice quality optimizations and telephony features
- 3-port 10/100BaseT Ethernet switch with integrated low-power PHY transceivers supporting IEEE 802.3az EEE
- Flexible GPIO support
- Keypad scanner: 6 x 6 and 8 x 8 keypad configurations
- LCD interface

KSZ8382L IP Phone SoC Evaluation Board

- Evaluation platform for Micrel VoIP KSZ8382L single-chip IP phone SoC solution
- Enables OEM bring-up of complete SIP IP phone solution, phone call functions, and user interface

Ordering Information

P/N	Memory Interface	Comments
KSZ8381Q	SDR	Narrowband
KSZ8382Q	SDR	Wideband
KSZ8382L	DDR2	Wideband

- Package: KSZ8381Q - 128-pin PQFP, KSZ8382L - 176-pin LQFP
- Power: 3.3V, 1.2V; I/O: 3.3V (SDRAM support with 3.3V, 1.2V)
- Industrial temperature range: –40°C to +85°C
- Interfaces: GPIO, UART, JTAG , PCM

LAN Solutions Selection Guide

PHYs

Bold = New P/N	Copper Support	Fiber Support	Interface MII	 RMII	 SMII	 GMII	 RGMII	Suppy Voltage (V)	Internal LDO	V_{DD} I/O (V)	LinkMD® (Cable Diag)	Temp Range	802.3az EEE	Int Term	Package
KSZ9031MNX	10/100/1000		X			X		1.2, 2.5/3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	X	8x8
KSZ9031RNX	10/100/1000						X	1.2, 2.5/3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	X	7x7
KSZ8091RNA	10/100			X				3.3	X	1.8/2.5/3.3	X	C, I	X	X	4x4
KSZ8091RND	10/100			X				3.3	X	1.8/2.5/3.3	X	C	X	X	4x4
KSZ8091MNX	10/100		X					3.3	X	1.8/2.5/3.3	X	C, I	X	X	5x5
KSZ8091RNB	10/100			X				3.3	X	1.8/2.5/3.3	X	C, I	X	X	5x5
KSZ8091MLX	10/100		X					3.3	X	1.8/2.5/3.3	X	C, I	X	X	LQFP-48
KSZ8081RNA	10/100			X				3.3	X	1.8/2.5/3.3	X	C, I		X	4x4
KSZ8081RND	10/100			X				3.3	X	1.8/2.5/3.3	X	C		X	4x4
KSZ8081MNX	10/100		X					3.3	X	1.8/2.5/3.3	X	C, I		X	5x5
KSZ8081RNB	10/100			X				3.3	X	1.8/2.5/3.3	X	C, I		X	5x5
KSZ8081MLX	10/100		X					3.3	X	1.8/2.5/3.3	X	C, I		X	LQFP-48
KSZ8051MNLU	10/100		X					3.3	X	1.8/2.5/3.3	X	A		X	5x5
KSZ8051RNLU	10/100			X				3.3	X	1.8/2.5/3.3	X	A		X	5x5
KSZ8041NLJ	10/100		X	X				3.3	X	3.3		J			5x5
KSZ8041FTL	10/100	100FX	X	X	X			3.3	X	3.3	X	C, I			TQFP-48

C (Commercial) 0°C to +70°C
I (Industrial) –40°C to +85°C
A (Automotive) –40°C to +85°C
J (Extended) –40°C to +125°C

Controllers

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	Interface 8/16-Bit	 32-Bit	 SPI	 PCI	Buffer Size Rx (KB)	 Tx (KB)	Supply Voltage (V)	Internal LDO	V_{DD} I/O (V)	LinkMD® Cable Diag	Temp Range	Repeater Mode	802.3az EEE	Int Term	Package
KSZ8851-16MLL	1	10/100		X				12	6	3.3	X	1.8/2.5/3.3	X	A, C, I				LQFP-48
KSZ8851-16MLLJ	1	10/100		X				12	6	3.3	X	1.8/2.5/3.3	X	J				LQFP-48
KSZ8851-16MQL	1	10/100		X				12	6	3.3	X	1.8/2.5/3.3	X	C, I				PQFP-128
KSZ8851-32MQL	1	10/100			X			12	6	3.3	X	1.8/2.5/3.3	X	C, I				PQFP-128
KSZ8851SNL	1	10/100				X		12	6	3.3	X	1.8/2.5/3.3	X	C, I				5x5
KSZ8841-PMQL	1	10/100					X	4	4	3.3	X	3.3/5.0	X	C, I				PQFP-128
KSZ8852HLE	2	10/100		X				12	6	3.3	X	1.8/2.5/3.3	X	W,Y		X	X	LQFP-64
KSZ8842-32MQL	2	10/100			X			4	4	3.3	X	3.3/5.0	X	C	X			PQFP-128
KSZ8842-32MVL	2	10/100			X			4	4	3.3	X	3.3/5.0	X	C, I	X			LQFP-128
KSZ8842-PMQL	2	10/100					X	4	4	3.3	X	3.3/5.0	X	C, I	X			PQFP-128
KSZ8842-PMBL	2	10/100					X	4	4	3.3	X	3.3/5.0	X	A, C	X			LFBGA-100
KSZ8862-16MQL-FL	2	10/100	10FL	X				4	4	3.3	X	3.3/5.0	X	C				PQFP-128
KSZ8862-16MQL-FX	2	10/100	100FX	X				4	4	3.3	X	3.3/5.0	X	C				PQFP-128
KSZ8862-16MQL-SX	2	10/100	100SX	X				4	4	3.3	X	3.3/5.0	X	C				PQFP-128
KSZ8862-32MQL-FL	2	10/100	10FL		X			4	4	3.3	X	3.3/5.0	X	C				PQFP-128
KSZ8862-32MQL-FX	2	10/100	100FX		X			4	4	3.3	X	3.3/5.0	X	C				PQFP-128
KSZ8862-32MQL-SX	2	10/100	100SX		X			4	4	3.3	X	3.3/5.0	X	C				PQFP-128

C (Commercial) 0°C to +70°C
I (Industrial) –40°C to +85°C
W (Industrial) –40°C to +105°C
A (Automotive) –40°C to +85°C
J (Extended) –40°C to +125°C

LAN Solutions Selection Guide

Switches

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	Interface MII	 RMII	 SNI	 8/16-Bit	 32-Bit	 PCI	Supply Voltage (V)	Internal LDO	V_{DD} I/O (V)	LinkMD® Cable Diag	Temp Range	Int Term	Package
KSZ8795CLX	5	10/100 (4)		X	X					3.3		1.8/2.5/3.3	X	C, I	X	LQFP-80
KSZ8794CNX	4	10/100 (3)		X	X					3.3		1.8/2.5/3.3	X	C, I	X	QFN-64
KSZ8775CLX	5	10/100 (3)		X	X					3.3		1.8/2.5/3.3	X	C, I	X	LQFP-80
KSZ8765CLX	5	10/100 (2)	100FX (2)	X	X					3.3		1.8/2.5/3.3	X	C, I	X	LQFP-80
KSZ8895MQX	5	10/100 (5)		X(2)		X				3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	PQFP-128
KSZ8895RQX	5	10/100 (5)			X(2)	X				3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	PQFP-128
KSZ8895FQX	5	10/100 (3)	100FX (2)	X(2)						3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	PQFP-128
KSZ8895ML	5	10/100 (5)		X(2)		X				3.3	X cntlr	1.8/2.5/3.3	X	C, I	X	LQFP-128
KSZ8864CNX	4	10/100(2)		X(2)	X(2)					3.3		1.8/2.5/3.3	X	A, C, I	X	QFN-64
KSZ8895MLUB	5	10/100 (4)		X(2)						3.3	X cntlr	1.8/2.5/3.3	X	A	X	LQFP-128
KSZ8864RM-NUB	4	10/100(2)		X(2)	X(2)					3.3		1.8/2.5/3.3	X	A	X	QFN-64
KSZ8863MLL	3	10/100 (2)		X						3.3	X	1.8/2.5/3.3	X	C, I		LQFP-48
KSZ8863RLL	3	10/100 (2)			X					3.3	X	1.8/2.5/3.3	X	C, I		LQFP-48
KSZ8863FLL	3	10/100 (1)	100FX(1)	X						3.3	X	1.8/2.5/3.3	X	C, I		LQFP-48
KSZ8873MLL	3	10/100 (2)		X						3.3	X	1.8/2.5/3.3	X	A, C, I		LQFP-64
KSZ8873MLLJ	3	10/100 (2)		X						3.3	X	1.8/2.5/3.3	X	J		LQFP-64
KSZ8873RLL	3	10/100 (2)			X					3.3	X	1.8/2.5/3.3	X	A,C, I		LQFP-64
KSZ8873FLL	3		100FX (2)	X						3.3	X	1.8/2.5/3.3	X	C, I		LQFP-64
KSZ8873MML	3	10/100 (1)		X(2)						3.3	X	1.8/2.5/3.3	X	C, I		LQFP-64
KSZ8997	8	10/100 (8)								2.1		3.3		C		PQFP-128
KSZ8999	9	10/100 (8)	100FX (8)	X		X				2.1		3.3		C, I		PQFP-208
KSZ8852HLE	2	10/100 (2)					X			3.3	X	1.8/2.5/3.3	X	W,Y	X	LQFP-64
KSZ8842-32MQL	2	10/100 (2)						X		3.3	X	3.3/5.0	X	C		PQFP-128
KSZ8842-32MVL	2	10/100 (2)						X		3.3	X	3.3/5.0	X	C, I		LQFP-128
KSZ8842-PMQL	2	10/100 (2)							X	3.3	X	3.3/5.0	X	C, I		PQFP-128
KSZ8842-PMBL	2	10/100(2)							X	3.3	X	3.3/5.0	X	C, A		LFBGA-100
KSZ8862-16MQL	2	10/100	FL,SX,FX				X			3.3	X	3.3/5.0		C		PQFP-128
KSZ8862-32MQL	2	10/100	FL,SX,FX					X		3.3	X	3.3/5.0		C		PQFP-128

C (Commercial)	0°C to +70°C	A (Automotive)	–40°C to +85°C
I (Industrial)	–40°C to +85°C	J (Extended)	–40°C to +125°C
W (Industrial)	–40°C to +105°C		

IEEE 1588 Ethernet

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	MII	Interface RMII	8/16-Bit	# of GPIO	Supply Voltage (V)	Internal LDO	V_{DD} I/O (V)	LinkMD® (Cable Diag)	Temp Range	802.3az EEE	Int Term	Package
KSZ8463ML	2	10/100 (2)		X			12	3.3	X	1.8/2.5/3.3	X	I	X	X	LQFP-64
KSZ8463RL	2	10/100 (2)			X		12	3.3	X	1.8/2.5/3.3	X	I	X	X	LQFP-64
KSZ8462HL	2	10/100 (2)				X	7	3.3	X	1.8/2.5/3.3	X	I	X	X	LQFP-64
KSZ8441HL	1	10/100				X	7	3.3	X	1.8/2.5/3.3	X	I	X	X	LQFP-64
KSZ8463FML	2	10/100 (2)	100FX(2)	X			12	3.3	X	1.8/2.5/3.3	X	I	X	X	
KSZ8463FRL	2	10/100 (2)	100FX(2)		X		12	3.3	X	1.8/2.5/3.3	X	I	X	X	
KSZ8462FHL	2	10/100 (2)	100FX(2)			X	7	3.3	X	1.8/2.5/3.3	X	I	X	X	
KSZ8441FHL	1	10/100	100FX			X	7	3.3	X	1.8/2.5/3.3	X	I	X	X	

C (Commercial)	0°C to +70°C	A (Automotive)	–40°C to +85°C
I (Industrial)	–40°C to +85°C	J (Extended)	–40°C to +125°C

LAN Solutions Selection Guide

ARM-Based Ethernet SoC

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	# of PCI Ports	Processor Speed	UART(s) Speed	USB 2.0	SDIO	GPIO	Counter Timer	Other I/O	DES/3DES Security Engine	LinkMD® Cable Diag	Supply Voltage	Temp Range	Package
KSZ8695PX	5	10/100(x5)	100FX(x2)	1	ARM922T 166MHz	1 x 115Kbps			16	2 x 32-bit				1.8, 3.3	C	PQFP-208
KSZ8695P	5	10/100(x5)	100FX(x2)	3	ARM922T 166MHz	1 x 115Kbps			16	2 x 32-bit				1.8, 3.3	C, I	PBGA-289
KSZ8695X	5	10/100(x5)	100FX		ARM922T 166MHz	1 x 115Kbps			8	2 x 32-bit				1.8, 3.3	C	PBGA-289
KSZ8692PB	2	10/100 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2, 2.5, 3.3	C, I	PBGA-400 (24x24)
KSZ8692PB-S	2	10/100 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2, 2.5, 3.3	C	PBGA-400 (17x17)
KSZ8692XPB	2	10/100 MAC		1	ARM922T 250MHz	4 x 10Mbps	2 x Host/Device 480Mbps		20	2 x 32-bit	I2S, SPI, I2C		X	1.2, 2.5, 3.3	C	PBGA-400 (24x24)
KSZ9692PB	2	10/100/1000 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2, 2.5, 3.3	C, I	PBGA-400 (24x24)
KSZ9692PB-S	2	10/100/1000 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2, 2.5, 3.3	C	PBGA-400 (17x17)
KSZ9692XPB	2	10/100/1000 MAC		1	ARM922T 250MHz	2 x 10Mbps	2 x Host/Device 480Mbps		20	2 x 32-bit	I2S, SPI, I2C		X	1.2, 2.5, 3.3	C	PBGA-400 (24x24)

C (Commercial)	0°C to +70°C
I (Industrial)	–40°C to +85°C
A (Automotive)	–40°C to +85°C
J (Extended)	–40°C to +125°C

Voice Over IP (VoIP) SoC

Bold = New P/N	# of External Ethernet Ports	Processor Support	Bands Narrow/ Wide	Avail. Switch 10/100 Ports	Memory Controller	Memory Size	UART Port	LCD Interface	LED Dedicated	# of Dedicated GPIO	# of Shared GPIO	Supply Voltage (V)	Temp Range	802.3az EEE	Power Consp	Package
KSZ8381Q	2	MIPS32 M4KEc	NB Only	2	SDR	8 MByte to 32 MByte	1	Serial / Parallel	No	0	18	3.3 , 1.2	C	Yes	350mW to 1.4W	PQFP-128
KSZ8382Q	2	MIPS32 M4KEc	NB + WB	2	SDR	8 MByte to 32 MByte	1	Serial / Parallel	No	0	18	3.3 , 1.2	C	Yes	350mW to 1.4W	PQFP-128
KSZ8382L	2	MIPS32 M4KEc	NB + WB	2	DDR2	256 MBit to 2 GBit	1	Serial / Parallel	Yes	13	38	3.3 , 1.8, 1.2, 0.9V	C	Yes	350mW to 1.4W	LQFP-176
KSZ8342Q	2	MIPS32 M4KEc	NB + WB	2	SDR	8 MByte to 32 MByte	1	Serial / Parallel	No	0	7	3.3 , 1.2	C,I	Yes	350mW to 1.4W	PQFP-128

C (Commercial)	0°C to +70°C
I (Industrial)	–40°C to +85°C
A (Automotive)	–40°C to +85°C
J (Extended)	–40°C to +125°C

PL902xxx
JitterBlocker

The PL902xxx series is a low-power, small form-factor, high-performance OTP-based device and a member of Micrel's JitterBlocker, factory programmable jitter attenuators. The JitterBlocker product family cleans any deterministic jitter, thereby improving the peak-to-peak jitter, accumulated jitter, and even the phase noise. The PL902xxx is capable of reducing thousands of picoseconds of period jitter in a clock to a level below 100ps peak-to-peak, making that clock usable for many more applications.

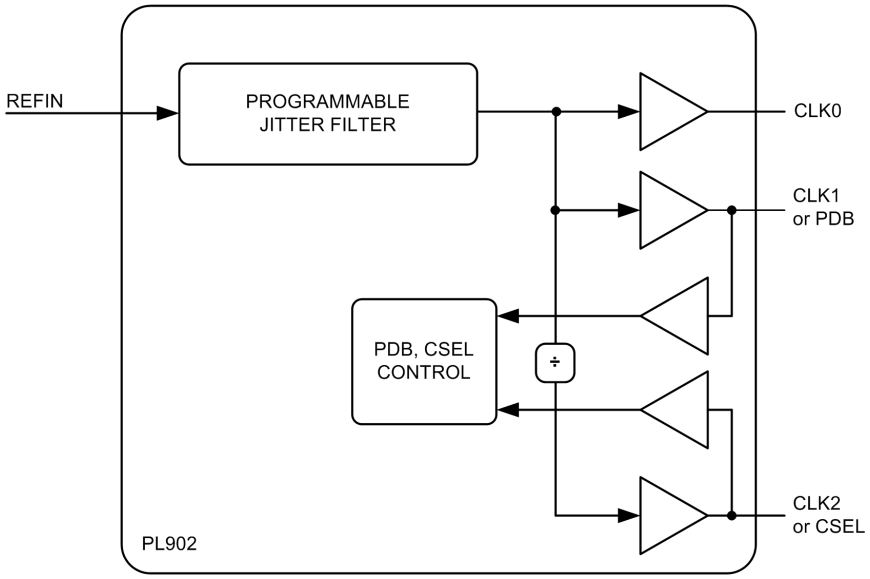
The PL902xxx operates on a single 2.5V or 3.3V supply, consumes little power, and is housed in a small SOT23 package for a broad range of applications. Programmable I/O pins can be configured as output enable (OE), configuration select (CSEL), power down (PDB) input, or CLK1 (2) output. The power down feature of PL902xxx, when activated, allows the IC to consume less than 10µA of power, while its programming flexibility allows filtering of any clock frequency, up to 200MHz.

Features

- Lowest power and smallest programmable jitter attenuator
- Input/output frequency up to 200MHz
- I/O pins can be configured as output enable (OE), frequency switching (CSEL), power down (PDB) input, or CLK1(2) output.
- <10µA current consumption with PDB active
- Operating temperature range from –40°C to +85°C
- Available in a 6-pin SOT23 GREEN/RoHS-compliant package
- Related devices:
  - PL903xxx: Single-ended input, differential output, and phase noise cleaning
  - PL904xxx: Differential input, two differential outputs, and phase noise cleaning

Applications

- IEEE1588 GPIO clock cleanup
- FPGA-generated clock cleanup
- 1/10/40/100 Gigabit Ethernet (GbE)
- SONET/SDH
- PCI Express
- CPRI/OBSAI wireless base stations
- Fibre Channel
- SAS/SATA
- DIMM



MX55/MX57
Ultra-Low Jitter 3.2mm x 5mm or 5mm x 7mm Crystal Oscillators

The MX55/MX57 product line is an ultra-low jitter family of industry-standard crystal oscillators (XO) designed to maximize performance in networking, storage, server, and telecommunications equipment. With typical phase jitter ranges from 160fs to 230fs depending on output format, output frequency, and package, these devices improve signal-to-noise ratio and bit error rate in high line rate applications such as 10/40/100GEthernet, optical communications, PCI Express, Fibre Channel/SAS, CPRI/OBSAI, XAUI, and backplane SERDES links.

The MX55 is an industry leading ultra-low jitter XO family available in a 3.2mm x 5mm package. The MX57 is an industry leading ultra-low jitter XO available in 5mm x 7mm package. These devices meet ±50ppm total stability across the -40°C to +85°C operating temperature range using proven high reliability assembly methods that improve long term reliability and minimize aging drift compared to traditional XO assembly processes.

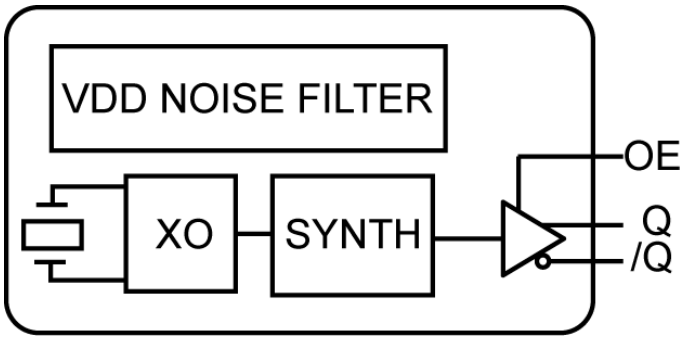
With programmable output format and OE options, these XOs can be configured to be footprint-compatible with any 6-pin XO available today. Standard options and frequencies are available and additional options and frequencies can be requested using the online configuration tool http://clockworks.micrel.com/micrel.

Features

- Ultra-low jitter ($170fs_{RMS}$ from 12kHz to 20MHz)
- Low phase noise and low spurs
- Compact 3.2mm x 5mm and 5mm x 7mm packages
- Short lead time
- High PSRR
- Broad programmable options
- Industry standard footprint

Applications

- 10/40/100 Gigabit Ethernet (GbE)
- Optical Communications
- SAS
- PCI Express



TimeFlash
Frequency Programming Kit for PureSilicon™ Oscillators

This simple Windows®-based USB kit allows the user to custom program and verify any DSC8xxx field programmable oscillator for any frequency. CMOS, LVPECL, LVDS, and HCSL options are supported in all standard sizes, ppm, and temperature ranges with the same performance of fixed-frequency parts.

Long crystal oscillator lead times are eliminated when programmable parts are available. Blank programmable oscillators and socket adapter boards are available separately.

Ordering Information

TimeFlash Kit

- DSC-PROG-TimeFlash-Kit (includes all four adapter boards)

TimeFlash Adapter Boards

- DSC-PROG-7050 - Universal 7mm x 5mm Package Size TimeFlash Adapter
- DSC-PROG-5032 - Universal 5mm x 3.2mm Package Size TimeFlash Adapter
- DSC-PROG-3225 - Universal 3.2mm x 2.5mm Package Size TimeFlash Adapter
- DSC-PROG-2520 - Universal 2.5mm x 2.0mm Package Size TimeFlash Adapter

Parts Compatible with TimeFlash Kit

- DSC8001 - Programmable Low-Power Precision CMOS Oscillator
- DSC8002 - Programmable Low-Power CMOS Oscillator
- DSC8003 - Programmable Low-Power Precision CMOS Oscillator
- DSC8004 - Programmable Low-Power Precision CMOS Oscillator
- DSC8101 - Programmable Low-Power Precision CMOS Oscillator
- DSC8102 - Programmable Low-Power Precision LVPECL Oscillator
- DSC8103 - Programmable Low-Power Precision LVDS Oscillator
- DSC8104 - Programmable Low-Power Precision HCSL Oscillator
- DSC8121 - Programmable Low-Power Precision CMOS Oscillator
- DSC8122 - Programmable Low-Power Precision LVPECL Oscillator
- DSC8123 - Programmable Low-Power Precision LVDS Oscillator
- DSC8124 - Programmable Low-Power Precision HCSL Oscillator

Note: DSC800x parts are blank versions of DSC100x. DSC81xx parts are blank versions of DSC11xx.

Timing and Communications Selection Guide

PureSilicon™ Oscillators

Bold = New P/N	Supply Voltage (V)	Output Type	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Description	EVB Available	Package
DSC1001	1.7-3.6	CMOS	1	150	15pF Load Low Power	Yes	2.5x2.0 to 5.0x7.0
DSC1003	1.7-3.6	CMOS	1	150	25pF Load Low Power	Yes	2.5x2.0 to 5.0x7.0
DSC1004	1.7-3.6	CMOS	1	150	40pF Load Low Power	Yes	2.5x2.0 to 5.0x7.0
DSC1018	1.65-1.95	CMOS	1	150	Ultra Low Power (3mA)	Yes	2.5x2.0 to 5.0x7.0
DSC1025	2.3-3.7	CMOS	1	150	Ultra Low Power (3mA)	Yes	2.5x2.0 to 5.0x7.0
DSC1028	2.6-3.0	CMOS	1	150	Ultra Low Power (3mA)	Yes	2.5x2.0 to 5.0x7.0
DSC1030	2.7-3.3	CMOS	1	150	Ultra Low Power (3mA)	Yes	2.5x2.0 to 5.0x7.0
DSC1033	3.0-3.6	CMOS	1	150	Ultra Low Power (3mA)	Yes	2.5x2.0 to 5.0x7.0
DSC1101/DSC1121	2.25-3.6	CMOS	2.30	170	Low Jitter (0.5ps RMS)	Yes	2.5x2.0 to 5.0x7.0
DSC1102/DSC1122	2.25-3.6	LVPECL	2.30	425	Low Jitter (0.5ps RMS)	Yes	2.5x2.0 to 5.0x7.0
DSC1103/DSC1123	2.25-3.6	LVDS	2.30	425	Low Jitter (0.5ps RMS)	Yes	2.5x2.0 to 5.0x7.0
DSC1104/DSC1124	2.25-3.6	HCSL	2.30	425	Low Jitter (0.5ps RMS)	Yes	2.5x2.0 to 5.0x7.0

Crystal-less™ Clock Generators (Configurable)

Bold = New P/N	Supply Voltage (V)	Output Type	Output(s) (MHz)	Freq Stability (ppm)	Op Temp (max °C)	Jitter (12kHz-20MHz)	Programmability	Applications	Package
DSC2010	2.25-3.6v	1-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Consumer Electronics
DSC2011	2.25-3.6v	2-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Consumer Electronics
DSC2020	2.25-3.6v	1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2021	2.25-3.6v	1-LVPECL, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2022	2.25-3.6v	2-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2030	2.25-3.6v	1-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Video
DSC2031	2.25-3.6v	1-LVDS, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Video
DSC2032	2.25-3.6v	1-LVDS, 1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Video
DSC2033	2.25-3.6v	2-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Video
DSC2040	2.25-3.6v	1-HCSL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2041	2.25-3.6v	1-HCSL, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2042	2.25-3.6v	1-HCSL, 1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2043	2.25-3.6v	1-HCSL, 1-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2044	2.25-3.6v	2-HCSL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	Computing, networking, storage, industrial
DSC2210	2.25-3.6v	1-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, Consumer Electronics, storage
DSC2211	2.25-3.6v	2-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, Consumer Electronics, storage
DSC2220	2.25-3.6v	1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2221	2.25-3.6v	1-LVPECL, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2222	2.25-3.6v	2-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2230	2.25-3.6v	1-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Video
DSC2231	2.25-3.6v	1-LVDS, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Video
DSC2232	2.25-3.6v	1-LVDS, 1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Video
DSC2233	2.25-3.6v	2-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Video
DSC2240	2.25-3.6v	1-HCSL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2241	2.25-3.6v	1-HCSL, 1-CMOS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2242	2.25-3.6v	1-HCSL, 1-LVPECL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2243	2.25-3.6v	1-HCSL, 1-LVDS	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2244	2.25-3.6v	2-HCSL	2.3-460	10-50	-40 to 85	1.7ps (RMS)	14QFN (3.2x2.5)	SPI	Computing, networking, storage, industrial
DSC2311	2.25-3.6v	2-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	6QFN (2.5x2.0)	Factory	Consumer Electronics
DSC400	2.25-3.6V	2-4 CMOS, HCSL, LVPECL, LVDS	2.3-460	25-50	-40 to 85	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	Computing, networking, storage, industrial, consumer electronics, video

Timing and Communications Selection Guide

Crystal-less™ Clock Generators (Application-Specific)

Bold = New P/N	Supply Voltage	Output Type	Output(s) (MHz)	Freq Stability (ppm)	Op Temp (max °C)	Jitter (12kHz-20MHz)	Programmability	Applications	Package
DSC501-05	2.25-3.6v	3-CMOS, 1-HCSL	60, 66.6667, 100	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	Printers
DSC510-05	2.25-3.6v	4- Any Differential	25.	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	Networking
DSC511-03	2.25-3.6v	2-CMOS	2.3-170	10-50	-55 to 125	1.7ps (RMS)	6QFN (2.5x2.0)	Factory	Consumer Electronics
DSC511-05	2.25-3.6v	4- Any Differential	56.6	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	Networking
DSC512-05	2.25-3.6v	2-CMOS, 2-LVDS	14, 16, 50	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	Networking
DSC513-05	2.25-3.6v	4- Any Differential	200.	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	Networking
DSC520-03	2.25-3.6v	2-CMOS	25, 27	25-50	-55 to 125	1.7ps (RMS)	6QFN (2.5x2.0)	Factory	VoIP
DSC520-04	2.25-3.6v	3-CMOS	24, 25, 27	25-50	-55 to 125	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	VoIP
DSC520-05	2.25-3.6v	4-CMOS	24, 25, 27	25-50	-55 to 125	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	VoIP
DSC521-04	2.25-3.6v	3-CMOS	20, 25, 27	25-50	-55 to 125	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	VoIP
DSC531-03	2.25-3.6v	1-CMOS, 1-LVPECL	100, 150	10-50	-40 to 85	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	SAS, SATA
DSC533-05	2.25-3.6v	4-LVPECL	25, 100, 125, 133.333	50-100	-40 to 85	1.7ps (RMS)	20QFN (5.0x3.2)	Factory	SAS
DSC557-03	2.25-3.6v	2-HCSL	100.	50-100	-40 to 105	1.7ps (RMS)	14QFN (3.2x2.5), 16TSSOP	Fixed	PCI Express
DSC557-04	2.25-3.6v	3-HCSL	100.	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Fixed	PCI Express
DSC557-05	2.25-3.6v	4-HCSL	100.	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Fixed	PCI Express
DSC558-03	2.25-3.6v	2-HCSL	100.	50-100	-40 to 105	1.7ps (RMS)	14QFN (3.2x2.5), 16TSSOP	Fixed	PCI Express
DSC558-05	2.25-3.6v	4-HCSL	100.	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Fixed	PCI Express
DSC570-05	2.25-3.6v	4- Any Differential	156.25	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	XAUI
DSC571-04	2.25-3.6v	3- Any Differential	100, 125, 156.25	50-100	-40 to 85	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	XAUI, SGMI, SRIO
DSC572-05	2.25-3.6v	4-LVPECL	155.25, 156.25	50-100	-40 to 105	1.7ps (RMS)	20QFN (5.0x3.2)	Pin-Configurable	XAUI, GPON
DSC591-03	2.25-3.6v	2-CMOS	25, 50	25-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	BMC - Server
DSC592-03	2.25-3.6v	2-CMOS	50.	25-50	-55 to 125	1.7ps (RMS)	14QFN (3.2x2.5)	Pin-Configurable	BMC - Server

Multi-Output Crystal Oscillators

Bold = New P/N	Supply Voltage	Output Type	Output(s) (MHz)	Typ Jitter (12kHz-20MHz)	Options FSEL	Options OE	Applications	Package
MX85xxx	2.5/3.3V	PECL, LVDS, HCSL, CMOS	<840	160fs	X	X	1/10/40/100GbE, PCIe, SONET, SAS/SATA	5x7

Ultra-Low Jitter Crystal Oscillators

Bold = New P/N	Output Type	Output(s) (MHz)	Typ Jitter (12kHz-20MHz)	Options OE Pin	Options OE Active	Stability PPM	Applications	Package
MX553ABB212M500	LVDS	212.50	175fs	1	High	±50	Fibre Channel 10G/12G SERDES	5x3.2
MX553BBA156M250	LVPECL	156.25	175fs	1	High	±50	10/40/400 Gigabit Ethernet, Fibre Channel 10G/12G SERDES	5x3.2
MX555ABA25M0000	LVPECL	25.00	220fs	1	High	±50		5x3.2
MX573ABA212M500	LVPECL	212.50	175fs	1	High	±50	Fibre Channel 10G/12G SERDES	7x5
MX573BBA156M250	LVPECL	156.25	175fs	1	High	±50	10/40/400 Gigabit Ethernet, Fibre Channel 10G/12G SERDES	7x5
MX573BBA312M500	LVPECL	312.50	175fs	1	High	±50	10/40/400 Gigabit Ethernet, Fibre Channel 10G/12G SERDES	7x5
MX573BBB156M250	LVDS	156.25	175fs	1	High	±50	10/40/400 Gigabit Ethernet, Fibre Channel 10G/12G SERDES	7x5
MX575ABA100M000	LVPECL	100.00	220fs	1	High	±50	PCI-Express, Storage	7x5
MX555ABH25M0000	LVCMOS	25.00	220fs	1	Low	±50		5x3.2

Fanout Buffers

Bold = New P/N	Fanout	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Max Data Rate (Gbps)	12KHz-20MHz Typ Jitter (fs)* @ 622MHz	Options					Package
									OE	RPE	FSI	Input Mux	Input EQ	
SY75578L	1:8	HCSL/LVDS	HCSL/LVDS	3.3V	3.3V	0.3	-		X			X		5x5 QFN32
SY75576L	1:4	HCSL/LVDS	HCSL/LVDS	3.3V	3.3V	0.3	-		X			X		TSSOP-20
SY73551L	1:4	LVCMOS/ LVTTL	LVCMOS/ LVTTL	3.3V	3.3V	0.16	-		X					SOIC-8
PL123-02N	1:2	LVCMOS	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.2	-		X					DFN-6L
PL123-05N	1:5	LVCMOS	LVCMOS	2.5V, 3.3V	2.5/3.3V	0.13	-							SOP-8
PL123-09N	1:9	LVCMOS	LVCMOS	2.5V, 3.3V	2.5/3.3V	0.13	-							TSSOP-16
PL133-27	1:2	Multiple	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.15	-		X					DFN-6L
PL133-37	1:3	Multiple	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.15	-							SOT23-6
PL133-47	1:4	LVCMOS	LVCMOS	2.5V, 3.3V	2.5/3.3V	0.15	-							SOP-8
PL133-67	1:6	LVCMOS	LVCMOS	2.5V, 3.3V	2.5/3.3V	0.15	-		X					TSSOP-16
PL133-97	1:9	LVCMOS	LVCMOS	2.5V, 3.3V	2.5/3.3V	0.15	-		X					QFN-16L
PL135-27	1:2	XTAL	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.04	-							DFN-6L
PL135-37	1:3	XTAL	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.04	-		X					SOP-8
PL135-47	1:4	XTAL	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.04	-		X					QFN-16L
PL135-67	1:6	XTAL	LVCMOS	1.8V ~ 3.3V	1.8/2.5/3.3V	0.04	-		X					QFN-16L
PL138-18	2:10	LVDS/LVPECL/ LVHSTL/SSTL/ HCSL	LVPECL	2.5V, 3.3V	2.5/3.3V	0.7	-					X		LQFP-32
PL138-28	1:2	LVDS/LVPECL/ LVHSTL/SSTL/ HCSL	LVPECL	2.5V, 3.3V	2.5/3.3V	1	-							SOP-8
PL138-48	2:4	LVDS/LVPECL/ LVHSTL/SSTL/ HCSL	LVPECL	2.5V, 3.3V	2.5/3.3V	1	-		X			X		TSSOP-20
PL138-58	2:4	LVCMOS	LVPECL	2.5V, 3.3V	2.5/3.3V	0.26	-		X			X		3x3.5
PL138-98	2:9	LVDS/LVPECL/ LVHSTL/SSTL/ HCSL	LVPECL	2.5V, 3.3V	2.5/3.3V	0.7	-		X			X		LQFP-32
SY58608U	1:2	ANY	LVDS	2.5V	2.5V	2.0	3.2				X			3x3
SY58606U	1:2	ANY	CML	2.5/3.3V	2.5/3.3V	2.5	4.25				X			3x3
SY58607U	1:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	3.2				X			3x3
SY89311U	1:2	ECL/PECL/ LVPECL/LVECL	ECL/PECL/ LVPECL/ LVECL	2.5/3.3/5V	2.5/3.3/5V	3.0	-							2x2
SY89851U	1:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.0	2.5							3x3
SY54011R	1:2	ANY	CML	2.5V	1.2/1.8V	3.2	3.2				X			3x3
SY54020AR	1:4	ANY	CML	2.5V	1.2/1.8V	3.2	3.2		X					3x3
SY54020R	1:4	ANY	CML	2.5V	1.2/1.8V	2.5	3.2		X		X			3x3
SY56011R	1:2	ANY	CML	2.5V	1.2/1.8/2.5V	4.5	6.4						X	3x3
SY58012U	1:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	5.0	5							3x3
SY58013U	1:2	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	6.0	10.7							3x3
SY58011U	1:2	ANY	CML	2.5/3.3V	2.5/3.3V	7.0	10.7						X	3x3
SY89843U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-			X	X	X		4x4
SY89844U	2:2	ANY	LVDS	2.5V	2.5V	1.5	-			X	X	X		4x4
SY89473U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.0	2.5					X		4x4
SY89474U	2:2	ANY	LVDS	2.5V	2.5V	2.5						X		4x4
SY89645L	1:4	LVCMOS/ LVTTL	LVDS	3.3V	3.3V	0.65	-							TSSOP-16
SY89831U	1:4	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.0	-	62						3x3
SY89832U	1:4	ANY	LVDS	2.5V	2.5V	2.0	-							3x3

Fanout Buffers

Bold = New P/N	Fanout	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Max Data Rate (Gbps)	12KHz-20MHz Typ Jitter (fs)* @ 622MHz	Options					Package
									OE	RPE	FSI	Input Mux	Input EQ	
SY89833AL	1:4	ANY	LVDS	3.3V	3.3V	2.0	-							3x3
SY89833L	1:4	ANY	LVDS	3.3V	3.3V	2.0	-							3x3
SY89854U	1:4	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.5	-							3x3
SY58021U	1:4	ANY	LVPECL	2.5/3.3V	2.5/3.3V	4.0	5							3x3
SY56020R	1:4	ANY	CML	2.5V	1.2/1.8/2.5V	4.5	6.4		X				X	3x3
SY56020XR	1:4	ANY	CML	2.5V	1.2/1.8/2.5V	4.5	6.4		X				X	3x3
SY58022U	1:4	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	5.5	10							3x3
SY58020U	1:4	ANY	CML	2.5/3.3V	2.5/3.3V	6.0								3x3
SY898535L	2:4	LVCMOS/ LVTTL	LVPECL	3.3V	3.3V	0.24	-					X		TSSOP-20
SY898535XL	2:4	XTAL/LVCMOS	LVPECL	3.3V	3.3V	0.24	-					X		TSSOP-20
SY898533L	2:4	Multiple	LVPECL	3.3V	3.3V	0.65	-					X		TSSOP-20
SY89834U	2:4	LVTTL	LVPECL	2.5/3.3V	2.5/3.3V	1.0	-					X		3x3
SY89830U	2:4	ECL/PECL/ LVPECL/LVECL	ECL/PECL/ LVPECL/ LVECL	2.5/3.3/5V	2.5/3.3/5V	2.5	-					X		TSSOP-16
SY89846U	2:5	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-		X		X	X		5x5
SY89847U	2:5	ANY	LVDS	2.5V	2.5V	1.5	-		X		X	X		5x5
SY89856U	2:6	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.0	-					X		5x5
SY58035U	2:6	ANY	LVPECL	2.5/3.3V	2.5/3.3V	4.5	-					X		5x5
SY58034U	2:6	ANY	CML	2.5/3.3V	2.5/3.3V	6.0	-					X		5x5
SY58036U	2:6	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	6.0	-					X		5x5
SY56034AR	2:6	ANY	CML	2.5V	1.2/1.8/2.5V	5.0	6.4					X		5x5
SY89200U	1:8	ANY	LVDS	2.5V	2.5V	1.5	-							5x5
SY89202U	1:8	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-							5x5
SY89858U	1:8	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.0	-							5x5
SY58032U	1:8	ANY	LVPECL	2.5/3.3V	2.5/3.3V	4.0	-							5x5
SY58031U	1:8	ANY	CML	2.5/3.3V	2.5/3.3V	5.0	-							5x5
SY58033U	1:8	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	5.5	-							5x5
SY89837U	2:8	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-			X	X	X		5x5
SY89838U	2:8	ANY	LVDS	2.5V	2.5V	1.5	-			X	X	X		5x5
SY89843U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-			X		X		4x4
SY89808L	2:9	LVPECL/HSTL	HSTL	3.3V	3.3V	0.5	-		X			X		TQFP-32
SY89809L	2:9	LVPECL/HSTL	HSTL	3.3V	3.3V	0.5	-		X			X		TQFP-32
SY89809AL	2:9	LVPECL/HSTL	HSTL	1.8/3.3V	1.8/3.3V	0.75	-		X			X		TQFP-32
SY898531L	1:9	LVPECL/LVDS/ LVHSTL/CML/ SSTL/HCSL	LVPECL	3.3V	3.3V	0.5	-		X			X		TQFP-32
SY89827L	Dual 1:10	LVPECL/HSTL	HSTL	3.3V	3.3V	0.5	-		X			X		TQFP-64
SY89828L	Dual 1:10	LVPECL/LVDS	LVDS	3.3V	3.3V	1.0	-		X			X		TQFP-64
SY89829U	Dual 1:10	LVPECL/LVDS	LVPECL	2.5/3.3V	2.5/3.3V	1.0	-		X			X		TQFP-64
SY89464U	2:10 RPE	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.0	-			X	X	X		7x7
SY89465U	2:10 RPE	ANY	LVDS	2.5V	2.5V	2.0	-			X	X	X		7x7
SY89112U	2:12	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.0	-					X		7x7
SY89113U	2:12	ANY	LVDS	2.5V	2.5V	1.0	-					X		7x7
SY898530U	1:16	LVDS/LVPECL/ LVHSTL/SSTL/ HCSL	LVPECL	3.3V	3.3V	0.5	-							TQFP-48

Timing and Communications Selection Guide

Fanout Buffers

Bold = New P/N	Fanout	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Max Data Rate (Gbps)	12KHz-20MHz Typ Jitter (fs)* @ 622MHz	Options OE	Options RPE	Options FSI	Input Mux	Input EQ	Package
SY89467U	2:20	ANY	LVPECL	2.5/3.3V	2.5/3.3V	1.5	-				X	X		TQFP-64
SY89468U	2:20	ANY	LVDS	2.5V	2.5V	1.5	-				X	X		TQFP-64
SY89823L	2:22	LVPECL/HSTL	HSTL	3.3V	3.3V	0.5	-		X			X		TQFP-64
SY89824L	2:22	LVPECL/HSTL	HSTL	3.3V	3.3V	0.5	-		X			X		TQFP-64
SY89825U	2:22	LVPECL/LVDS	LVPECL	2.5/3.3V	2.5/3.3V	1.0	-		X			X		TQFP-64
SY89826L	2:22	LVPECL/LVDS	LVDS	3.3V	3.3V	1.0	-		X			X		TQFP-64
SY897132L	Link Replicator	LVPECL	LVPECL	3.3V	3.3V	0.8	1.5		X			X		TSSOP-28

Zero Delay Buffers

Bold = New P/N	# of Outputs	Fanout	ZDB	Input (MHz)	Output Type	Voltage	Package
PL102-10	3	X	X	15-170	LVCMOS	2.5V, 3.3V	SOP-8L, SOT23-6L
PL123-05	5	X	X	10-134	LVCMOS	3.3V	SOP-8L
PL123-09	9	X	X	10-134	LVCMOS	3.3V	TSSOP-16L, SOP-16L
PL123E-05	5	X	X	10-220	LVCMOS	2.5V, 3.3V	SOP-8L
PL123E-09	9	X	X	10-220	LVCMOS	2.5V, 3.3V	TSSOP-16L, SOP-16L
PL123S-05	5	X	X	10-134	LVCMOS	3.3V	SOP-8L
PL123S-09	9	X	X	10-134	LVCMOS	3.3V	TSSOP-16L, SSOP-16L

Clock Dividers

Bold = New P/N	Fanout Buffer	Input	Output	# of Outputs	Supply Voltage	Max Freq (GHz)	Options OE	Options FSI	Input Mux	Description	Package
SY89200U	Y	ANY	LVDS	8	2.5V	1.5	X		X	3 Banks (÷1, ÷2, ÷4) 8 Total	5x5
SY89202U	Y	ANY	LVPECL	8	2.5/3.3V	1.5	X		X	3 Banks (÷1, ÷2, ÷4) 8 Total	5x5
SY89218U	Y	ANY	LVDS	15	2.5V	1.5		X	X	4 Banks (÷1, ÷2, ÷4) 15 Total	TQFP-64
SY89221U	Y	ANY	LVPECL	15	2.5/3.3V	1.5		X	X	4 Banks (÷1, ÷2, ÷4) 15 Total	TQFP-64
SY89228U	N	ANY	LVPECL	1	2.5/3.3V	1.0		X		÷3, ÷5	3x3
SY89229U	N	ANY	LVDS	1	2.5V	1.0		X		÷3, ÷5	3x3
SY89230U	N	ANY	LVPECL	1	2.5/3.3V	3.2		X		÷3, ÷5	3x3
SY89231U	N	ANY	LVDS	1	2.5V	3.2		X		÷3, ÷5	3x3
SY89312V	N	ECL/PECL	ECL/PECL	1	3.3/5V	4.0		X		÷2, 2x2 ver of SY100EP32	2x2
SY89313V	N	ECL/PECL	ECL/PECL	1	3.3/5V	4.0				÷4, 2x2 ver of SY100EP33	2x2
SY89871U	Y	ANY	LVPECL	2	2.5/3.3V	2.5	X			2 Banks (÷1, ÷2, ÷4, ÷8, ÷16)	3x3
SY89872U	Y	ANY	LVDS	2	2.5V	2.0	X			2 Banks (÷1, ÷2, ÷4, ÷8, ÷16)	3x3
SY89873L	Y	ANY	LVDS	2	3.3V	2.0	X			2 Banks (÷1, ÷2, ÷4, ÷8, ÷16)	3x3
SY89874U	Y	ANY	LVPECL	2	2.5/3.3V	2.5	X			÷1, ÷2, ÷4, ÷8, ÷16	3x3
SY89874AU	Y	ANY	LVPECL	2	2.5/3.3V	2.5	X			÷1, ÷2, ÷4, ÷8, ÷16	3x3
SY89875U	Y	ANY	LVDS	2	2.5V	2.0	X			÷1, ÷2, ÷4, ÷8, ÷16	3x3
SY89876L	Y	ANY	LVDS	2	3.3V	2.0	X			÷1, ÷2, ÷4, ÷8, ÷16	3x3

Timing and Communications Selection Guide

Translators

Bold = New P/N	Channels	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Max Prop Delay (ps)	Max Within Device Skew (ps)	Description	Package
PL130-05	Single	Multiple	LVPECL	2.5/3.3V	2.5/3.3V	1.00				3x3
PL130-07	Single	Multiple	LVCMOS	2.5/3.3V	2.5/3.3V	0.20				3x3
PL130-09	Single	Multiple	LVDS	2.5/3.3V	2.5/3.3V	1.00				SOP-8
PL130-58	Single	Multiple	LVPECL	2.5/3.3V	2.5/3.3V	0.26				SOP-8
SY55851/A	Single	PECL/LVPECL/CML	CML	2.5/3.3V	2.5/3.3V	3.00	350			MSOP-10
SY55855V	Dual	PECL/LVPECL/CML	LVDS	3.3/5V	3.3/5V	0.75	700	50		MSOP-10
SY55857L	Dual	ANY	LVPECL	3.3V	3.3V	2.50	400	50		MSOP-10
SY54016R	Single	ANY	CML	2.5V	1.2/1.8/2.5V	2.50	420			2x2
SY54016AR	Single	ANY	CML	2.5V	1.2/1.8/2.5V	2.50	420			2x2
SY56016R	Single	ANY	CML	2.5V	1.2/1.8/2.5V	7.00	80			2x2
SY89222L	Dual	TTL	PECL	3.3V	3.3V	0.40	600	100	2x2 ver of SY100ELT22	2x2
SY89223L	Dual	LVPECL	LVTTL	3.3V	3.3V	0.16	250	30	2x2 ver of SY100ELT23	2x2
SY89321L	Single	LVPECL	LVTTL	3.3V	3.3V	0.28	250		2x2 ver of SY100EPT21	2x2
SY89322V	Dual	LVTTL	LVPECL	3.3/5V	3.3/5V	0.80	600	100	2x2 ver of SY100EPT22	2x2
SY89323L	Dual	LVPECL	LVTTL	3.3V	3.3V	0.28	250	50	2x2 ver of SY100EPT23	2x2
SY89325V	Single	PECL/LVPECL/CML	LVDS	3.3V	3.3V	0.75	700			2x2
SY89327L	Single	ANY	LVPECL	3.3V	3.3V	2.50	400			2x2
SY89328L	Single	LVPECL/LVTTL	LVTTL/LVPECL	3.3V	3.3V	0.28	600			2x2
SY89329V	Single	LVTTL	LVPECL	3.3/5V	3.3/5V	0.80	600		2x2 ver of SY100EPT20	2x2

Multiplexers

Bold = New P/N	Fanout Buffer	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Data Rate (Gbps)	Options				Description	Package
								OE	RPE	FSI	Input EQ		
SY897132L	2:1	LVPECL	LVPECL	3.3V	3.3V	0.8	1.5	X					TSSOP-28
SY89841U	2:1	ANY	LVDS	2.5V	2.5V	1.5	—		X				3x3
SY89840U	2:1	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.0	—			X			3x3
SY89842U	2:1	ANY	CML	2.5/3.3V	2.5/3.3V	2.0	—		X				3x3
SY54017AR	2:1	ANY	CML	2.5V	1.2/1.8V	2.5	3.2						3x3
SY54017R	2:1	ANY	CML	2.5V	1.2/1.8V	2.5	3.2			X			3x3
SY58609U	2:1	ANY	CML	2.5/3.3V	2.5/3.3V	2.5	4.3			X			3x3
SY58610U	2:1	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	3.2			X			3x3
SY58611U	2:1	ANY	LVDS	2.5V	2.5V	2.5	3.2			X			3x3
SY89208V	2:1	ECL/ PECL	ECL/PECL	3.3/5V	3.3/5V	3.0	—					2x2 ver of SY100EP58	2x2
SY56017R	2:1	ANY	CML	2.5V	1.2/1.8/2.5V	3.2	6.4				X		5x5
SY58018U	2:1	ANY	LVPECL	2.5/3.3V	2.5/3.3V	4.0	5.0						3x3
SY58017U	2:1	ANY	CML	2.5/3.3V	2.5/3.3V	7.0	10.7						3x3
SY58019U	2:1	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	7.0	10.7						3x3
SY89843U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.0	—		X	X			4x4
SY89844U	2:2	ANY	LVDS	2.5V	2.5V	2.0	—		X	X			4x4
SY89845U	2:2	ANY	CML	2.5/3.3V	2.5/3.3V	2.0	—		X	X			4x4
SY89473U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	2.5						4x4
SY89474U	2:2	ANY	LVDS	2.5V	2.5V	2.5	2.5						4x4
SY89852U	2:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	2.5						3x3

Timing and Communications Selection Guide

Multiplexers

Bold = New P/N	Fanout Buffer	Input	Output	Supply Voltage	Output Voltage	Max Freq (GHz)	Data Rate (Gbps)	Options				Description	Package
								OE	RPE	FSI	Input EQ		
SY89464U	2:10	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.0	—			X			7x7
SY89465U	2:10	ANY	LVDS	2.5V	2.5V	2.0	—			X			7x7
SY89853U	Dual 2:1	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	2.5						5x5
SY89543L	Dual 2:1	ANY	LVDS	3.3V	3.3V	3.0	3.2						5x5
SY89542U	Dual 2:1	ANY	LVDS	2.5V	2.5V	4.0	3.2						5x5
SY58026U	Dual 2:1	ANY	LVPECL	2.5/3.3V	2.5/3.3V	6.0	5.0						5x5
SY58027U	Dual 2:1	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	6.0	10.7						5x5
SY58025U	Dual 2:1	ANY	CML	2.5/3.3V	2.5/3.3V	7.0	10.7						5x5
SY89545L	4:1	ANY	LVDS	3.3V	3.3V	3.0	3.2						5x5
SY89544U	4:1	ANY	LVDS	2.5V	2.5V	4.0	3.2						5x5
SY56028XR	4:1	ANY	CML	2.5V	1.2/1.8/2.5V	4.5	6.4				X		5x5
SY56572XR	4:1	ANY	CML	2.5V	1.2/1.8/2.5V	4.5	6.4				X		5x5
SY89855U	4:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	2.5						5x5
SY58029U	4:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	4.0	5.0						5x5
SY89546U	4:2	ANY	LVDS	2.5V	2.5V	4.0	3.2						5x5
SY89547L	4:2	ANY	LVDS	3.3V	3.3V	4.0	3.2						5x5
SY58028U	4:2	ANY	CML	2.5/3.3V	2.5/3.3V	7.0	10.7						5x5
SY58030U	4:2	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	7.0	10.7						5x5
SY89859U	8:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	2.5	2.5						7x7
SY58037U	8:2	ANY	CML	2.5/3.3V	2.5/3.3V	4.0	5.0						7x7
SY58038U	8:2	ANY	LVPECL	2.5/3.3V	2.5/3.3V	5.0	4.5						7x7
SY58039U	8:2	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	5.5	5.0						7x7

Crosspoint Switches

Bold = New P/N	Input	Output	Supply Voltage	Output Voltage	Max Data Rate (Gbps)	Options					Description	Package
						OE	RPE	FSI	Input MUX	Input EQ		
SY55854U	ANY	CML	2.5/3.3/5V	2.5/3.3/5V	2.5				X		2x2	QSOP-16
SY54023R	ANY	CML	2.5V	1.2/1.8V	3.2			X	X		2x2	3x3
SY56023R	ANY	CML	2.5V	1.2/1.8/2.5V	6.4				X	X	2x2	3x3
SY58023U	ANY	CML	2.5/3.3V	2.5/3.3V	10.7				X		2x2	3x3
SY55859L	CML	CML	3.3V	3.3V	2.7				X		Dual 2x2	5x5
SY55858U	CML/PECL/ LVPECL	CML	2.5/3.3V	2.5/3.3V	3.0				X		Dual 2x2	TQFP-32
SY58024U	ANY	CML	2.5/3.3V	2.5/3.3V	10.7				X		Dual 2x2	5x5
SY56034AR	ANY	CML	2.5V	1.2/1.8/2.5V	6.4				X		2x2 w/ Six Outputs	5x5
SY89540U	ANY	LVDS	2.5V	2.5V	3.2				X		4x4	6x6
SY58040U	ANY	CML	2.5/3.3V	2.5/3.3V	5.0				X		4x4	6x6
SY56040AR	ANY	CML	2.5V	1.2/1.8/2.5V	6.4				X		4x4	6x6

Timing and Communications Selection Guide

Backplane and Cable Management

Bold = New P/N	Input	Output	Supply Voltage	Max Data Rate (Gbps)	Description	Options OE	Input EQ	Pre-Emph	Package
SY58621L	ANY	LVPECL/CML	3.3V	3.2	Integrated Loopback				4x4
SY58620L	ANY	CML	3.3V	4.25	Integrated Loopback				4x4
SY56016R	ANY	CML	1.2/1.8/2.5V	6.4	Differential Line Driver		X		2x2
SY56216R	ANY	CML	1.2/1.8/2.5V	6.4	Dual Channel Receiver				3x3
SY58626L	ANY	CML	3.3V	6.4	Integrated Loopback			X	5x5
SY58627L	ANY	CML	3.3V	6.4	Integrated Loopback		X		5x5

Receivers/Buffers/Drivers

Bold = New P/N	Input	Output	Supply Voltage	Output Voltage	Max Data Rate (Gbps)	Max Freq (GHz)	Options OE	FSI	Input EQ	Description	Package
SY89207L	LVECL/LVPECL	PECL	3.3V	3.3V	—	0.8				Amp. w/ Low-Gain Feedback	MSOP-10
SY89206V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	—	1.0				2x2 version of SY100EL16	2x2
SY89216V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	—	1.0				2x2 version of SY10EL16	2x2
SY89250V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	—	—				Enhanced Diff Receiver	2x2
SY89307V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	2.5	—				2x2 version of SY100EP16VS	2x2
SY58605U	ANY	LVDS	2.5V	2.5V	3.2	2.0		X		Line Driver/Receiver	2x2
SY89835U	LVDS	LVDS	2.5V	2.5V	3.2	2.0		X		Buffer	2x2
SY54016R	ANY	CML	2.5V	1.2/1.8V	3.2	2.5		X		Low Voltage CML Translator	2x2
SY58604U	ANY	LVPECL	2.5/3.3V	2.5/3.3V	3.2	2.5		X		Line/Driver Receiver	2x2
SY89306V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	—	2.5				2x2 version of SY100EP16	2x2
SY89316V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	—	2.5				2x2 version of SY10EP16	2x2
SY54016AR	ANY	CML	2.5V	1.2/1.8V	3.2	3.2				Low Voltage CML Translator	2x2
SY89850U	CML/PECL/LVDS	LVPECL	2.5/3.3V	2.5/3.3V	3.2	4.0				Low Power	2x2
SY58603U	ANY	CML	2.5/3.3V	2.5/3.3V	4.25	2.5		X		Line Driver/Receiver	2x2
SY58601U	ANY	LVPECL	2.5/3.3V	2.5/3.3V	5.0	5.0				Line Driver/Receiver	2x2
SY56016R	ANY	CML	2.5V	1.2/1.8/2.5V	6.4	5.0			X	Line Driver	2x2
SY56216R	ANY	CML	2.5V	1.2/1.8/2.5V	6.4	5.0	X		X	Dual-Ch Buf w Pre-Emphasis & EQ	3x3
SY58016L	CML/PECL	CML	3.3V	3.3V	10.7	7.0				Line Driver/Receiver	3x3
SY58600U	ANY	CML	2.5/3.3V	2.5/3.3V	10.7	7.0				Line Driver/Receiver	2x2
SY58602U	ANY	RS-LVPECL	2.5/3.3V	2.5/3.3V	10.7	7.0				400mV Output Swing	2x2
SY89251V	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Equivalent to SY100EL16VC	2X2
SY897132L	LVPECL	LVPECL	3.3V	3.3V	1.25	—				Link Replicator, GigE, SATA, Fiber Ch, HDTV	TSSOP-28
SY10/100EL12	ECL/PECL	ECL/PECL	5V	5V	—	—				Low Impedance Driver	SOIC-8
SY100EP16V	ECL/PECL	ECL/PECL	3.3/5V	3.3/5V	2.5	4.0				ECL Differential Receiver/Driver	2x2
SY10/100EL16V	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Differential Receiver	SOIC-8, MSOP-8
SY10/100EL16VS	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Variable Output Swing Receiver	SOIC-8, MSOP-8
SY10/100EL16VA-VF	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Enhanced Differential Receiver	SOIC-8, MSOP-8
SY10/100EP16U	ECL/PECL	ECL/PECL	2.5/3.3V	2.5/3.3V	2.5	4.0				ECL Differential Receiver/Driver	2x2
SY100EL17V	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Quad Differential Receiver	SOIC-20
SY10EL89	ECL/LVPECL	ECL/LVPECL	3.3/5V	3.3/5V	—	—				Coaxial Cable Driver	SOIC-8
SY10/100E112	ECL/PECL	ECL/PECL	5V	5V	—	—				Quad Driver	PLCC-28
SY10/100E116	ECL/PECL	ECL/PECL	5V	5V	—	—				Quint Differential Line Driver	PLCC-28

Timing and Communications Selection Guide

Skew Management (Delay Lines)

Bold = New P/N	Input	Output	Supply Voltage	Max Freq (GHz)	Max Data Rate (Gbps)	Delay Resolution ps/step	Description	Package
SY89295U	LVPECL/LVTTL	LVPECL		1.5		10	Programmable Delay	TQFP-32, 5x5
SY89296U	LVPECL/LVTTL	LVPECL		1.5		10	Delay with Fine Tune Control	TQFP-32, 5x5
SY89297U	ANY	CML		1.6	3.2	5	Dual Channel Programmable Delay	QFN-24 4x4
SY55856U	CML	CML		2.5	5.0	10	Dual Channel Programmable Delay	eTQFP-32

Registers and Flip-Flops

Bold = New P/N	Channel	Supply Voltage	Max Freq (GHz)	Description	Package
SY10/100E131	Quad	5	1.1	4-Bit D Flip Flop	PLCC-28
SY10/100E141	Single	5	0.7	8-Bit Shift Register	PLCC-28
SY10/100E142	Single	5	0.7	9-Bit Shift Register	PLCC-28
SY10/100E151	Single	5	1.1	6-Bit D Register	PLCC-28
SY10/100E451	Single	5	1.1	6-Bit D Register	PLCC-28
SY10/100E452	Single	5	1.1	5-Bit D Register	PLCC-28
SY10/100EL31	Single	5	2.8	D Flip Flop w/ Set and Reset	PLCC-28
SY10/100EL35	Single	5	2.2	JK Flip Flop	SOIC-8
SY10/100EL51	Single	5	2.8	Differential Clock D Flip Flop	SOIC-8
SY10/100EL52	Single	5	2	Differential Data and Clock D Flip Flop	SOIC-8
SY100S331	Single	5	0.8	Triple D Flip Flop	PLCC-28
SY100S351	Single	5	0.7	Hex D Flip Flop	PLCC-28
SY100S341	Single	5	0.6	8-Bit Shift Register	PLCC-28
SY10/100S891	Single	5		5-Bit Registered Transceiver	PLCC-28
SY10/100E143	Single	5	0.7	9-Bit Hold Register	PLCC-28
SY10/100E241	Single	5	0.7	8-Bit Scannable Register	PLCC-28
SY10/100E431	Tri	5		3-Bit Differential Flip-Flop	PLCC-28
SY100EL29V	Dual	3.3/5	1.1	Data & Clock D Flip Flop w/ Set & Reset	SOIC-20
SY55852U	Single	2.5/3.3/5	2.5	D Flip Flop	MSOP-10

Timing and Communications Selection Guide

Gates

Bold = New P/N	Input	Output	Supply Voltage	Max Freq (GHz)	Description	Package
SY58051AU	ANY	CML	2.5/3.3V	8.0	CML AnyGate®	QFN-16 3x3
SY58052AU	ANY	CML	2.5/3.3V	10.7	Data/Clock Synchronizer	QFN-16 3x3
SY55851/A	CML/PECL/LVPECL	CML	2.5/3.3V	3.0	CML AnyGate®	MSOP-10
SY55852U	CML/PECL/LVPECL	CML	2.5/3.3/5V	2.5	D Flip Flop	MSOP-10
SY55853U	CML/PECL/LVPECL	CML	2.5/3.3/5V	2.5	D Latch	MSOP-10
SY10/100E101	ECL	ECL	5V	—	Quad 4-Input OR/NOR	PLCC-28
SY10/100E104	ECL	ECL	5V	—	Quint 2-Input AND/NAND	PLCC-28
SY10/100E122	ECL	ECL	5V	—	9-Bit Buffer	PLCC-28
SY10/100EL01	ECL	ECL	5V	2.0	4-Input OR/NOR	SOIC-8
SY10/100EL04	ECL	ECL	5V	—	2-Input AND/NAND	SOIC-8
SY10/100EL05	ECL	ECL	5V	—	2-Input Diff. AND/NAND	SOIC-8
SY10/100EL07	ECL	ECL	5V	—	2-Input XOR/XNOR	SOIC-8
SY100S301	ECL	ECL	5V	—	Triple 5-Input OR/NOR	PLCC-28
SY100S302	ECL	ECL	5V	—	Quint 2-Input OR/NOR	PLCC-28
SY100S304	ECL	ECL	5V	—	Quint AND/NAND	PLCC-28
SY100S307	ECL	ECL	5V	—	Quint XOR/XNOR	PLCC-28
SY100S317	ECL	ECL	5V	—	Triple 2-Wide OA/OAI	PLCC-28
SY100S318	ECL	ECL	5V	—	5-Wide 5,4,4,4,2 OA/OAI	PLCC-28
SY100S321	ECL	ECL	5V	—	Low-Power 9-Bit Inverter	PLCC-28
SY100S322	ECL	ECL	5V	—	9-Bit Buffer	PLCC-28
SY10/100E107	ECL	ECL	5V	—	Qunit 2-Input XOR/XNOR Gate	PLCC-28
SY10/100E404	ECL	ECL	5V	—	Quad Differential AND/NAND	PLCC-28
SY10/100E431	ECL	ECL	5V	—	3-Bit Differential Flip-Flop	PLCC-28
SY10EP08V	ECL	ECL	3.3/5V	3	2-InpuutXOR/XNOR	SOIC-8
SY10EP01V	ECL	ECL	3.3V/5V	—	4 Input OR/NOR	SOIC-8/MSOP-8
SY10EP05V	ECL	ECL	3.3V/5V	—	Differential AND/NAND	SOIC-8/MSOP-8

Latches

Bold = New P/N	Input	Output	Supply Voltage	Description	Package
SY100S350	ECL	ECL	5V	Hex D Latch	PLCC-28
SY100S355	ECL	ECL	5V	Quad Multiplexer/Latch	PLCC-28
SY10/100E150	ECL	ECL	5V	6-Bit D Latch	PLCC-28
SY10/100E154	ECL	ECL	5V	5-Bit 2:1 Mux-Latch	PLCC-28
SY10/100E155	ECL	ECL	5V	6-Bit 2:1 Mux-Latch	PLCC-28
SY10/100E156	ECL	ECL	5V	3-Bit 4:1 Mux-Latch	PLCC-28
SY10/100E175	ECL	ECL	5V	9-Bit Latch w/ Parity	PLCC-28
SY10/100E256	ECL	ECL	5V	3-Bit 4:1 Mux-Latch	PLCC-28
SY10/100E256	ECL	ECL	5V	3-Bit 4:1 Mux-Latch	PLCC-28
SY100H603	ECL	TTL	5V	9-Bit Latched ECL to TTL	PLCC-28

Super 300K (Fairchild Semiconductor Second Source)

Bold = New P/N	Input	Output	Supply Voltage	Description	Package
SY100S301	ECL	ECL	5V	Triple 5-Input OR/NOR	PLCC-28
SY100S302	ECL	ECL	5V	Quint 2-Input OR/NOR	PLCC-28
SY100S304	ECL	ECL	5V	Quint AND/NAND	PLCC-28
SY100S307	ECL	ECL	5V	Quint XOR/XNOR	PLCC-28
SY100S313	ECL	ECL	5V	Quad Driver	PLCC-28
SY100S314	ECL	ECL	5V	Quint Differential Line Receiver	PLCC-28
SY100S317	ECL	ECL	5V	Triple 2-Wide OA/OAI	PLCC-28
SY100S318	ECL	ECL	5V	5-Wide 5,4,4,4,2 OA/OAI	PLCC-28
SY100S321	ECL	ECL	5V	Low-Power 9-Bit Inverter	PLCC-28
SY100S322	ECL	ECL	5V	9-Bit Buffer	PLCC-28
SY100S324	TTL	ECL	5V	Low Power Hex TTL to ECL Translator	PLCC-28
SY100S325	ECL	TTL	5V	Low Power Hex ECL to TTL Translator	PLCC-28
SY100S331	ECL	ECL	5V	Triple D Flip Flop	PLCC-28
SY100S341	ECL	ECL	5V	8-Bit Shift Register	PLCC-28
SY100S350	ECL	ECL	5V	Hex D Latch	PLCC-28
SY100S351	ECL	ECL	5V	Hex D Flip Flop	PLCC-28
SY100S355	ECL	ECL	5V	Quad Multiplexer/Latch	PLCC-28
SY100S360	ECL	ECL	5V	Dual Parity Checker/Generator	PLCC-28
SY100S363	ECL	ECL	5V	Dual 8-Input Multiplexer	PLCC-28
SY100S364	ECL	ECL	5V	16-Input Multiplexer	PLCC-28
SY100S366	ECL	ECL	5V	9-Bit Comparator	PLCC-28
SY100S370	ECL	ECL	5V	Universal Demux/Decoder	PLCC-28
SY100S371	ECL	ECL	5V	Triple 4-Input Multiplexer w/ Enable	PLCC-28
SY100S391	TTL	ECL	5V	Low Power Hex TTL to PECL Translator	PLCC-28
SY100S811	PECL/TTL	PECL	5V	1:9 PECL/TTL-to-PECL Fanout Buffer	PLCC-28
SY100S815	PECL/TTL	PECL	5V	Quad PECL/TTL-to-PECL Fanout Buffer	SOIC-16
SY100S834/L	LVPECL/PECL	LVPECL/PECL	3.3/5V	(÷1, ÷2, ÷4) or (÷2, ÷4, ÷8) Clock Generator	SOIC-16
SY100S838/L	LVPECL/PECL	LVPECL/PECL	3.3/5V	(÷1, ÷2/3) or (÷2, ÷4/6) Clock Generator	SOIC-20
SY100S863	ECL	ECL	5V	8-Input PECL Differential Multiplexer	PLCC-28
SY10/100S891	ECL	ECL	5V	5-Bit Registered Transceiver	PLCC-28

High-Speed Clock Generation Selection Guide

Clock Generators

Bold = New P/N	Supply Voltage	Input Type	Output Type	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Description	Package
SY87729L	3.3V	XTAL	PECL	10	365	AnyClock™ Fractional-N Synthesizer	TQFP-32
SY87739L	3.3V	XTAL	PECL	10	730	AnyClock™ Fractional-N Synthesizer	TQFP-32
SY89426	5V	TTL	PECL	33	622	SONET OC-12/OC -3	PLCC-28
SY89529L	3.3V	16.66MHz	LVPECL	—	200	Spread-Spectrum Clock Synthesizer	TQFP-32, SOIC-28
SY89531L	3.3V	XTAL	HSTL/LVPECL	33	500	XTAL Input Synthesizer	TQFP-64
SY89532L	3.3V	XTAL	LVPECL	33	500	XTAL Input Synthesizer	TQFP-64
SY89533L	3.3V	XTAL	LVDS/LVPECL	33	500	XTAL Input Synthesizer	TQFP-64
SY89534L	3.3V	ANYX	LVPECL	33	500	Ref. Input Synthesizer	TQFP-64
SY89535L	3.3V	ANYX	LVDS/LVPECL	33	500	Ref. Input Synthesizer	TQFP-64
SY89536L	3.3V	ANYX	HSTL/LVPECL	33	500	Ref. Input Synthesizer	TQFP-64
SY89537L	3.3V	ANYX	LVDS/LVPECL	73	750	Ref. and XTAL Prog. Freq.	7x7
SY89538L	3.3V	ANYX	LVDS/LVPECL	73	750	Ref. Input, Multiple Banks, Zero Delay	TQFP-64
SY89610L	3.3V	ANYX	CML	19	694	Ultra Low Jitter Clock Synthesizer	5x5

Ultra-Low Jitter Clock Synthesizers

Bold = New P/N	Supply Voltage	Crystal Input (MHz)	REF_IN (MHz)	Output Type	Output(s) (MHz)	Typ. Jitter (1.875-20MHz)	Options FSEL	Options PLL Bypass	Options NSEL	Options OE	Applications	Package
SM803xxx	2.5/3.3V	12-55	-	12-Diff/SE	12-850	105fs	X	X		X	GbE, 10GbE,PCIe, SONET, SAS/SATA	7x7 QFN
SM802xxx	2.5/3.3V	'11-30	'11-80	8-Diff/16-SE	11-840	115fs	X	X		X	GbE, 10GbE,PCIe, SONET, SAS/SATA	7x7 QFN
SM802101	2.5/3.3V	25	25	8-HCSL	100/200	105fs/100fs	X	X		X	PCIe	7x7 QFN
SM802104	2.5/3.3V	26.5625	26.5625	2-LVPECL	106.25/212.5	200fs/200fs	X	X		X	Fibre Channel	4x4 QFN
SM802105	2.5/3.3V	25	25	2-LVPECL	156.25/312.5	110fs/110fs	X	X		X	10GbE	4x4 QFN
SM802108	2.5/3.3V	25	25	4-LVPECL	156.25/125	110fs/110fs		X			GbE, 10GbE	4x4 QFN
SM802109	2.5/3.3V	25	25	4-HCSL	100	105fs		X			PCIe	4x4 QFN
SM802110	2.5/3.3V	-	30.72	1-LVPECL	153.60	99fs **		X			CPRI	4x4 QFN
SM802111	2.5/3.3V	-	15	2-LVPECL	125.00	85fs		X			Fibre Channel	4x4 QFN
SM802112	2.5/3.3V	-	80	2-LVDS, 1-LVCMOS	80/480	290fs ****					Set top Box	7x7 QFN
SM802116	2.5/3.3V	26.5625	26.5625	2-LVDS	106.25/212.5	190fs/180fs ***	X	X		X	Fibre Channel	4x4 QFN
SM802117	2.5/3.3V	25	25	2-LVPECL	125	115fs	X	X		X	GbE	4x4 QFN
SM802120	2.5/3.3V	25	-	6-LVDS, 2-HCSL	125	100fs				X	10GbE, PCIe	7x7 QFN
SM802121	2.5/3.3V	25	25	1-LVPECL	156.25	110fs					10GbE	4x4 QFN
SM802123	2.5/3.3V	-	25	8-LVCMOS	25/125	115fs		X		X	GbE	7x7 QFN
SM802124	2.5/3.3V	-	15	2-LVCMOS	125	85fs		X			GbE	4x4 QFN
SM802128	2.5/3.3V	25	25	8-LVPECL	156.25/312.5	110fs	X	X		X	10GbE	7x7 QFN
SM802149	2.5/3.3V	26.04166	26.04166	8-LVDS	156.26/312.5, 78.125/156.25	99fs	X	X		X	10GbE	7x7 QFN
SM803020	2.5/3.3V	39.0625	-	12-LVPECL	156.25	74fs				X	10GbE	7x7 QFN

* Depends on crystal used and PLL divider settings.

** 2MHz-20MHz

*** 637kHz-10MHz

Analog Frequency Multiplier - XO

Bold = New P/N	Input Type	Input Freq (MHz)	Multiplication	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Logic	Phase Jitter	Package
PL663-18	3rd Overtone Xtal	75-140	x2	150	280	LVPECL	70fs@156.25MHz	QFN-16L, TSSOP-16L
PL663-28	3rd Overtone Xtal	140-160	x2	280	320	LVPECL	100fs@312.5MHz	QFN-16L, TSSOP-16L
PL663-29	3rd Overtone Xtal	100-160	x2	200	320	LVPECL	120fs@312.5MHz	QFN-16L, TSSOP-16L

High-Speed Clock Generation Selection Guide

Analog Frequency Multiplier - VCXO

Bold = New P/N	Input Type	Input Freq (MHz)	Multiplication	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Logic	Phase Jitter	Package
PL565-08	Fund Xtal	150-200	x4	600	800	LVPECL	50fs@622.08MHz	Die, QFN-16L
PL560-08	Fund Xtal	62.5-150	x4	250	600	LVPECL	40fs@491.52MHz	Die, QFN-16L
PL565-68	Fund Xtal	62.5-160	x2	250	320	LVPECL	70fs@245.76MHz	Die, QFN-16L
PL565-37	Fund Xtal	30-62.5	x4	120	250	LVCMOS	100fs@155.52MHz	Die, QFN-16L, TSSOP-16L
PL565-38	Fund Xtal	30-62.5	x4	120	250	LVPECL	120fs@155.52MHz	Die, QFN-16L, TSSOP-16L
PL560-47	Fund Xtal	30-80	x2	60	160	LVCMOS	100fs@155.52MHz	Die, QFN-16L, TSSOP-16L
PL560-48	Fund Xtal	30-80	x2	60	160	LVPECL	120fs@155.52MHz	Die, QFN-16L, TSSOP-16L

VCXO with Multiplier

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Multiplier	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Type	Pull Range (PPM)	Voltage	Comments	Package
PL585-88	PhasorVI	Fund Xtal	19-40	Programmable	19	800	LVPECL	150	3.3V		Die
PL585-28	PhasorVI	Fund Xtal	19-40	Programmable	19	250	LVPECL	150	3.3V		Die
PL585-XX	PhasorVI	Fund Xtal	32-42	x2 to x20 in 14 steps	65	800	LVPECL	150	3.3V		TSSOP-16L
PL502-00	VCXO+PLL	Fund Xtal	12-25	1,2,4,8	12	200	LVCMOS	250	3.3V		Die
PL502-02	VCXO+PLL	Fund Xtal	12-25	2	24	50	LVCMOS	250	3.3V		SOP-8L
PL502-03	VCXO+PLL	Fund Xtal	12-25	4	48	100	LVCMOS	250	3.3V		SOP-8L
PL502-04	VCXO+PLL	Fund Xtal	12-25	8	96	200	LVCMOS	250	3.3V		SOP-8L
PL502-30	VCXO+PLL	Fund Xtal	12-25	÷16 to x32	0.75	800	LVCMOS, LVPECL, LVDS	150	3.3V		Die
PL502-35	VCXO+PLL	Fund Xtal	12-25	÷16 to x32	0.75	800	LVPECL	150	3.3V	Inverted OE	QFN-16L, TSSOP-16L
PL502-37/38/39	VCXO+PLL	Fund Xtal	12-25	÷16 to x32	0.75	800	LVCMOS, LVPECL, LVDS	150	3.3V		QFN-16L, TSSOP-16L
PL520-00	VCXO+PLL	Fund Xtal	100-200	1,2,4,8	100	1GHz	LVCMOS, LVPECL, LVDS	100	3.3V		Die

VCXO Non-Multiplier

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Type	Pull Range (ppm)	Voltage	Phase Jitter	Linearity	Ultra Low Power	Package
PL586-05/08	VCXO	Fund Xtal	130-200	130	200	LVPECL	140	3.3V	<100fs	<5%	45mA	Die
PL586-15/18	VCXO	Fund Xtal	70-130	70	130	LVPECL	125	3.3V	<100fs	<3%	45mA	Die
PL586-25/28	VCXO	Fund Xtal	120-125	120	125	LVPECL	100	3.3V		<3%	45mA	Die
PL586-55/58	VCXO	Fund Xtal	150-160	150	160	LVPECL	125	3.3V		<3%	45mA	Die
PL586-09	VCXO	Fund Xtal	120-160	120	160	LVDS	125	3.3V	<100fs	<3%	45mA	Die
PL500-15/16	VCXO	Fund Xtal	16-36	1	18	LVCMOS	150	2.5V, 3.3V		<5%		SOT23-6L, SOP-8L
PL500-17	VCXO	Fund Xtal	17-36	17	36	LVCMOS	150	2.5V, 3.3V		<5%		SOT23-6L, SOP-8L
PL500-37	VCXO	Fund Xtal	36-130	36	130	LVCMOS	150	2.5V, 3.3V		<5%		SOT23-6L, SOP-8L
PL520-20	VCXO	Fund Xtal	100-200	100	200	LVCMOS, LVPECL, LVDS	100	2.5V, 3.3V		<5%		Die
PL520-30	VCXO	Fund Xtal	65-130	65	130	LVPECL, LVDS	100	2.5V, 3.3V		<5%		Die
PL520-80	VCXO	Fund Xtal	19-65	9.5	65	LVPECL, LVDS	100	2.5V, 3.3V		<5%		Die

High-Speed Clock Generation Selection Guide

XO Non-Multiplier - High Frequency

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Logic	Voltage	Package
PL686-05	XO	Fund Xtal	70-170	70	170	LVPECL	3.3V	Die
PL686-35	3OT XO	3rd Overtone Xtal	120-170	120	170	LVPECL	3.3V	Die
PL620-20	XO	Fund or 3rd Overtone Xtal	100-200	100	200	LVPECL, LVDS	2.5V, 3.3V	Die
PL620-21	XO	Fund or 3rd Overtone Xtal	100-200	100	200	LVPECL, LVDS	3.3V	Die
PL620-30	XO	Fund or 3rd Overtone Xtal	65-130	32.5	130	LVPECL, LVDS	3.3V	Die
PL620-80	XO	Fund or 3rd Overtone Xtal	19-65	9.5	65	LVCMOS, LVPECL, LVDS	3.3V	Die
PL620-88/89	XO	Fund or 3rd Overtone Xtal	19-65	19	65	LVPECL, LVDS	3.3V	TSSOP-16L

XO Non-Multiplier - Low Frequency

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Logic	Voltage	Package
PL610 Series	XO	Fund Xtal	10-60	0.3	60	LVCMOS	1.8V ~ 3.3V	Die
PL610-32/32A/33	XO 32KHz	Fund Xtal	16-26	0.032768	0.032768	LVCMOS	1.8V ~ 3.3V	Die
PL610-32	XO 32KHz	Fund Xtal	16.777216	0.032768	0.032768	LVCMOS	1.8V ~ 3.3V	DFN-6L, SOT23-6L

XO with Multiplier

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Multiplier	Output Frequency Min (MHz)	Output Frequency Max (MHz)	Output Type	Voltage	Package
PL685-88	PhasorVI	Fund Xtal	19-40	Programmable	19	800	LVPECL	3.3V	Die
PL685-28	PhasorVI	Fund Xtal	19-40	Programmable	19	250	LVPECL	3.3V	Die
PL685-XX	PhasorVI	Fund Xtal or REF Input	32-42	x2 to x20 in 14 steps	65	800	LVPECL	3.3V	TSSOP-16L
PL602-00	XO+PLL	Fund Xtal	12-25	1,2,4,8	12	200	LVCMOS	3.3V	Die
PL602-03	XO+PLL	Fund Xtal	12-25	4	48	100	LVCMOS	3.3V	SOP-8L, TSSOP-8L
PL602-04	XO+PLL	Fund Xtal	12-25	8	96	200	LVCMOS	3.3V	SOP-8L, TSSOP-8L
PL602-37/38/39	XO+PLL	Fund Xtal or REF Input	12-25	÷16 to x32	0.75	800	LVCMOS, LVPECL, LVDS	3.3V	QFN-16L, TSSOP-16L
PL620-00	XO+PLL	Fund Xtal	100-200	1,2,4	100	800	LVCMOS, LVPECL, LVDS	3.3V	Die

XO for PCI Express

Bold = New P/N	Function	Input Type	Input Freq (MHz)	Multiplier	Output Freq (MHz)	# of Outputs	Voltage	Package
PL602-21	Fund Xtal or Single Ended Clk	25	4	100	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602-22	Fund Xtal or Single Ended Clk	25	5	125	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602-23	Fund Xtal or Single Ended Clk	25	8	200	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602-26	Fund Xtal or Single Ended Clk	25	1	25	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602-27	Fund Xtal or Single Ended Clk	25	10	250	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602-15	Fund Xtal or Single Ended Clk	25	6.25	156.25	1 Channel	2.5V, 3.3V		SOP-8L, SOT23-6L
PL602031	Fund Xtal or Single Ended Clk	25	1	25	2 Channels	2.5V, 3.3V		QFN-16 3x3
PL602032	Fund Xtal or Single Ended Clk	25	4	100	2 Channels	2.5V, 3.3V		QFN-16 3x3
PL602033	Fund Xtal or Single Ended Clk	25	5	125	2 Channels	2.5V, 3.3V		QFN-16 3x3
PL602034	Fund Xtal or Single Ended Clk	25	8	200	2 Channels	2.5V, 3.3V		QFN-16 3x3
PL602041	Fund Xtal or Single Ended Clk	25	1, 4, 5, 8	25, 100, 125, 200	4 Channels	2.5V, 3.3V		QFN-24 4x4
PL607041	Fund Xtal or Single Ended Clk	25	1, 4, 5, 8	25, 100, 125, 200	4 Channels	2.5V, 3.3V	Yes	QFN-24 4x4
PL602081	Fund Xtal or Single Ended Clk	25	'1, 4, 8	25, 100, 200	8 Channels	2.5V, 3.3V		QFN-44 7x7
PL602082	Fund Xtal or Single Ended Clk	25	'1, 5, 10	25, 125, 250	8 Channels	2.5V, 3.3V		QFN-44 7x7
PL607081	Fund Xtal or Single Ended Clk	25	'1, 4, 8	25, 100, 200	8 Channels	2.5V, 3.3V	Yes	QFN-44 7x7
PL607082	Fund Xtal or Single Ended Clk	25	'1, 5, 10	25, 125, 250	8 Channels	2.5V, 3.3V	Yes	QFN-44 7x7

High-Speed Clock Generation Selection Guide

Programmable Clock - MHz-to-MHz

Bold = New P/N	# of PLLs	Crystal Input (MHz)	Reference Input (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	# of Outputs	Voltage	Programmable Pin(s) PDB	OE	FSEL	CLK	Ultra Low Power	Package
PL610-01/02/03	0	10-130		0.16	130	<=2	1.8V ~ 3.3V	X	X		X	X	Die
PL610-06	0	10-60		0.16	60	<=2	1.8V ~ 3.3V	X	X		X	X	Die
PL610-01	0	10-130	1-130	0.16	130	<=2	1.8V ~ 3.3V	X	X		X	X	DFN-6L, SOT23-6L
PL611-01	1	10-30	1-200	1	200	<=3	2.5V, 3.3V	X	X	X	X		SOP-8L, SOT23-6L
PL611-30	1	10-30	1-200	5	400	<=3	2.5V, 3.3V		X	X	X		SOP-8L, SOT23-6L
PL611s-02	1	10-50	1-200	2	200	<=2	1.8V ~ 3.3V	X	X	X	X		DFN-6L, SOT23-6L
PL611s-02/03	1	10-50		2	200	<=2	1.8V ~ 3.3V	X	X	X	X		Die
PL611s-04	1	10-50		2	200	<=2	1.8V ~ 3.3V	X	X	X	X		Die
PL611s-27	1		1-200	1	125	<=2	1.8V ~ 3.3V	X	X	X	X	X	DFN-6L, SOT23-6L
PL613-01	3	10-40	10-200	1	200	<=8	1.8V ~ 3.3V	X	X	X	X	X	QFN-16L, TSSOP-16L
PL613-05	3	10-40	10-200	1	200	<=3	1.8V ~ 3.3V	X	X	X	X	X	SOP-8L
PL613-21	3	10-40	10-200	0.004	125	<=4	1.8V ~ 3.3V	X	X	X	X	X	QFN-16L, TSSOP-16L

JitterBlocker

Bold = New P/N	Input Frequency Min(MHz)	Input Frequency Max (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	# of Outputs	Voltage	Programmable Pin(s) PDB	OE	FSEL	CLK	Ultra Low Power	Package
PL902	1	200	1.25	200	3 SE	2.5V, 3.3V	X	X	X	X	X	SOT23-6L
PL903	12	200	12	840	1 Diff	2.5V, 3.3V		X		X		QFN-24L
PL904	12	250	12	850	2 Diff	2.5V, 3.3V		X		X		QFN-32L

PicoPLL

Bold = New P/N	# of PLLs	Input (MHz) Crystal	Input (MHz) Reference	Output Frequency Min (MHz)	Output Frequency Max (MHz)	# of Outputs	Voltage	Programmable Pin(s) PDB	OE	FSEL	CLK	Ultra Low Power	Package
PL610-01/02/03	0	10-130		0.16	130	≤2	1.8V ~ 3.3V	X	X		X	X	Die
PL610-06	0	10-60		0.16	60	≤2	1.8V ~ 3.3V	X	X		X	X	Die
PL610-01	0	10-130	1-130	0.16	130	≤2	1.8V ~ 3.3V	X	X		X	X	DFN-6L, SOT23-6L
PL611-01	1	10-30	1-200	1	200	≤3	2.5V, 3.3V	X	X	X	X		SOP-8L, SOT23-6L
PL611-30	1	10-30	1-200	5	400	≤3	2.5V, 3.3V		X	X	X		SOP-8L, SOT23-6L
PL611s-02	1	10-50	1-200	2	200	≤2	1.8V ~ 3.3V		X	X	X		DFN-6L, SOT23-6L
PL611s-02/03	1	10-50		2	200	≤2	1.8V ~ 3.3V	X	X	X	X		Die
PL611s-04	1	10-50		2	200	≤2	1.8V ~ 3.3V	X	X	X	X		Die
PL613-01	3	10-40	10-200	1	200	≤8	1.8V ~ 3.3V	X	X	X	X	X	QFN-16L, TSSOP-16L
PL613-05	3	10-40	10-200	1	200	≤3	1.8V ~ 3.3V	X	X	X	X	X	SOP-8L
PL613-21	3	10-40	10-200	0.004	125	≤4	1.8V ~ 3.3V	X	X	X	X	X	QFN-16L, TSSOP-16L
PL611s-18	1	10-50	1-200	0.5	125	2	1.8V ~ 3.3V	X	X	X	X	X	DFN-6L, SOT23-6L
PL611s-19	1		0.01-200	0.5	125	2	1.8V ~ 3.3V	X	X	X	X	X	DFN-6L, SOT23-6L

High-Speed Clock Generation Selection Guide

Programmable EMI Reduction - MHz-to-MHz

Bold = New P/N	# of PLLs	Crystal Input (MHz)	Reference Input (MHz)	Output Frequency Min (MHz)	Output Frequency Max (MHz)	# of Outputs	Voltage	Programmable Pin(s) PDB	Programmable Pin(s) OE	Programmable Pin(s) CLK	Package
PL671-01	1	10-40	1-200	(MHz)	(MHz)	<=3	2.5V, 3.3V	X	X	X	SOP-8L, SOT23-6L
PL671-02	1		1-200	1	200	<=3	2.5V, 3.3V	X	X	X	SOT23-6L
PL671-25	1	10-40	1-200	1	200	2	2.5V, 3.3V	X	X	X	SOP-8L
PL671-29	1	10-40	1-200	1	200	1	2.5V, 3.3V	X	X	X	SOP-8L
PL671-30	1		1-200	1	200	1	2.5V, 3.3V	X	X	X	SOP-8L
PL671-33	1	10-40	1-200	1	200	<=2	2.5V, 3.3V	X	X	X	SOP-8L

Second Source Clock Synthesizers

Bold = New P/N	Supply Voltage	Crystal Input (MHz)	Input Reference (MHz)	Output Type	Output(s) (MHz)	Typ Jitter (1.875-20MHz)	Options FSEL	Options PLL Byp	Options NSEL	Options OE	Applications	Package	Competitor
SM840021	2.5/3.3V	25	-	1-LVCMOS	125.0	250fs				X	GbE	IDT	TQFP-8
SM840002	2.5/3.3V	25	-	2-LVCMOS	62.5/125/156.25	80fs	X	X		X	GbE, 10GbE	IDT	TSSOP-16
SM840004-11	2.5/3.3V	25	-	4-LVCMOS	62.5/125	356/55fs	X			X	GbE	IDT	TSSOP-20
SM843256	2.5/3.3V	24, 25, 18.75, 19.44, 19.53125	-	6-LVPECL	75-625 *	80fs @ 156.25	X	X	X		GbE, 10GbE,PCIe, SONET, SAS/ SATA	IDT	eTSSOP-24
SM844256	2.5/3.3V	24, 25, 18.75, 19.44, 19.53125	-	6-LVDS	75-625 *	80fs @ 125	X	X	X		GbE, 10GbE,PCIe, SONET, SAS/ SATA	IDT	eTSSOP-24
SM840051	2.5/3.3V	19.44, 19.53125, 20.121601	-	1-LVCMOS	(77.76/155.52) (80.566406/161.132812) (78.125/156.25) *	58fs @ 156.25	X			X	SONET, 10GbE	IDT	TQFP-8
SM843251-156	2.5/3.3V	25	-	1-LVPECL	156.25	110fs					10GbE	IDT	TSSOP-8
SM843031-01	2.5/3.3V	25	-	1-LVPECL	312.5	119fs					10GbE	IDT	TSSOP-8
SM840001	2.5/3.3V	26.5625	-	1-LVCMOS	106.25/212.5	510fs/320fs ***	X			X	Fibre Channel	IDT	TQFP-8
SM843001-106	2.5/3.3V	26.5625	-	1-LVPECL	106.25	170fs ***					Fibre Channel	IDT	TSSOP-8
SM843001-212	2.5/3.3V	26.5625	-	1-LVPECL	212.5	170fs ***					Fibre Channel	IDT	TSSOP-8

* Depends on crystal used and PLL divider settings

** 637kHz-10MHz

SY88349NDL
2.5Gbps Burst-Mode Limiting Amplifier with Ultra-Fast Signal Assert Timing

The SY88349NDL is a high-sensitivity, burst-mode capable limiting post amplifier designed for optical line terminal (OLT) receiver applications. The SY88349NDL satisfies the strict timing restrictions of the GPON standards by providing ultra-fast loss-of-signal (LOS) or Signal-Detect (SD) output. Auto reset and manual reset options are provided to control LOS/SD output timing. For increased flexibility, this device also includes an option to select between LOS or SD output. The device can be connected to burst-mode capable transimpedance amplifiers (TIAs) using AC or DC coupling.

The SY88349NDL generates a high-gain LOS or SD LVTTL output. A programmable LOS/SD level set pin (LOS/SD_{LVL}) sets the sensitivity of the input amplitude detection. When LOS/SD SEL pin is left open or tied to VCC, JAM is active high, SD is selected and asserts high if the input amplitude rises above the threshold sets by LOS/SD_{LVL} and de-asserts low otherwise. When LOS/SD SEL pin is set low or tied to GND, JAM is active low, LOS is selected and asserts low if the input amplitude rises above the threshold sets by LOS/SD_{LVL} and de-asserts high otherwise. The LOS/SD output can be fed back to the JAM input to maintain output stability under an invalid signal conditions. Typically, 4dB - 5dB SD hysteresis is provided to prevent chattering.

The SY88349NDL also features a selectable proprietary noise discriminator that aids by filtering out input signals that do not qualify as a 2.5Gbps GPON preamble signal in the initial startup phase. This feature minimizes false SD asserts that can be triggered by random noise.

The SY88349NDL operates from a single +3.3V power supply, over temperatures ranging from –40°C to +85°C. With its wide bandwidth and high gain, signals up to 2.5Gbps and as small as $5mV_{PP}$ can be amplified to drive devices with CML inputs.

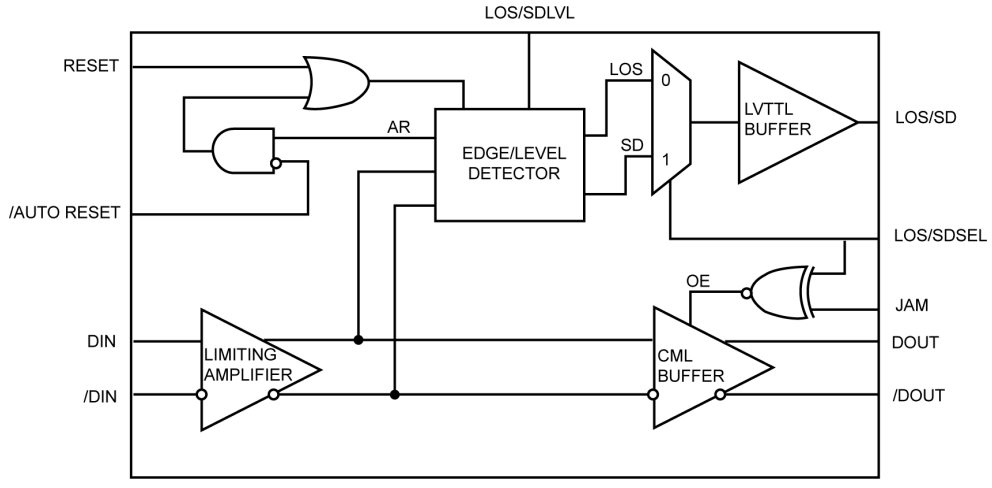
Features
- <5ns SD assert (LOS de-assert) time
- Proprietary noise discriminator feature
- Option to AUTO RESET or manual RESET LOS/SD output
- Selectable LOS/SD option
- Up to 2.5Gbps operation
- Low-noise CML data outputs
- $5mV_{PP}$ input sensitivity
- High-sensitivity LOS/SD detect
- LVTTL LOS/SD output with an external pull-up resistor
- Squelching function to diable output
- Programmable LOS/SD level set (LOS/SD_{LVL})
- Single 3.3V power supply
- Available in a 16-pin (3mm x 3mm) QFN package

Applications
- XGPON.1/GEPON/GPON
- Gigabit Ethernet
- Fibre Channel
- OC-3/12/24/48 SONET/SDH
- High-gain line driver and line receiver
- Low-gain TIA interface

Markets
- FTTH
- Datacom/telecom
- Optical transceiver

Ordering Information

Part Number	Package Type	Operating Range	Package Marking
SY88349NDLMG	Lead-Free 3mm x 3mm QFN-16	-40°C to +85°C	349N with Pb-Free Bar-line indicator
SY88349NDLMG TR	Lead-Free 3mm x 3mm QFN-16	-40°C to +85°C	349N with Pb-Free Bar-line indicator



Communications and Fiber-Optic ICs Selection Guide

Optical Module Controllers

Bold = New P/N	Supply Voltage	Description	Package
MIC3003GFL	3.3V	FOM Management IC with Internal Calibration, CSFP/CSFF MSA and SFF-8472 compliant	QFN-24 3x3
MIC3003GML	3.3V	FOM Management IC with Internal Calibration, SFP/SFF MSA and SFF-8472 compliant	QFN-24 4x4

Fiber-Optic Burst Mode Post Amplifiers

Bold = New P/N	Data Rate (Gbps)	Supply Voltage	LOS/SD	Input	Output	LOS/SD Gain	Maximum SD Assert/LOS De-Assert Time	Noise Discriminator	Hystersis Typ (dB)	Package
SY88149HL	1.250	3.3V	SD & LOS (TTL)	CML/PECL	PECL	1x	5ns		3.0	3x3 QFN
SY88149HAL	1.250	3.3V	SD & LOS (TTL)	CML/PECL	PECL	1x	5ns		3.0	3x3 QFN
SY88149NDL	1.250	3.3V	SD & LOS (TTL)	CML/PECL	PECL	1x	7ns	X	4.0	3x3 QFN
SY88349NDL	2.500	3.3V	SD & LOS (TTL)	CML/PECL	CML	1x	7ns	X	4.0	3x3 QFN

Fiber-Optic Single-Chip Transceivers

Bold = New P/N	Description	Features	Supply Voltage	EVB Available	Package
SY88432L	4.25G Integrated Tranceiver with FP/DFB LDD and Post Amp	• Multi-rate up to 4.25Gbps • 10-1800mVpp input sensitivity, Programmable LOSLVL • 70mA IBIAS/85mA IMOD"	3.3V	X	4x4 QFN

Fiber-Optic Laser Diode Drivers

Bold = New P/N	Description	Data Rate (Gbps)	Drive Current (mA)	Supply Voltage	EVB Available	Package
SY88932L	VCSEL/FP/DFB Laser Driver with Output Enable	4.25	60	3.3V	X	3x3 QFN
SY88902V	VCSEL Laser Driver with Output Enable	1.25	25	5V		MSOP-10
SY88992L	VCSEL Driver with PE and Output Enable	4.25	25	3.3	X	3x3 QFN
SY100EL16VS	Variable Output Swing Differential Receiver	1.25	25	3.3V/5V		MSOP-8, SOIC-8
SY100EP16VS	Variable Output Swing Differential Receiver	2.50	25	3.3V/5V		MSOP-8, SOIC-8
SY84782L	Ultra Low Power 1.25Gbps Laser Diode Driver	1.25	90	2.5V	X	3x3 QFN
SY84402L	Tiny VCSEL Laser Diode Driver	4.25	25	3.3V	X	3x3 QFN
SY88922	SONET/SDH VCSEL Laser Driver	2.50	25	5V		MSOP-10
SY88922V	SONET/SDH VCSEL Laser Driver	2.50	25	3.3/5V		MSOP-10
SY89307V	Output Swing Differential Receiver—VCSEL Driver	2.125	25	3.3V/5V	X	2x2 QFN
SY88822V	Laser Driver with Output Enable	0.155	25	3.3/5V	X	MSOP-10
SY88722V	Laser Driver with Output Enable	0.622	30	3.3/5V	X	MSOP-10
SY100EL1003	Laser Driver with Output Enable	1.25	75	5V		SOIC-16
SY88422L	Laser Driver with Integrated Bias	4.25	90	3.3V	X	3x3 QFN
SY88782L	High-Current, Low Power FP/DFB Laser Driver	1.25	90	3.3V		3x3 QFN
SY88982L	High-Current, Low Power FP/DFB Laser Driver	2.70	90	3.3V	X	3x3 QFN
SY88024L	11.3Gbps VCSEL Laser Diode Driver w Integrated Bias	11.3	20	3.3V	X	3x3 QFN
SY88952L	Laser Diode Driver w/ Automatic Power Control	2.70	90	3.3V		5x5 QFN
SY88022AL	11.3Gbps FP/DFB Laser Diode Driver w Integrated Bias	11.3	60	3.3V	X	3x3 QFN

Fiber-Optic Post Amplifiers

Bold = New P/N	Data Rate (Gbps)	Supply Voltage	LOS/SD	Input	Output	LOS/SD Gain	RC Time Constant	Hysteresis Typ (dB)	Package
SY88073L	12.5	3.3V	LOS/SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	10x	4	QFN-16 3x3
SY88083L	12.5	3.3V	LOS/SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	10x	4	QFN-16 3x3
SY88053CL	12.5	3.3V	LOS/SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	4	QFN-16 3x3
SY88063CL	12.5	3.3V	LOS/SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	4	QFN-16 3x3
SY84403BL	4.25	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	3.5	2x2 QFN
SY88403BL	4.25	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	3.5	eMSOP-10, 3x3 QFN
SY88289AL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	3.5	QFN-16 3x3
SY88289CL	3.2	3.3V	LOS (TTL)	PECL	CML	4x	20x	3.5	QFN-16 3x3
SY88289HL	3.2	3.3V	LOS (TTL)	PECL	CML	4x	20x	3.5	QFN-16 3x3
SY88303BL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	0.5x	20x	3.5	eMSOP-10, 3x3 QFN
SY88313BL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	3.5	eMSOP-10, 3x3 QFN
SY88343BL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	4x	20x	3.5	eMSOP-10, 3x3 QFN
SY88343DL	3.2	3.3V	LOS (TTL)	PECL	CML	4x	20x	3.5	QFN-16 3x3
SY88343HL	3.2	3.3V	LOS (TTL)	PECL	CML	4x	20x	3.5	QFN-16 3x3
SY88347DL	3.2	3.3V	LOS (TTL)	PECL	PECL	4x	20x	3.5	MSOP-10
SY88353BL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	20x	3.5	QFN-16 3x3
SY88773V	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1x	1x	4.6	eMSOP-10, 3x3 QFN
SY88843V	3.2	3.3V/5V	SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	1x	4.6	eMSOP-10, 3x3 QFN
SY88923AV	3.2	3.3V/5V	LOS (TTL)	PECL	PECL	1x	1x	4.6	eMSOP-10, MSOP-10
SY88973V	3.2	3.3V/5V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	1x	4.6	eMSOP-10, 3x3 QFN
SY88973BL	3.2	3.3V	LOS (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	1x	4.6	QFN-16 3x3
SY88983V	3.2	3.3V/5V	SD (TTL)	PECL w/ internal 50Ω to VREF	CML	1x	1x	4.6	eMSOP-10, 3x3 QFN
SY88993AV	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1x	1x	4.6	MSOP-10
SY88993V	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1x	1x	5.6	MSOP-10
SY88923V	2.5	3.3V/5V	LOS (TTL)	PECL	PECL	1x	1x	4.6	MSOP-10
SY88943V	2.5	3.3V/5V	SD (TTL)	PECL	PECL	1x	1x	4.6	MSOP-10
SY84113BU	1.25	2.5V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1x	20X	3.5	QFN-16 3x3
SY88993AL	1.25	3.3V	LOS (TTL)	PECL	PECL	1x	1X	5.6	MSOP-10
SY88147DL	1.25	3.3V	LOS (TTL)	PECL	PECL	4x	20x	3.5	MSOP-10
SY88149CL	1.25	3.3V	LOS (TTL)	PECL	PECL	4x	1x	3.5	MSOP-10
SY88903AL	1.25	3.3V	LOS (TTL)	PECL	PECL	4x	1x	3.5	MSOP-10
SY88903V	1.25	3.3V/5V	LOS (TTL)	PECL	PECL	1x	1x	4.6	MSOP-10
SY88913V	1.25	3.3V/5V	LOS (PECL)	PECL	PECL	1x	1x	4.6	MSOP-10
SY88933AL	1.25	3.3V	SD (TTL)	PECL	PECL	4x	20x	3.5	MSOP-10
SY88933V	1.25	3.3V/5V	SD (TTL)	PECL	PECL	1x	1x	4.6	MSOP-10
SY88713V	0.622	3.3V/5V	SD (PECL)	PECL	PECL	1x	1X	4.6	MSOP-10
SY88803V	0.155	3.3V/5V	LOS (TTL)	PECL	PECL	1x	1X	4.6	MSOP-10
SY88813V	0.155	3.3V/5V	SD (PECL)	PECL	PECL	1x	1X	4.6	MSOP-10
SY88893V	0.155	3.3V/5V	SD (TTL)	PECL	PECL			4.6	MSOP-10
SY88883V	3.2	3.3V/5V	SD (TTL)	PECL	CML			4.6	MSOP-10
SY88793V	0.622	3.3V/5V	SD (TTL)	PECL	PECL			4.6	MSOP-10
SY88703V	0.622	3.3V/5V	LOS (PECL)	PECL	PECL			4.6	MSOP-10

CDRs with Integrated Clock Synthesis Selection Guide

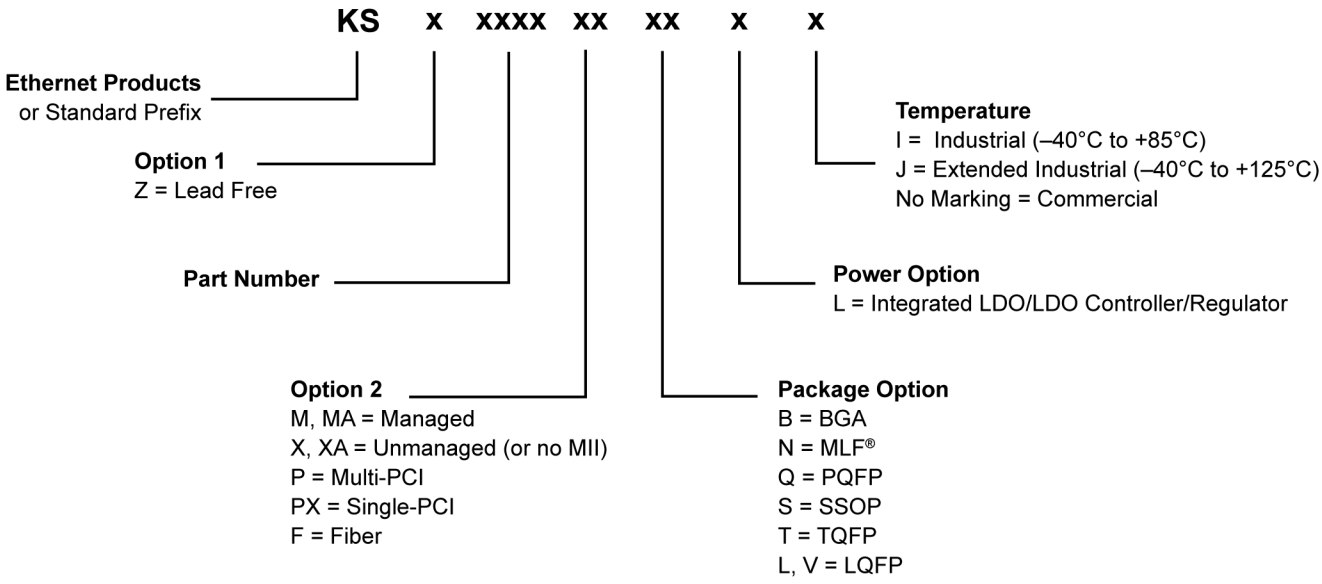
Integrated Clocking Solutions

Bold = New

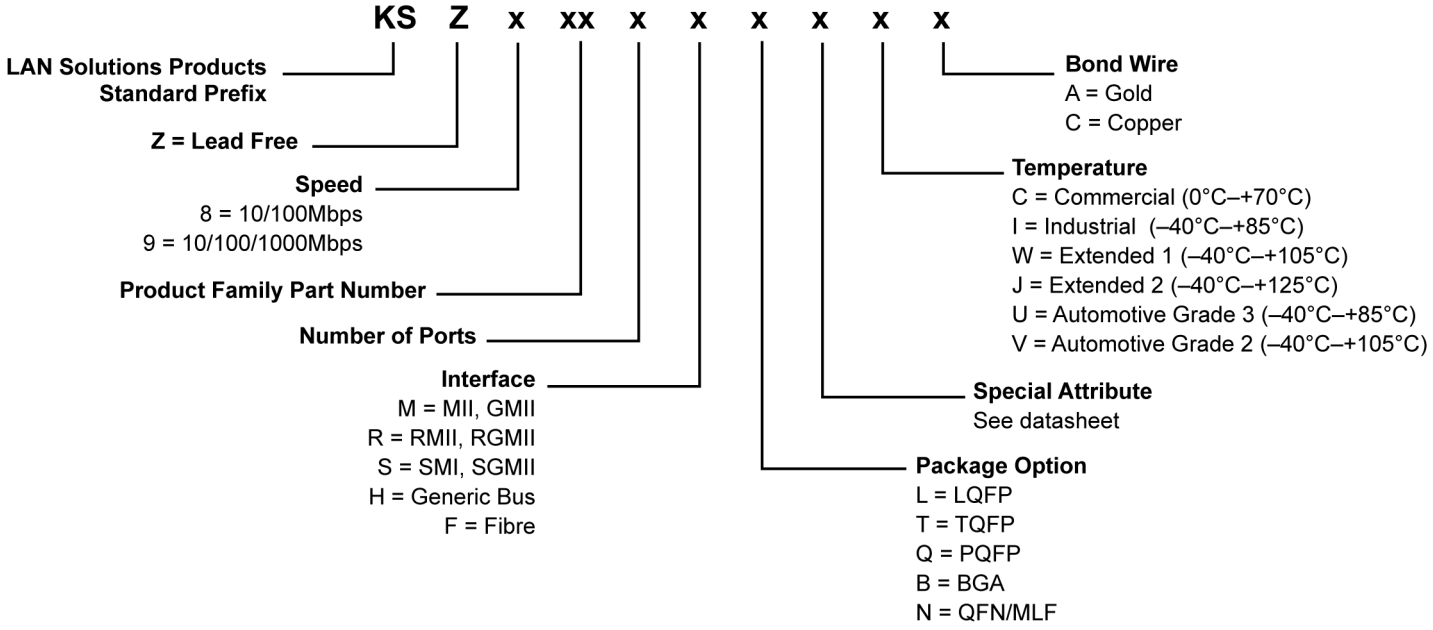
P/N	Description	Data Rate (Mbps)	Output Type	Supply Voltage	Package
SY69952	Clock Recovering Transceiver	51.84–155	PECL	5V	SOIC-28
SY69753L	Clock and Data Recovery	125-155	PECL	3.3V	eTQFP-64
SY69753AL	Clock and Data Recovery	125-155	PECL	3.3V	eTQFP-32
SY69754AL	Clock and Data Recovery	622	PECL	3.3V	eTQFP-32
SY87700V	AnyRate® Clock and Data Recovery	32–175	PECL	3.3/5V	eTQFP-32, SOIC-28
SY87700L	AnyRate® Clock and Data Recovery	32–175	PECL	3.3V	eTQFP-32, SOIC-28
SY87700AL	AnyRate® Clock and Data Recovery	32–208	PECL	3.3V	eTQFP-32, SOIC-28
SY87701V	AnyRate® Clock and Data Recovery	32–1250	PECL	3.3/5V	eTQFP-32, SOIC-28
SY87701L	AnyRate® Clock and Data Recovery	32–1250	PECL	3.3V	eTQFP-32, SOIC-28
SY87701AL	AnyRate® Clock and Data Recovery	28-1300	PECL	3.3V	eTQFP-32, SOIC-28
SY87721L	AnyRate® Clock and Data Recovery	28–2700	CML/PECL	3.3V	eTQFP-64
SY87813L	AnyRate® CDR w Differential Clock	28-1300	PECL	3.3V	eTQFP-32
SY87724L	AnyRate® MUX/DEMUX	2700	CML/PECL	3.3V	eTQFP-80
SY87725L	GPON/BPON ONU SERDES	2500	CML	3.3V	eTQFP-64
SY10/100E445	4-Bit DeMUX	2.5	PECL	5V	LPCC-28
SY10/100E446	4- Bit MUX	1.6	PECL	5V	LPCC-28

LAN Solutions Part Identification

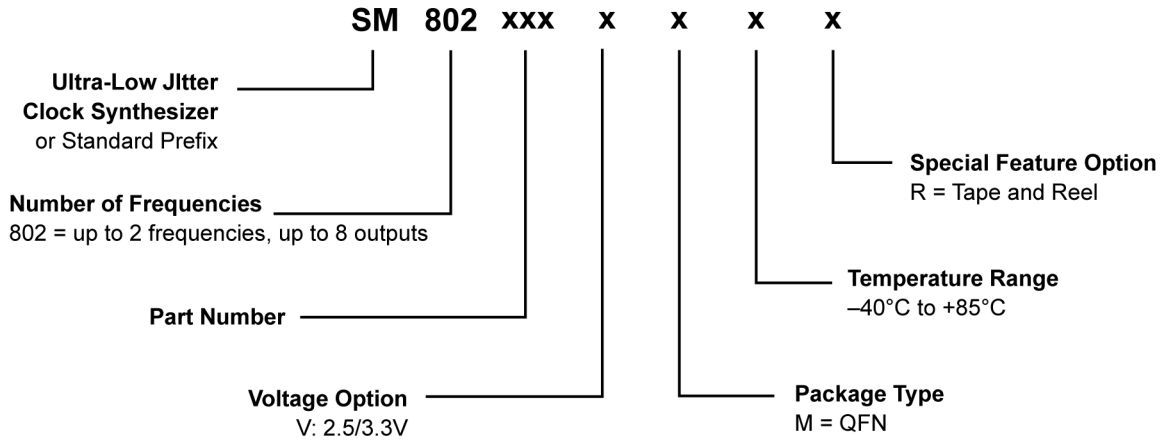
Legacy Part Identification



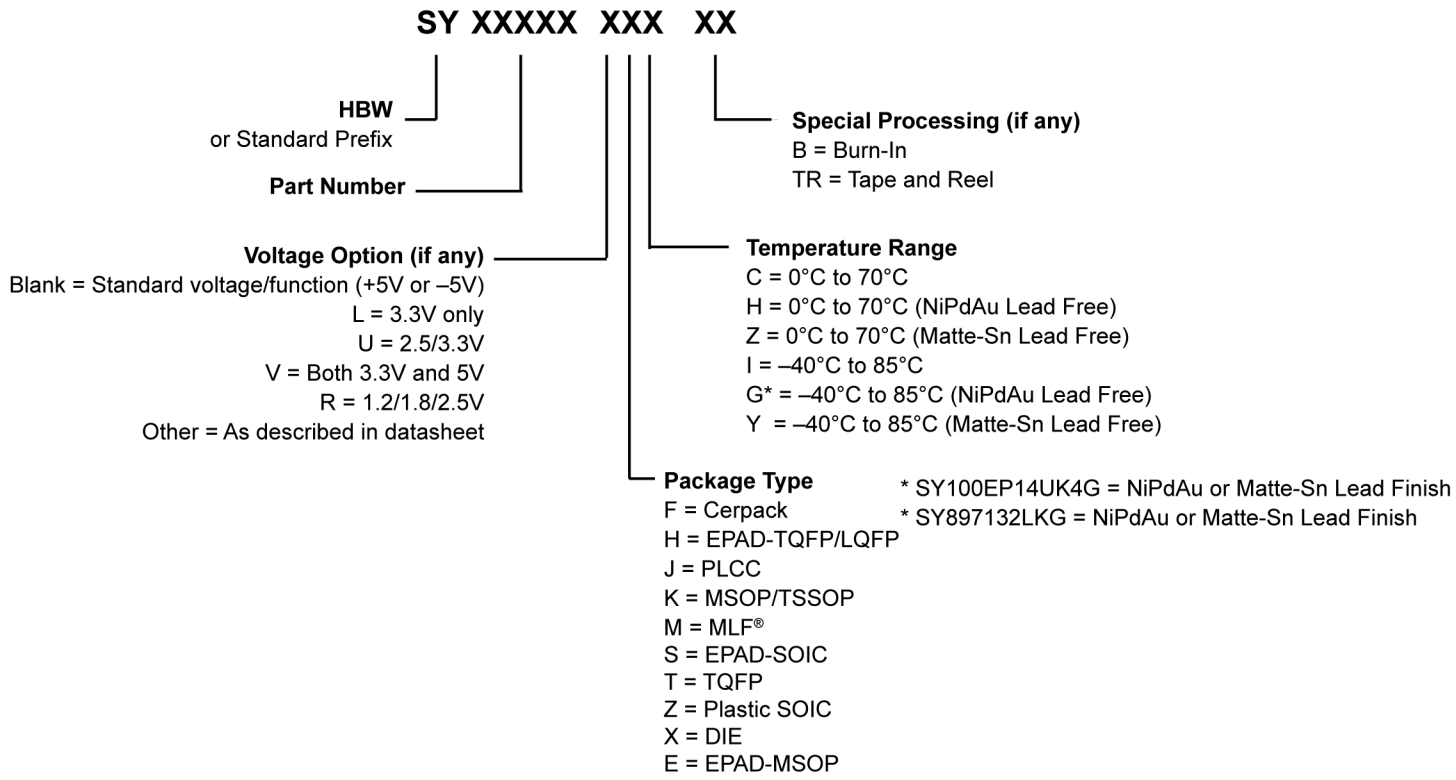
New Part Identification



Ultra-Low Jitter Clock Synthesizers Part Identification



Clock and Data Distribution Part Identification



High Performance Linear and Power Solutions Part Identification

Micrel Analog High Performance Linear and Power Solutions Standard

MIC xxxxxx xxx -xx A E X

Micrel
or Standard Prefix

MAQ
Q = AEC-Q100 Qualified

Part Number

Option 1
as required

Option 2
as required

Temperature

Package Style

Special Feature Option
TR, T5, TX, TZ = Tape and Reel
EV = Evaluation Board

A = -55°C to +125°C
B = -40°C to +85°C(1)
C = 0°C to +70°C

X = –55°C to +125°C (RoHS Compliant)(1)
V = –40°C to +125°C (RoHS Compliant)
W = –40°C to +85°C (RoHS Compliant with exception)(2)
Y = –40°C to +85°C (RoHS Compliant)(1)
Z = 0°C to +70°C (RoHS Compliant)

Notes:

1. Typically, industrial grade power products rate the junction temperature up to +125°C. Varies from device to device. Refer to the datasheet.
2. Applicable to TO-220, TO-247, TO-263, SOT-223, SPAK packages using 85% lead plus lead alloy die attach material. Refer to the datasheet.
3. Package outline drawing convention reference for “MLF” has changed to DFN or QFN. Please refer to the datasheet.

CS = WLCSP
C3 = SC70-3
C5 = SC70-5
C6 = SC70-6
D = TO-252
D5 = Thin SOT
D6 = Thin SOT
FL = MLF®
FT = Thin MLF or TMLF
GJ = Hybrid DFN (Height 1.1mm nominal)
GK = Hybrid DFN (Height 1.9mm nominal)
HL = Hybrid MLF
HJ = Hybrid MLF (Height 1.1mm nominal)
J = Ceramic DIP
JL = MLF
LQ = LQFP (Low Profile QFP)
M3 = SOT-23-3
M4 = SOT-143
M = 150-mil SOIC
ME = 150-mil EPAD-SOIC
MK = DFN (Height 0.75mm nominal)
ML = MLF
MM = MSOP
MME = EPAD-MSOP
MP = Hybrid DFN
MT = Thin MLF
MU = UTDFN
MX = XTDFN (Height 0.4mm max)
T = TO-220
TS = TSSOP
M5 = SOT-23-5
M6 = SOT-23-6
M8 = SOT-23-8
N = Plastic DIP
QS = QSOP
QSE = EPAD-QSOP
R = SPAK
S = SOT-223
SM = SSOP
TSE = EPAD-TSSOP
TQ = TQFP
TQE = EPAD-TQFP
U = TO-263
V = PLCC
WM = 300-mil Wide SOIC
WME = 300-mil Wide EPAD-SOIC
WT = TO-247

Industry Standard Voltage Supervisors

MIC xxxx – XX – XXX U X

Micrel
or Standard Prefix

Part Number

Option
as required

Voltage Option
as required

W = 1.7V
Z = 2.3V
P = 2.6V
R = 2.6V
S = 2.9V
T = 3.1V
J = 4.0V
M = 4.4V
L = 4.6V

OR...

x.x V if numeric

as required

Timeout or Tolerance Option
as required

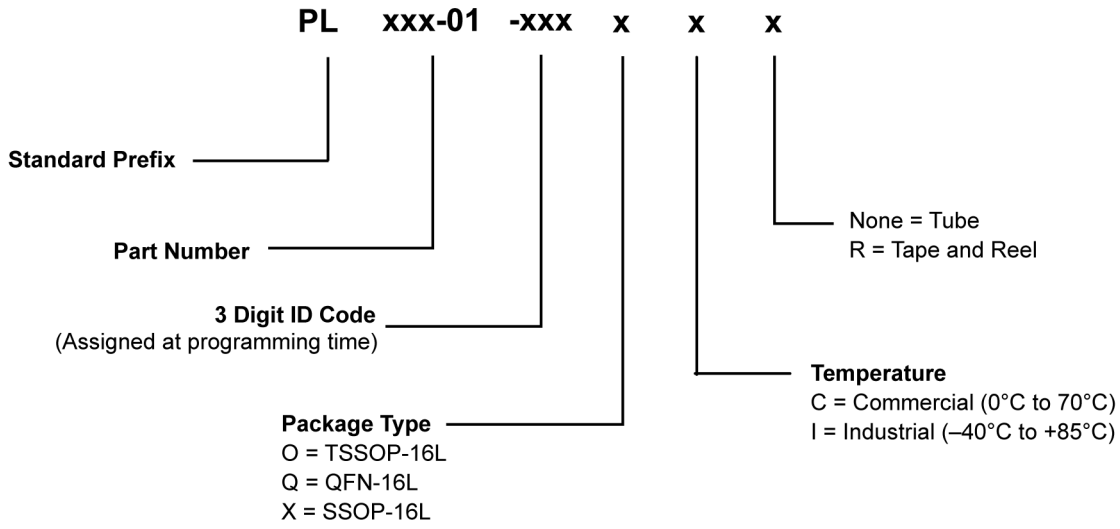
D1 = 1ms
D2 = 20ms
D3 = 140ms
D4 = 1120ms

5 = 5%
10 = 10%
15 = 15%
20 = 20%

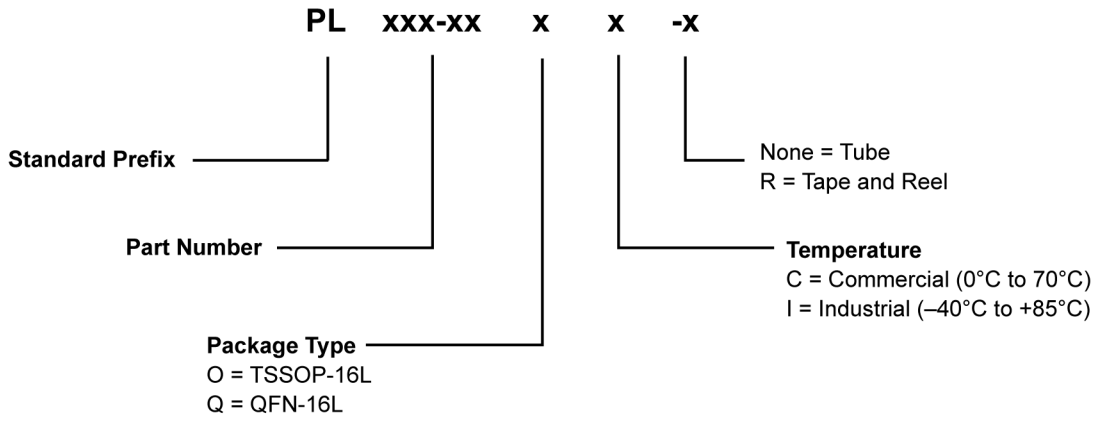
Package
N = PDIP
M = SOIC
U = SOT

Special Feature Option
TR, T5 = Tape and Reel
Y = Lead Free (Industrial)

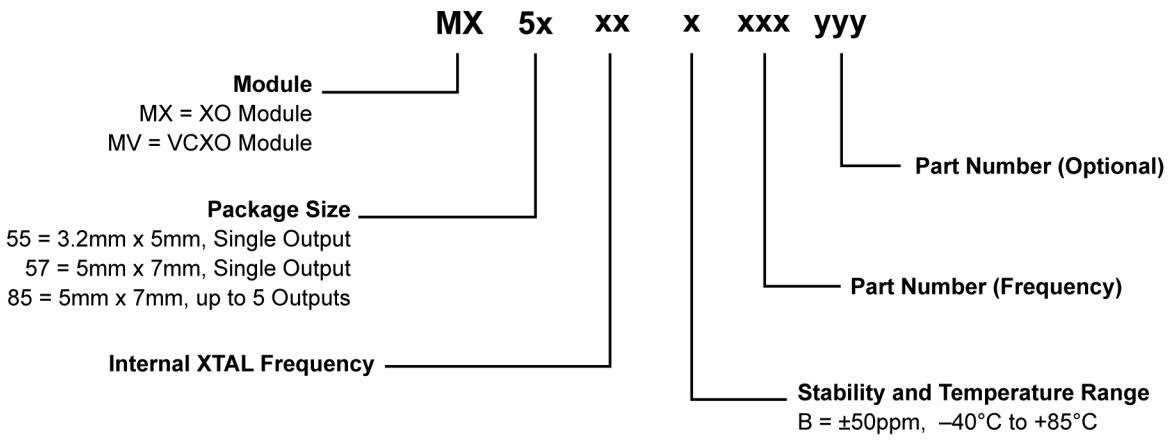
High-Speed Clock Programmable Part Identification



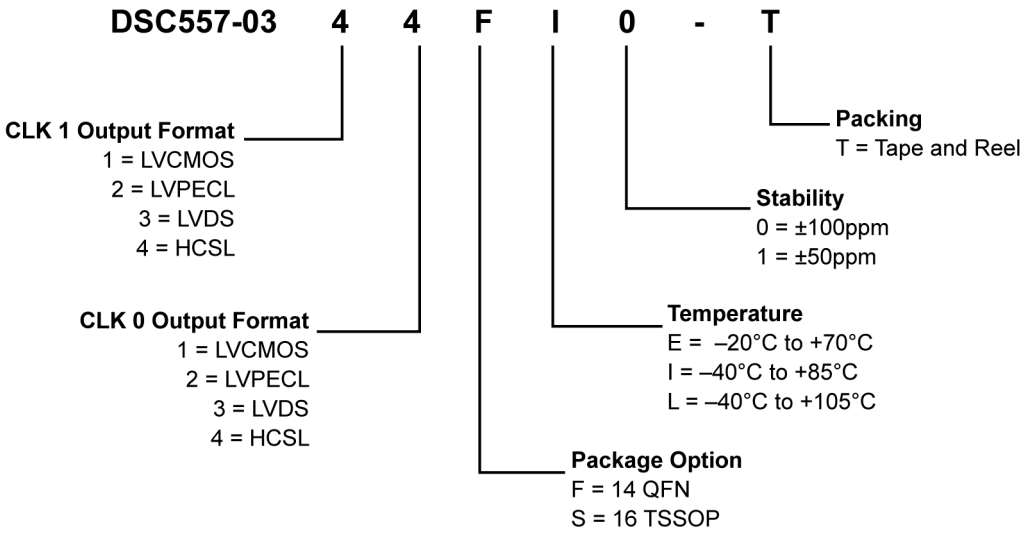
High-Speed Clock Non-Programmable Part Identification



XO/VCXO Clock Module Part Identification



Clock Generator Families Part Identification



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