

Product Selector Guide Q307



Power Management Selector Guide

Semtech offers feature rich, highly integrated power management solutions aimed at reducing BOM cost and providing design flexibility to meet applications requirements.

Semtech's latest power management portfolio consists of robust, highly efficient, integrated solutions in small form factor designed to conserve PCB real estate and streamline end-equipment manufacturing.

The wide breadth of product offering features: switching regulators and linear regulators & controllers, LED drivers and sinks, and battery chargers designed to provide an overall system solution.

Semtech Power Management provides

- High Power Density
- Highly integrated solutions in small form factor
- High reliability
- Low BOM cost

by utilizing Industry leading BCD process and strong technical support to address the needs of the following markets:

Portable devices

- Smallest and thinnest in industry: 1.5 x 1.5 x 0.6mm
- Simplified BOM using VID and serial control
- Low quiescent current and Powersave for increased battery life

Displays

- Solutions to support 1 or 6 string configurations
- Parts supporting screen sizes: 5"-19"
- Best current matching accuracy: 1-3%
- Best efficiency at maximum load: >90%

Integrated Access Devices/Telecom

- Simple Robust Solutions
- High Voltage Integration
- High Power Density
- Power Good & Soft-start
- Serial and Digital Control

Applications:

Portable/Personal Electronics

- Cellular Phones
- PDAs / Smart Phones
- GPS / Navigation
- Portable Instruments
- Medical Electronics

Broadband Communications

- VoIP
- WLAN
- xDSL Modems
- IP Telephony
- Cable Modems
- Set Top Boxes

Displays

- Backlight
- LCD Panels
- Car Navigation
- ATMs

Computing

- Servers
- Desktops
- Notebooks
- UMPCs

Multiple Output Asynchronous Regulator

Part Number	VIN (V)		# of outputs	VOUT (V)		Iout Max (A)	Isw Min (A)	Shutdown current (µA)	fsw (kHz)	Package	Features
	Min	Max		Min	Max						
SC2440	2.78	20	2	1	0.8* Vin	1.7/1.7	2.0/2.0	<60	250-2500	TSSOP-16 EDP	Independent shutdown, Soft-start and Power Good, external synchronization
SC2620	2.8	30	2	1	0.9* Vin	2/2	2.3/2.3	<60	100-1400	SO-16 EDP	Independent Soft-start and Power Good, low output ripple, external synchronization

Multiple Output Synchronous Regulator

Part Number	VIN (V)		# of outputs	VOUT (V)		Iout Max (A)	Isw Min (A)	Shutdown current (µA)	Quiescent current (µA)	fsw (kHz)	Package	Features
	Min	Max		Min	Max							
SC198	2.7	5.5	2	1.0/1.0	1.875/1.875	0.6/0.6	0.9/0.9	<1	50	1000	MLPQ-20, 4x4mm	8 programmable output voltage pairs Powersave, MODE/SYNC function
SC198A	2.7	5.5	2	1.0/1.8	1.8/3.3	0.8/0.8	1.2/1.2	<1	50	1000	MLPQ-20, 4x4mm	

Single Output Synchronous Regulator

Part Number	VIN (V)		VOUT (V)		Iout Max (A)	Isw Min (A)	Shutdown current (µA)	Quiescent current (µA)	fsw (kHz)	Package	Features
	Min	Max	Min	Max							
SC190	2.7	5.5	1	2.8	0.3	0.5	0.1	10	1000	MLPD-10, 3x3mm	Very low input ripple: <1mV, 4 VID programmable output voltages
SC191	2.7	5.5	1.2	1.2	0.33	0.55	0.1	See datasheet	1000	MLPD-8, 2.3x2.3mm	Very low noise, no external compensation required, LDO Mode
SC192	2.7	7	0.75	Vin	0.7	>1A	<1	35	750	MLPD-10, 3x3mm	Powersave, adjustable current limit
SC194A/B	2.7	5.5	1	3.6	1	1.33	0.1	17	1000	MLPD-10, 3x3mm	Fixed frequency or 750kHz to 1.25MHz synchronized operation, VID programmable output, Powersave
SC196A	2.7	5.5	1.0	1.8	1.5	1.9	0.1	17	1000	MLPD-10, 3x3mm	Fixed frequency or 750kHz to 1.25MHz synchronized operation, Powersave, 4 VID programmable output
SC196	2.5	5.5	0.8	Vin	1.5	1.96	0.1	17	1000	MLPD-UT10, 3x3x0.6mm	Fixed frequency or 750kHz to 1.25MHz synchronized operation
SC4624	2.3	5.5	0.5	Vin	4	<1.9	0.1	See datasheet	200-2000	SO-16 EDP, MLPQ-20, 4x4mm	Programmable Soft-start and current limit, Power Good, external synchronization

Single Output Asynchronous Regulator

Part Number	VIN (V)		VOUT (V)		Iout Max (A)	Isw Min (A)	Shutdown current (µA)	fsw (kHz)	Package	Features
	Min	Max	Min	Max						
SC4519(H)	3	16	1.2	0.85* Vin	2.7	3	<45	600	SO-8 EDP	External synchronization: 750kHz to 1.2MHz, independent synch and enable pins
		24			3	3.5				
SC4520	4.4	24	0.8	0.85* Vin	2.7	3	250	100-600	SO-8 EDP	Adjustable frequency, independent enable pin
SC4521	4.4	24	0.8	0.85* Vin	2.5	3.5	250	600	SO-8 EDP	Programmable Soft-start
SC4524A/B	3.0	30/16	1	0.8* Vin	2	2.6	18 or 33	200 to 2000	SO-8 EDP	Shutdown current: 18µA (Vin=5V), 33µA (Vin=12V)

Multiple Output Controller

*Values dependent on type of MOSFET used

Part Number	VIN (V)		# of outputs	VOUT (V)		Iout* Max (A)	Gate drive current (A)	On-time Min (ns)	fsw (kHz)	Control method	Package	Features
	Min	Max		Min	Max							
SC2441A	1.8	20	3	0.5	0.88* Vin	20/20/0.6	2	18	Up to 1000	Current	TSSOP-28 EDP	2 buck controllers + 1 boost regulator, pre-bias startup, external synchronization, 2 phase-1 output
SC2442(H)	4.75	30	2	0.75	0.85* Vin	10/10	0.5	-	Up to 500	Voltage	TSSOP-24	External synchronization, 7V AVCC/PVCC controller
		36										
SC2446	4.7	16	2	0.5	0.88* Vin	20/20	1.5	150	Up to 1000	Current	TSSOP-28 EDP	Separate Soft-start and Enable, sink/source available for DDR, external synchronization
SC2447	4.65	15	2	0.5	0.88* Vin	-	NA	-	Up to 1000	Current	TSSOP-28	Specially made for DrMOS type of FET, pre-bias startup, external synchronization, tri-state PWM, able to sink/source current
SC2545	4.5	28	2	0.75	0.9* Vin	10/10	0.5	-	100-300	Voltage	TSSOP-24, MLPQ-24, 4x4mm	Sequential & coincidental start-up tracking, Power Good
SC2672	4.5	15	2	0.9	0.9* Vin	20/20	1.7	-	Up to 300	Voltage	SO-16	Simple dual channel controller, Power Good
SC2677B	4.5	15	2	0.5	0.9* Vin	20/20	1.7	300	500	Voltage	TSSOP-24, TSSOP-24 EDP	Power Good, Soft-start, adjustable phase-shift, external synchronization
SC415	3	25	2	0.75	5.5	20/20	3.1	-	Up to 600	Constant on-time	MLP-24, 4x4mm	*SmartDrive™, Powersave
SC416	3	25	2	0.75	5.5	20/20	3.1	-	Up to 600	Constant on-time	MLP-24, 4x4mm	Startup/Shutdown tracking, Powersave, SmartDrive™

Step-down Switching Regulators / Controllers

Single Output Controllers

*Values dependent on type of MOSFET used

Part Number	VIN (V)		VOUT (V)		IOUT* Max (A)	Gate drive current (A)	Synch or Asynch	fsw (kHz)	Control method	Package	Features
	Min	Max	Min	Max							
SC2602L	4.2	12.6	0.8	0.95* Vin	20	1	Synch	200	Voltage	SO-14	Power Good, Enable, Soft-start
SC2608A	4.5	14	0.8	0.85* Vin	15	0.8	Synch	250	Voltage	SO-8	Integrated boot strap diode, Rds(on) current sensing
SC2618	4.75	14	1.25	12.6	6	0.5	Synch	—	Hysteretic	SOT-23-6	Internal 100µs Soft-start
SC411	1.8	25	0.5	5	15	3.1	Synch	Up to 600	Constant on-time	MLPQ-16, 4x4mm	SmartDrive™, Powersave, programmable frequency
SC412A	3	25	0.75	5	15	3.1	Synch	Up to 600	Constant on-time	MLPQ-16, 3x3mm	Powersave, programmable frequency
SC4508A	2.7	15	0.5	0.97* Vin	15	0.875	Asynch	Up to 1500	Current	MLPQ-12, 4x4mm	Buck & buck/boost (inverting configuration)
SC4510	4.75	16	0.5	0.75* Vin	25	1	Synch	100-1000	Current	TSSOP-20	Source & Sink Current, reference tracking, external synchronization, Power Good
SC4603	2.25	5.5	0.5	Vin	20	1	Synch	Up to 1000	Voltage	MSOP-10	Drive PMOS and NMOS, 100% duty ratio, external synchronization
SC4607				0.97* Vin							
SC4608	2.7	5.5	0.5	0.9* Vin	20	1	Synch	Up to 1000	Voltage	MLPQ-16, 4x4mm	Drive NMOSFET, synchronous switching frequency, adjustable current limit, Soft-start, Power Good
SC4612	4.5	28	0.5	0.82* Vin	40	1.7	Synch	1200	Voltage	SO-14, MLPD-12, 4x3mm	Programmable current limit, asynchronous start-up
SC4614	4	25	0.5	0.97* Vin	20	1.5	Synch	500	Voltage	MSOP-10	Internal gate-drive LDO, adaptive shoot-through protection
SC471(A)	3	25	0.75	5.25	20	3.1	Synch	Up to 600	Constant on-time	MLPQ-16, 3x3mm	SmartDrive™, Powersave, voltage margining

RF Power Amplifier Power

Part Number	VIN (V)		VOUT (V)		fsw (MHz)	IOUT (A)	Pass-thru IOUT (A) Max	Bypass FET RDSon (mΩ)	LDO VOUT (V)	LDO IOUT (A)	Transfer function	Package	Features
	Min	Max	Min	Max									
SC250	2.7	5	0.3	3.6	1	0.6	1	75	2.85	0.02	Vout=3x VDAC	MLPD-W8 2.3x2.3mm	Integrated PA bias LDO regulator, buck converter with analog control input (3x transfer function)
SC251	2.7	5	0.48	3.4	1	0.8	2.5	200	2.85	0.01	Dual Exponential	MLPD-10 3x3mm	Custom transfer function suited to Dual-Mode WCDMA PAs, external gate drive available for external pass-through FET, integrated PA bias regulator

DDR Regulator/Controllers (Switching & LDO)

Part Number	VCC (V)		VDDP (V)	IVDDP (A) Max	VTT type	VTT (V)	IVTT (A) Max	fsw (kHz)	Peak gate drive current (A)	DDR type	Synch or Asynch	Integrated driver	Package	Features
	Min	Max												
SC1116	3	15	0.5-2.5	5	LDO	0.25-1.25	5	-	-	1,2,3	Asynch	No	SOT-23 6L	Simple DDR LDO controller
SC1480A	1.8	25	N/A	N/A	Switcher	0.6-5	20	Up to 600	3.1	1,2,3	Synch	Yes	TSSOP-14	Powersave, SmartDrive™
SC1486A	1.8	25	0.5-5.5	20	Switcher	0.25-2.75	20	Up to 600	3.1	1,2,3	Synch	Yes	TSSOP-28	Powersave, SmartDrive™
SC2446	4.7	16	1	20	Switcher	0.5	20	Up to 1000	1.5	1,2,3	Synch	Yes	TSSOP-28	Individual Soft-start and Enable, Sink/source available for DDR
SC2447	4.65	15	N/A	N/A	Switcher	0.5	60	Up to 1000	-	1,2,3	Synch	Yes	TSSOP-28	Dual 30A or 2-phase 60A output, optimized for Phillips or Renesas DrMOS
SC2595	2.5	5	2.5	1.5	LDO	1.25	1.5	-	-	1	Asynch	No	SO-8, MLPQ-16 4x4mm	Pin-to-pin compatible with LP2995/6
SC2596	2.1	5.5	1.5	See Features	LDO	0.75	See Features	-	-	1,2,3	Asynch	No	SO-8 EDP	1.5A for DDR1 and 2.5A for DDR2
SC4510	4.75	16	0.6-6	15	Switcher	0.3-3.0	15	100-1000	1	1,2,3	Synch	Yes	TSSOP-20	Power Good
SC486	2.5	25	1.5-3.0	20	LDO	0.75-1.5	3	Up to 600	3.1	1,2,3	Synch	Yes	MLPQ-24 4x4mm	SmartDrive™

CPU & GPU Controllers

Processor Power

* Recommended values based on typical inductors and FETs

Part Number	VIN (V)		VOUT (V)		IOUT (A)*	fsw (kHz)	Platform	Integrated driver	Package	Features
	Min	Max	Min	Max	Max					
SC450	3	30	0.7	1.708	55	200-500	Intel	Yes	TSSOP-38	Dual Phase, IMVP 4/4+
SC451	3	30	0.7	1.708	30	200-500	Intel	Yes	TSSOP-38, TSSOP-28	Single Phase, IMVP 4/4+
SC452	4.5	30	0.3	1.5	55	200-500	Intel	Yes	MLP-44, 7x7mm	Dual Phase, IMVP 6/6+
SC453	3	30	0.7	1.708	30	200-500	VIA C7	Yes	TSSOP-28	Single Phase, 6 bit DAC
SC454	3	30	0.3	1.5	30	200-500	Intel	Yes	MLP-32, 5x5mm	Single Phase, IMVP 6/6+
SC457	3	30	0.3	1.5	30	200-500	Freescale	Yes	MLP-32, 5x5mm	Single Phase, 7 bit DAC
SC458	3	30	0.3	1.5	55	200-500	Freescale	Yes	MLP-44, 7x7mm	Dual Phase, 7 bit DAC

Graphics Processor Power

Part Number	VIN (V)		VOUT (V)		IOUT (A)	fsw (kHz)	# of VIDs	Intended chipset	Integrated driver	Package	Features
	Min	Max	Min	Max	Max						
SC471(A)	3	25	0.75	5.25	20	325	2	Intel, Nvidia	Yes	MLPQ-16, 3x3mm	SmartDrive™, Powersave
SC472B	3	25	0.75	1.15	30	200-500	5	Intel	Yes	MLP-24, 4x4mm	IMVP 6/6+
SC473	3	25	0.375	1.15	30	200-500	5	ATI	Yes	MLPQ-24, 4x4mm	Power monitor
SC475A	3	25	0.75	5.25	20	325	1	ATI	Yes	MLPQ-16, 3x3mm	SmartDrive™, Powersave

Step-up Switching Regulators / Controllers

Single Output Step-up Controllers

Part Number	VIN (V)		VOUT (V)		IOUT (A)	Gate drive current (A)	Shutdown current (µA)	Quiescent current (mA)	fsw (kHz)	Package	Features
	Min	Max	Min	Max	Max						
SC2603	4.5	16	4.5	* (1)	* (2)	0.8	5	8	200	SOT23-6	Internal compensation, over-current protection

* (1)= External FET Voltage * (2) Iout is function of Vin, Vo, Fsw, and inductor value

Single Output Step-up Regulators

Part Number	VIN (V)		VOUT (V)		IOUT (A)	Isw (A)	Shutdown current (µA)	Quiescent current (mA)	fsw (kHz)	Package	Features
	Min	Max	Min	Max	Max	Min					
SC4501	1.4	16	1.4	30	*	2	<18	1.6	Up to 2000	MSOP-8 EDP MLPD-10, 3x3mm	Adjustable frequency and UVLO, programmable Soft-start, SEPIC configuration
SC4502	1.4	16	1.4	32	*	1.4	10	1.1	Up to 2000	MLPD-10, 3x3mm	Adjustable frequency, programmable Soft-start, SEPIC configuration
SC4502H				40							
SC4503	2.5	20	3	25	*	1.4	<1	1.1	Up to 1300	TSOT-23	Programmable Soft-start, can be used in SEPIC configuration

* Iout is function of Vin, Vo, Fs and inductor values.

Inverting Buck / Boost Controller

Part Number	VIN (V)		VOUT (V)		IOUT (A)	Gate drive RDSon (Ω)	Shutdown current (µA)	Quiescent current (mA)	fsw (kHz)	Package	Features
	Min	Max	Min	Max	Max						
SC4508A	2.7	15	-0.5	* (1)	* (2)	8	<500	3	100-1500	MLPQ, 4x4mm	Current mode control, can be used buck or inverting buck/boost configuration

* (1)= External FET Voltage * (2) Iout is function of Vin, Vo, Fsw, and inductor value

LDOs

Single Output LDOs

Part Number	VIN (V)		VOUT (V)		IOUT (A)	VDROPOUT (V) Max	Enable Pin (Y/N)	Pgood? (Y/N)	Package	Features
	Min	Max	Min	Max	Max					
EZ1580 EZ1581 EZ1582 EZ1583	2.0*	7.0	1.3	5.7	7	0.8	N	N	TO-263-5, TO-220-5	Remote sense (Kelvin Connection), 0.5% initial accuracy, fast transient response
SC1202	2.65	7	1.3	5.7	0.6	1.3	N	N	SOT-223	Fast response time, line regulation 0.2% (max.), load regulation 0.4% (max.)
SC1563	2.2	6.5	1.2	4.8	0.5	0.7	Y	N	SOT-23-5	Fixed and adjustable versions, works with ceramic capacitors
SC1565	2.2	5.5	1.2	4.8	1.5	0.6	Y	N	TO-263-5, SO-8, SOT-223, TO-263-3	Works with ceramic capacitors, 10µA quiescent current in shutdown, fixed and adjustable versions
SC1566	2.2	5.5	1.2	4.8	3	0.45	Y	N	TO-220-5, TO-263-3, TO-220-3, TO-263-5	Works with ceramic capacitors, 350mV _{DROPOUT} typical @ 3A, 10µA quiescent current in shutdown, fixed and adjustable versions
SC1592	1.25*	16	0.8	V _{IN} -V _{DROPOUT}	3	0.52	Y	N	TO-263-7, SO-8 EDP	1% voltage reference over-temperature
SC4205	2.2	5.5	1.2	4.8	1	0.4	Y	N	SO-8 EDP	10µA quiescent current in shutdown, over-current and over-temperature protection
SC4211	1.4	5.5	0.5	V _{IN} -V _{DROPOUT}	1	0.4	Y	N	SO-8 EDP	Simple LDO, adjustable output, low Vin ≧ 1.4V
SC4215A	1.4	6.0	0.5	V _{IN} -V _{DROPOUT}	2	0.4	Y	N	SO-8 EDP	
SC4216	1.45	5.5	0.5	V _{IN} -V _{DROPOUT}	3	0.55	Y	N	SO-8 EDP	
SC553	2.25	6.5	1.25	6	0.15	0.23	Y	N	SOT-23-5	2% output accuracy guaranteed over line, load and temperature, 75µA typical supply current over line and load, industry standard pinout

Multiple Output LDOs

* Control voltage also required. See datasheet.

Part Number	VIN (V)		VOUT (V)		IOUT (mA)	VDROPOUT (mV)	Pgood? (Y/N)	IQ (µA)	Enable pin (Y/N)	# of LDOs	Noise (µVRMS)	PSRR (dB)	Serial interface	Package	Features
	Min	Max	Min	Max											
SC560	2.5	5.5	1.2	3.3	300*	100	Y	100	Y	2	50	65	No	MLPQ-UT8 1.5x1.5x0.6mm	Power Good / dual enable / low noise Features available by option
SC900	2.75	5.5	1.45	3	150-200*	150	Y	190**	Y	5	45-55	60	Yes, I ² C	MLPQ-20, 4x4mm	Independent I ² C control of enable/disable, output voltages and Power Good flag
SC900A				3.3											
SC905	2.7	5.5	1.35	2.9	80-300*	250-350	Y	300** 190	Y	9	45	50-65	Yes, I ² C	MLPQ-32, 5x5mm	4 general purpose LDOs, 5 low noise LDOs, power on control
SC905A				3.3											

* Per output ** All regulators active

LDO Controllers

Part Number	VIN (V)		VOUT (V)		# Channels	VDROPOUT (V)	Enable pin (Y/N)	Pgood? (Y/N)	Package	Features
	Min	Max	Min	Max						
SC338(A)	4.5	13.2	0.5	3.3	2	user selectable	Y	Y	MSOP-10	Output regulation: +/-2.5% for SC338 and +/- 1.5% for SC338A
SC339	4.5	5.5	0.5	3.0	1	user selectable	Y	Y	SOT-23-6	Soft-start, tight output regulation: +/- 1% over temperature

LED Drivers / Sinks

LED Current Sinks

Part Number	VIN (V)		Sink dropout voltage (mV)	Sink current range (mA)	Sink quantity	Control interface	Dimming	Package	Features
	Min	Max							
SC620	2.7	5.5	150	31.25µA - 25mA	8	I ² C Interface	Register	MLPQ-UT-16 3x3x0.6mm	Output expansion capability, individually controllable current sinks

LED Drivers / Sinks

Inductor Based LED Drivers

Part Number	VIN (V)		Vout (V)	Output disconnect (Y/N)	fsw (MHz)	# of Strings	Max # LEDs/String	Serial interface	Dimming	Package	Features
	Min	Max	Max								
SC104	1.75	10	38	N	Various	1	10	None	Analog/PWM	MLP-8, 3x3mm	Up to 10 white LEDs in series
SC440	4.5	21	36	N	0.8	6	10	None	PWM	MLPQ-24, 4x4mm	6 strings @30mA per string
SC441	4.5	21	36	N	0.8	4	10	None	PWM	TSSOP-20	4 strings @150mA per string
SC4505	2.6	16	36	Y	1	2	6	None	PWM	MLPQ-16, 3x3mm	2 current sinks, flash with safety timer, single inductor
SC4509	2.7	10	20	N	1.2	1	5	None	PWM	SOT-23-6, MLPD-W8 2x2x0.75mm	Integrated Schottky Diode, low 200mV feedback voltage
SC4538	2.8	5.5	38	Y	0.8	1	10	None	Analog/PWM	MLPD-8 2x2x0.6mm	Drives up to 10 white LEDs in series at up to 30mA, output disconnect
SC4540		16									
SC4539	2.8	5.5	22	Y	0.8	1	6	None	Analog/PWM	MLPD-8 2x2x0.6mm	Drives up to 6 white LEDs in series at up to 30mA, output disconnect, can use 25V ceramic COU

Charge Pump Based LED Drivers

Part Number	VIN (V)		Vout (V)	fsw (kHz)	Iout (mA)	Mode	Backlight sink current (mA)	Flash Sink current (mA)	Spotlight to flash ratio (%)	Flash safety timer	Control interface	Dimming	Package	Features	
	Min	Max	Max		Max		Max	Max							
SC600	2.5	6.5	4, 4.5, 5	8, 32, 262, 650	60, 120	Fractional	-	-	N/A	-	None	PWM	MSOP-10, MLPD-10 3x3mm	Low noise	
SC603	2.5	6.5	4.5, 5	262, 650	160, 200	Doubler	-	-	N/A	-	None	PWM	MLPD-10 3x3mm	High current	
SC613					100, 400										
SC606	2.85	5.5	-	250, 1330	120	Fractional	32	-	N/A	-	I ² C	Register	MLPQ-16 4x4mm	6 backlight sinks, low noise, tight accuracy and matching, high efficiency	
SC614	3	5.5	-	250, 1330	434	Fractional	32	102	N/A	N/A	I ² C	Register	MLPQ-24 4x4mm	4 backlight sinks, 3 flash sinks, main plus sub plus flash capable, high efficiency flash	
SC605	3	5.25	-	250	700	Doubler	-	-	20, 30, 40	N/A	None	-	MLPD-10 3x3mm	Individual spotlight and flash control pins	
SC615(A)					700(A)										20 (40)
SC635					200										40
SC618	3	5.25	-	250	700	Single, Doubler	-	-	40	Yes	None	-	MLPD-10 3x3x0.6mm	1x mode, flash safety timer, individual spotlight and flash control pins	
SC619					20										
SC621(A)	3	5.5	-	250	500	Fractional	25	400	Programmable	Yes	SemWire™, I ² C (A)	Register	MLPQ-UT-20 3x3x0.6mm	Two 100mA low noise LDOs, four 25mA backlight sinks, one 400mA flash sink with dedicated enable	
SC622(A)	3	5.5	-	250	400	Fractional	N/A	400	Programmable	Yes	SemWire™, I ² C (A)	Register	MLPQ-UT-20 3x3x0.6mm	Two 100mA low noise LDOs, one 400mA flash sink with dedicated enable	
SC623(A)	3	5.5	-	250	500	Fractional	25	400	Programmable	Yes	SemWire™, I ² C (A)	Register	MLPQ-UT-20 3x3x0.6mm	Four 25mA backlight sinks, one 400mA flash sink with dedicated enable	
SC624(A)	3	5.5	-	250	100	Fractional	25	N/A	N/A	N/A	SemWire™, I ² C (A)	Register	MLPQ-UT-20 3x3x0.6mm	Two 100mA low noise LDOs, four 25mA backlight sinks	
SC627(A)	3	5.5	-	250	800	Fractional	25	700	Programmable	Yes	SemWire™, I ² C (A)	Register	MLPQ-UT-20 3x3x0.6mm	Two 100mA low noise LDOs, four 25mA backlight sinks, one 700mA flash sink with dedicated enable	

Charge Pump Regulators

Part Number	Vin (V)		Vout (V)	Iout (A)	fsw (kHz)	Mode	Package	Features
	Min	Max	Range	Max				
SC1462	1.65	5.5	11 (max)	80	160	Doubler	SOT-23-6	94% efficiency @ 3.6V Vin, integrated protection diode
SC600	2.5	6.5	4, 4.5, 5	60, 120	8, 32, 262, 650	Fractional	MSOP-10, MLPD-10, 3x3mm	Very low noise, regulated output
SC603	2.5	6.5	4.5, 5	160, 200	262, 650	Doubler	MLPD-10, 3x3mm	Minimal BOM
SC613				100, 140				

Linear Battery Chargers

Part Number	Max. charge current (A)/ accuracy		Operating input voltage (V)		Input voltage withstand (V)	Output voltage (V)	Output voltage accuracy (%)	LDO mode	NTC interface	Safety timer	Charge current monitor output	Charger present indicator	Charge status indicator	Fault indicator	Package	Features
			Min	Max												
SC801	1.5	+/- 50mA	4.2	6.5	14	4.1, 4.2, ADJ	+/-1	Yes	No	No	No	Yes	Yes	Yes	MLPQ-16 4x4mm	High input voltage protection, high current, programmable pre-, fast- and termination charge current
SC803					7											
SC802	1	+/- 50mA	4.3	6.5	14	4.1, 4.2, ADJ	+/-1	Yes	Yes	Yes	Yes	Yes	Yes	MLPQ-16 4x4mm	Fully featured, high input voltage protection, programmable pre-, fast- and termination current	
SC802A		+/- 60mA														
SC805A	1	+/- 5%	3.5	5.9	7	4.2	+/-1	Yes	Yes	Yes	No	Yes	Yes	Yes	MLPD-10 3x3mm	Fully featured, programmable pre-, fast- and termination current
SC806	1	+/- 5%	3.15	6.3	7	4.2	+/-1	No	Yes	No	No	Yes	Yes	Yes	MLPD-10 3x3mm	Programmable pre-, fast- and termination current

Combo Regulators / Controllers

Part Number	Topologies	Vin (V)		Vout (V)		Iout Max (A)	Package	Features
		Min	Max	Min	Max			
SC1109	1 buck controller + 2 LDO controllers	4.4	5.25	1.2	0.9* Vin	10/2	SO-16	200/500kHz for buck, Power Good, programmable current limit
SC2441A	2 buck controllers + 1 boost regulator	1.8	20	0.5	0.88* Vin	20/20/0.6	TSSOP-28	Up to 1MHz Frequency, Prebias startup, external synchronization, 2 phase-1 output
SC2463	2 buck controllers + 2 LDO controllers	4.5	30	0.5	0.8* Vin	20/20/2/2	TSSOP-28	Up to 1MHz frequency, auto startup sequence
SC2621A	1 buck controller + 1 LDO controller	4	25	0.5	0.97* Vin	20/2	SO-14	1.5A gate drive for buck controller, NFET LDO controller

uPMIC

Part Number	V _{IN} (V)		# of LDOs	LDO output voltage range (V)	LDO output current range (V)	# of DC-DCs	DC-DC output voltage range (V)	DC-DC output current range (A)	Charger (Y/N)	Fast charge current (A) (Y/N)	Interface	Package	Features
	Min	Max											
SC905	2.7	5.5	9	1.35-2.9	80-300*	0	N/A	None	Interface only	N	Serial (I ² C)	MLPQ-32 5x5mm	Power on Control, optional interface for charger, 4 LDOs, 5 low noise LDOs
SC905A	2.7	5.5	9	1.35-3.3									Dedicated system "on/off" pin, power on signal for charger, 4 LDOs, 5 low noise LDOs, optional vibrator motor drive capability

Isolated PWM Controllers

Part Number	Start Up current (μA) Max	Topologies	# of outputs	Mode of operation	fsw (kHz)	Max duty cycle	Turn on threshold (V _{MAX})	Package	Features
SC4806	150	Pushpull, Full Bridge, Half Bridge	2	Voltage Mode or Current Mode	1000	49% each channel	8.6	MLPQ-12 4x4mm	Independent Soft-start, shutdown, UVLO
SC4808B-2	150	Pushpull, Full Bridge, Half Bridge	2	Voltage Mode or Current Mode	1000	50% each channel	4.4	MSOP-10	UVLO, external synchronization
SC4809A	110	Forward / Flyback, Boost	1	Voltage Mode or Current Mode	1000	90%	4.5	MSOP-10	Programmable duty cycle
SC4809B							12		
SC4809C							6.95		
SC4810B/E	250	Forward / Flyback	2	Voltage Mode or Current Mode	1000	90%	8.8	TSSOP-16, MLPQ-16 4x4mm	Dual-phase mode of operation for low ripple
SC4905A	100	Forward / Flyback, Boost	1	Voltage Mode	1000	90%	4.6	MSOP-10	External synchronization
SC4905B							12		
SC4911	80	Flyback	1	Voltage Mode	500	57%	7	MSOP-8	Ultra low startup current: <45μA (Typical), UVLO

Voltage References

Part Number	V _{IN} (V)		Ref voltage (V)	Accuracy (%)	Package	Features
	Min	Max				
SC431	2.5	36	2.5	0.5	SOT23/SO-8	Adjustable shunt regulator
SC431L	1.24	20	1.24	0.25	SOT23/SOT-23-5	Low voltage adjustable shunt regulator
SC4431	1.5	15	1.224	0.5	SOT-23-5	Adjustable shunt regulator with open collector output for driving optical isolator

MOSFET Drivers

Part Number	V _{IN} (V)		Gate drive current (A)	Rise/Fall time (ns)	Prop delay (ns)	Package	Features
	Min	Max					
SC1301A	4.5	16.5	2	15	60	SOT23-5	TTL compatible input, non-inverting output
SC1302	4.5	16.5	2	20	40	SO-8	TTL compatible input, UVLO

Visit our website to locate the most current product specifications, datasheets and contact information for your local Semtech Field Applications Engineer.