

STEP-DOWN REGULATORS | AUTOMOTIVE

Synchronous Step-Down (6V)

Part Number	V _{IN} (Min) (V)	V _{IN} (Max) (V)	I _{OUT} (A)	I _{SW} Limit (Typ) (A)	I _Q (Typ) (mA)	V _{FB} (V)	F _{SW} (kHz)	Soft-Start	External Sync	Package	Notes	Status
MPQ2171-AEC1	2.5	5.5	1.0			0.6	2200	Int	✓	TSOT23-8	Output Discharge, 100% Duty Cycle, Constant On Time	Sampling
MPQ2172-AEC1	2.5	5.5	2.0			0.6	2200	Int	✓	TSOT23-8	Output Discharge, 100% Duty Cycle, Constant On Time	Sampling
New MPQ2143-AEC1	2.5	5.5	3.0	4.8	0.04	0.6	1200	Int		TSOT23-8	Output Discharge, 100% Duty Cycle, Constant On Time	Production
MPQ2167-AEC1	2.7	6.0	4.0		0.05	0.6	2200 Adj.	Ext	✓	QFN11 (2x3)	100% Duty Cycle Operation	Sampling
MPQ2166-AEC1	2.7	6.0	4.0		0.06	0.6	3000 Adj.	Ext	✓	QFN18 (2x3) +WF+	Dual Outputs of 2A/2A or 1A/3A, 100% Duty Cycle Operation, Select. Forced CCM or AAM, Spread Spectrum	Sampling

Synchronous Step-Down (36V)

Part Number	V _{IN} (Min) (V)	V _{IN} (Max) (V)	I _{OUT} (A)	I _{SW} Limit (Typ) (A)	I _Q (Typ) (mA)	V _{FB} (V)	F _{SW} (kHz)	Soft-Start	External Sync	Package	Notes	Status
MPQ4431-AEC1	3.3	36	1.0	2.5	0.01	0.80	2500 Adj.	Ext	✓	QFN16 (3x4) +WF+	Low I _Q , Select. Forced CCM or AAM, Prog. Soft-Start Time, Good EMI, Low Dropout Mode	Sampling
New MPQ4415M-AEC1	4.0	36	1.5	4.0	0.6	0.81	2200	Int	✓	QFN13 (2.5x3)	Forced CCM Mode	Production
MPQ4420H-AEC1	4	36	2.0	4.2	0.5	0.79	410	Int	✓	TSOT23-8	A Version: Forced CCM Mode	Production
MPQ4420A-AEC1	4	36	2.0	5.6	0.6	0.79	410	Int	✓	TSOT23-8	A Version: Forced CCM Mode	Production
New MPQ4432-AEC1	3.3	36	2.2	5.2	0.01	0.80	2500 Adj.	Ext	✓	QFN16 (3x4) +WF+	Low I _Q , Select. Forced CCM or AAM, Prog. Soft-Start Time, Good EMI, Low Dropout Mode	Production
New MPQ4433-AEC1	3.3	36	3.0	5.8	0.01	0.80	2500 Adj.	Ext	✓	QFN16 (3x4) +WF+	Low I _Q , Select. Forced CCM or AAM, Prog. Soft-Start Time, Good EMI, Low Dropout Mode	Production
MPQ4423H-AEC1	4	36	3.0	4.4	0.5	0.79	410	Int	✓	QFN8 (3x3)	A Version: Forced CCM Mode	Production
MPQ4423A-AEC1	4	36	3.0	5.7	0.6	0.79	410	Int	✓	QFN8 (3x3)	A Version: Forced CCM Mode	Production
MPQ4473-AEC1	4.5	36	3.5	6.6	0.5	0.82	Adj. 200 - 1000	Ext		QFN20 (3x4)	Programmable Soft-Start Time SCP, OCP, No OVP Latch	Production
New MPQ4430-AEC1	3.3	36	3.5	5.8	0.01	0.80	2500 Adj.	Ext	✓	QFN16 (3x4) +WF+	Low I _Q , Select. Forced CCM or AAM, Prog. Soft-Start Time, Good EMI, Low Dropout Mode	Production
MPQ4470-AEC1 MPQ4470A-AEC1	4.5	36	5.0	8.0	0.5	0.82	Adj. 100 - 1000	Ext		QFN20 (3x4)	Programmable Soft-Start Time SCP, OCP. A Version: No OVP Latch; Non-A: OVP Latch	Production

Note: +WF+ Available with Wettable Flank

STEP-DOWN REGULATORS | AUTOMOTIVE

Synchronous Step-Down (55-75V)

Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (A)	ISW Limit (Typ) (A)	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Soft Start	External Sync	Package	Notes	Status
MPQ4570-AEC1	4.5	55	3.0	5.7	0.45	1.00	Adj.	Ext	✓	TSSOP-20 EP		Production
MPQ4569-AEC1	4.5	75	0.3	0.7	0.02	1	Adj.	Ext		QFN10 (3x3) SOIC8E	Wide VIN, Programmable Soft Start	Production
MPQ2420-AEC1	4.5	75	0.3	0.7	0.02	1	Adj.	Ext		TSSOP-16 EP	Windowed Watchdog Function	Production

Step-Down Controllers

Part Number	VIN (Min) (V)	VIN (Max) (V)	IQ (Typ) (mA)	ISD (Typ) (μA)	VFB (V)	FSW (kHz)	Soft Start	External Sync	Package	Notes	Status
MPQ2908A-AEC1	4	60	0.8	0.50	0.8	1000 (Adj.)	Ext	✓	TSSOP-20 EP QFN20 (3x4)	PG, Programmable CCM, AAM, Pulse-Skipping Mode, High Max Duty Cycle (99.5%)	Sampling
MPQ2918-AEC1	4	40	0.8	0.50	0.8	1000 (Adj.)	Ext	✓	TSSOP-20 EP QFN20 (3x4)	PG, Programmable CCM, AAM, Pulse-Skipping Mode, High Max Duty Cycle (99.5%)	Sampling

Step-Down Modules

Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (A)	ISW Limit (Typ) (A)	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Package	Notes	Status
New MPM3515-AEC1	4	36	1.5	4	0.60	0.8	2200	QFN17 (3x5x1.6) +WF+	Complete SMPS, Integrated OCP, Frequency Foldback at High Voltage, Forced CCM	Production

Multi-Output Synchronous Step-Down and PMIC

Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (A)	# of Rails	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Soft Start	External Sync	Package	Notes	Status
MPQ2166-AEC1	2.7	6	4.0	2	0.06	0.6	3000 (Adj.)	Ext	✓	QFN18 (2x3) +WF+	Dual Outputs of 2A/2A or 1A/3A, 100% Duty Cycle Operation, Select Forced CCM or AAM, Spread Spectrum	Sampling

Note: +WF+ Available with Wetttable Flank

STEP-DOWN REGULATORS | AUTOMOTIVE

Non-Synchronous Step-Down

Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (A)	ISW Limit (Typ) (A)	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Soft Start	External Sync	Package	Notes	Status
MPQ2362-AEC1	4.75	23	Dual 2	3.4	2.00	1.2	380	Int	✓	TSSOP-20F	Superior Light-Load Efficiency	Production
MPQ2459-AEC1	4.5	55	0.5	1.25	0.73	0.8	480	Int		TSOT23-6	Superior Light-Load Efficiency	Production
MPQ2451-AEC1	3.3	36	0.6	0.85	0.23	0.8	2000	Int		SOT23-6L	Internal Comp & SS, Prog.	Production
MPQ2454-AEC1	3.3	36	0.6	1.80	0.06	0.8	2200 (Adj.)	Ext	✓	QFN10 (3x3)	Superior Light-Load Efficiency	Production
MPQ4558-AEC1	4.5	55	1.0	3.2	0.12	0.8	2002 (Adj.)	Int		QFN10 (3x3)	Superior Light-Load Efficiency	Production
MPQ4559-AEC1	4.5	55	1.5	3.2	0.12	0.8	2002 (Adj.)	Int		QFN10 (3x3)	Superior Light-Load Efficiency	Production
MPQ4561-AEC1	4.5	55	1.5	2.5	0.12	0.8	2002 (Adj.)	Ext		QFN10 (3x3)	Superior Light-Load Efficiency	Production
MPQ4560-AEC1	4.5	55	2.0	3.2	0.12	0.8	2002 (Adj.)	Int		QFN10 (3x3) SOIC8E	Superior Light-Load Efficiency	Production
MPQ4462-AEC1	4.5	36	3.5	4.7	0.10	0.8	4002 (Adj.)	Int		QFN10 (3x3) SOIC8E	Superior Light-Load Efficiency	Production

STEP-UP REGULATORS

Synchronous Step-Up

Part Number	VIN (Min) (V)	VIN (Max) (V)	VOUT (V)	ISW Limit (Typ) (A)	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Sync	Package	Notes	Status
MPQ3410-AEC1	1.8	3.2	6.0	1.3	0.36	1.2	550	✓	TSOT23-5	Output Disconnect	Production

Step-Up Controllers

Part Number	VIN (Min) (V)	VIN (Max) (V)	IQ (Typ) (mA)	ISD (Typ) (μA)	VFB (V)	FSW (kHz)	Soft Start	Package	Notes	Status
MPQ3910-AEC1	5	35	0.3	1.00	1.2	30 to 400	Ext	MSOP10	Peak Current Mode, Light Load Operation, Supports >10A, OVP, SCP, OTP	Sampling

Note: +WF+ Available with Wetttable Flank

STEP-UP REGULATORS | AUTOMOTIVE

Non-Synchronous Step-Up

	Part Number	VIN (Min) (V)	VIN (Max) (V)	VOUT (V)	ISW Limit (Typ) (A)	IQ (Typ) (mA)	VFB (V)	FSW (kHz)	Package	Notes	Status
New	MPQ3425-AEC1	3.1	22	55	5.0	0.65	1.25	2000 (Adj.)	QFN14 (3x4)	Programmable UVLO and EN Hysteresis	Production
New	MPQ3426-AEC1	3.2	22	35	8.5	0.65	1.25	2000 (Adj.)	QFN14 (3x4)	Programmable UVLO and EN Hysteresis	Production

USB CHARGERS

	Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (A)	IQ (Typ) (mA)	FSW (kHz)	Package	Notes	Status
	MPQ4491M-AEC1	7	36	2.5	1.60	Selec.	QFN25 (4x4) QFN26 (4x4)	Integrated Smart USB Charging Port, Auto Detect, Cable Compensation	Sampling
	MPQ4475M-AEC1	7	36	2.5	1.60	Selec.	QFN25 (4x4)	P2P of MPQ4491M, Short Recovery Time <1s	Sampling

LINEAR REGULATORS

	Part Number	VIN (Min) (V)	VIN (Max) (V)	IOUT (mA)	Load Reg (%/mA)	PSRR @ 1kHz (dB)	VFB (V)	Dropout Voltage at Max IOUT (mV)	VOUT (V)	Package	Notes	Status
	MPQ20051-AEC1	2.5	5.5	1000	0.001	63	0.8	140 (IO: 1000mA)	Adj. 0.8V to 5.0V	QFN8 (3x3)	Enable Pin, High Output Current	Production
	MPQ8904-AEC1	2.7	6.5	500	0.001	26	0.496	300 (IO: 150mA)	Adj. 0.5V to 5.0V	QFN8 (2x3)	Enable Pin, Power Good Output	Production
New	MPQ2019-AEC1	3	40	300	0.004	45	1.25	420 (IO: 300mA)	Fixed 3.3V and Adj. 1.2 to 15V	SOIC-8 EP	10µA Low IQ, Enable Pin, Power Good Output Delay	Production
	MPQ20056-AEC1	2.5	5.5	250	0.003	63	0.8	100 (IO: 250mA)	Fixed 1.8V 2.5V 3.3V Adj. 0.8V to 5V	QFN8 (2x2) TSOT23-5		Production
New	MPQ2013A-AEC1	2.5	40	150	0.005	41	1.215	620 (IO: 500mA)	Fixed 2.5V 3.3V 5V and Adj. 1.215V to 15V	QFN6 (2x2) QFN8 (3x3)	Low IQ (3.2µA), Enable Pin (default on)	Production
New	MPQ2013AGJE -C672-AEC1	2.5	40	100	0.005	41	1.215	385 (IO: 100mA)	Adj. 1.215V to 15V	TSOT23-4	Package Spin of MPQ2013A	Production
	MPQ2016-AEC1	4	42	30	0.003	50	1.23	700 (IO: 30mA)	Adj. 1.2V to 20V	QFN8 (2x3)		Production

Note: +WF+ Available with Wettable Flank

LED LIGHTING | AUTOMOTIVE

WLED Backlighting

	Part Number	VIN (Min) (V)	VIN (Max) (V)	Type	# of Channels	IOUT (A)	Current Limit (Typ) (A)	VFB (V)	FSW (kHz)	Open LED Protection	Package	Notes	Status
	MPQ3386-AEC1	4.5	25	Boost	6	0.030 ea.	2.5	0.6	625 or 1250	✓	QFN24 (4x4)	6 String White LED Driver for Backlighting	Production
New	MPQ3387L-AEC1	3	25	Boost	6	0.045 ea.	2.5	0.5	625 or 1250	✓	TQFN24 (4x4)	6 String White LED Driver for Backlighting	Production
New	MPQ3387A-AEC1	3	25	Boost	6	0.060 ea.			500 or 1250	✓	TQFN24 (4x4)	6 String White LED Driver for Backlighting	Sampling

Illumination and Signaling

	Part Number	VIN (Min) (V)	VIN (Max) (V)	Type	# of Channels	IOUT (A)	Current Limit (Typ) (A)	VFB (V)	FSW (kHz)	Open LED Protection	Package	Notes	Status
New	MPQ2489-AEC1	6	55	Low-Side Buck	1	1		0.2	300 to 600	✓	QFN6 (3x3) SOIC8E	Hysteric, Low-Side Buck, Minimal Ext. Comp., Fast Transient Response	Production
New	MPQ4425M-AEC1	4	36	Buck	1	1.5	4	0.2	2200	✓	QFN13 (2.5x3)	1.5A LED Driver	Production
New	MPQ2483A-AEC1	4.5	55	Buck, Buck-Boost	1	2.5	3	0.198	1350 (Adj.)	✓	QFN10 (3x3) SOIC14	2.5A LED Driver	Production

LED Modules

	Part Number	VIN (Min) (V)	VIN (Max) (V)	Type	# of Channels	Output Current (A)	Current Limit (Typ) (A)	VFB (V)	FSW (kHz)	Open LED Protection	Package	Notes	Status
New	MPM6010-AEC1	4	36	Buck	1	1.5	4	0.2	2200	Yes	QFN (3x5) +WF+	1.5A LED Driver, Inductor, VCC & BST Capacitors	Production

SUPERVISORY CIRCUITS

	Part Number	VIN (Min) (V)	VIN (Max) (V)	Reset Thres (V)	Threshold Acc (%)	Reset Delay Time (ms)	IQ (Typ) (μA)	Package	Notes	Status
New	MPQ6400-AEC1	1.8	6	93% V _{SENSE}	±1.0	Adjustable: 2.1 to 10001	1.6	QFN6 (2x2)	Fix 3.3V, Low IQ, Prog. Delay Supervisor	Production
New	MPQ6411-AEC1	4.8	5	4.5			16	SOIC8	Windowed Watchdog, Power-On Reset	Production

MOTOR DRIVERS | AUTOMOTIVE

Part Number	V _{IN} (Min) (V)	V _{IN} (Max) (V)	Boot Strap Supp. (Max) (V)	Peak Pull-Up Current (A)	Peak Pull-Down Current (A)	Rise Time	Fall Time	Turn Off/On Delay	Package	Notes	Status
MPQ8039-AEC1	7.5	24	6	9	9	20ns	20ns	70ns	SOIC8E	Integrated Half-Bridge and Driver	Production
MPQ6523-AEC1	7	28		0.9	0.9	20μs	20μs	60μs	QFN24 (4x4)	Triple Half-Bridge, Serial Interface, Prog. Slew Rate, Open Load Detect, 1A Output, Independent H-Bridge Control	Sampling
MPQ6526-AEC1	7	40		0.9	0.9	20μs	20μs	60μs	QFN24 (4x4) QFN24 (5x5)	Hex Half-Bridge, Serial Interface, Prog. Slew Rate, Open Load Detect, 1A Output, Independent H-Bridge Control	Sampling

ANALOG SWITCH

	Part Number	V _{IN} (Min) (V)	V _{IN} (Max) (V)	T _{on} (ns)	T _{off} (ns)	Power Supply Current (μA)	Bandwidth (MHz)	R _{DS(ON)} (Ω)	Package	Notes	Status
New	MPQ2735-AEC1	1.65	5.5	29.0	23	1	50	0.18	QFN10 (2x2)	Low-Voltage 0.45Ω Dual SPDT Analog Switches, Separate Control Inputs	Production

Note: +WF+ Available with Wettable Flank