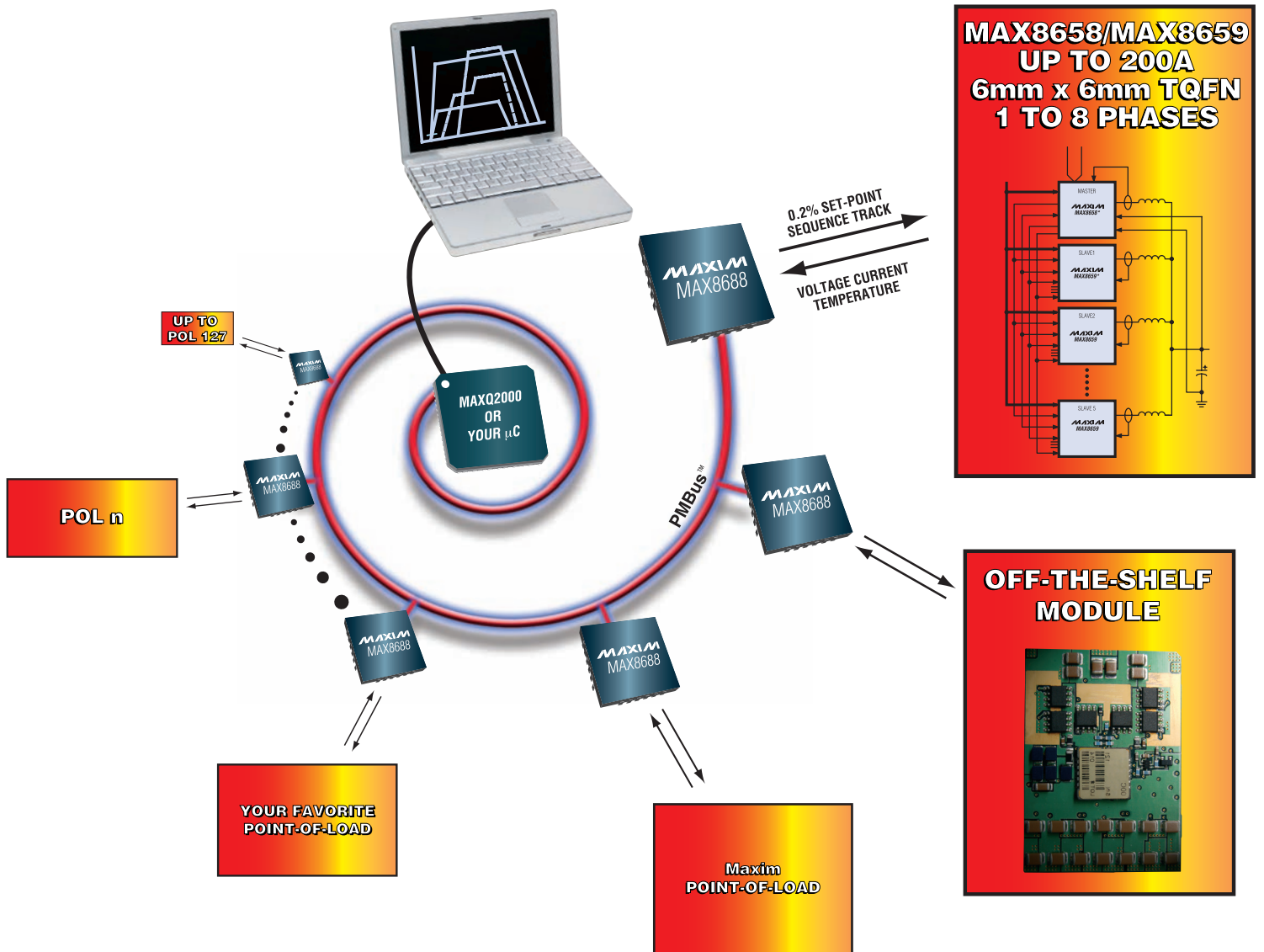


PowerMind™

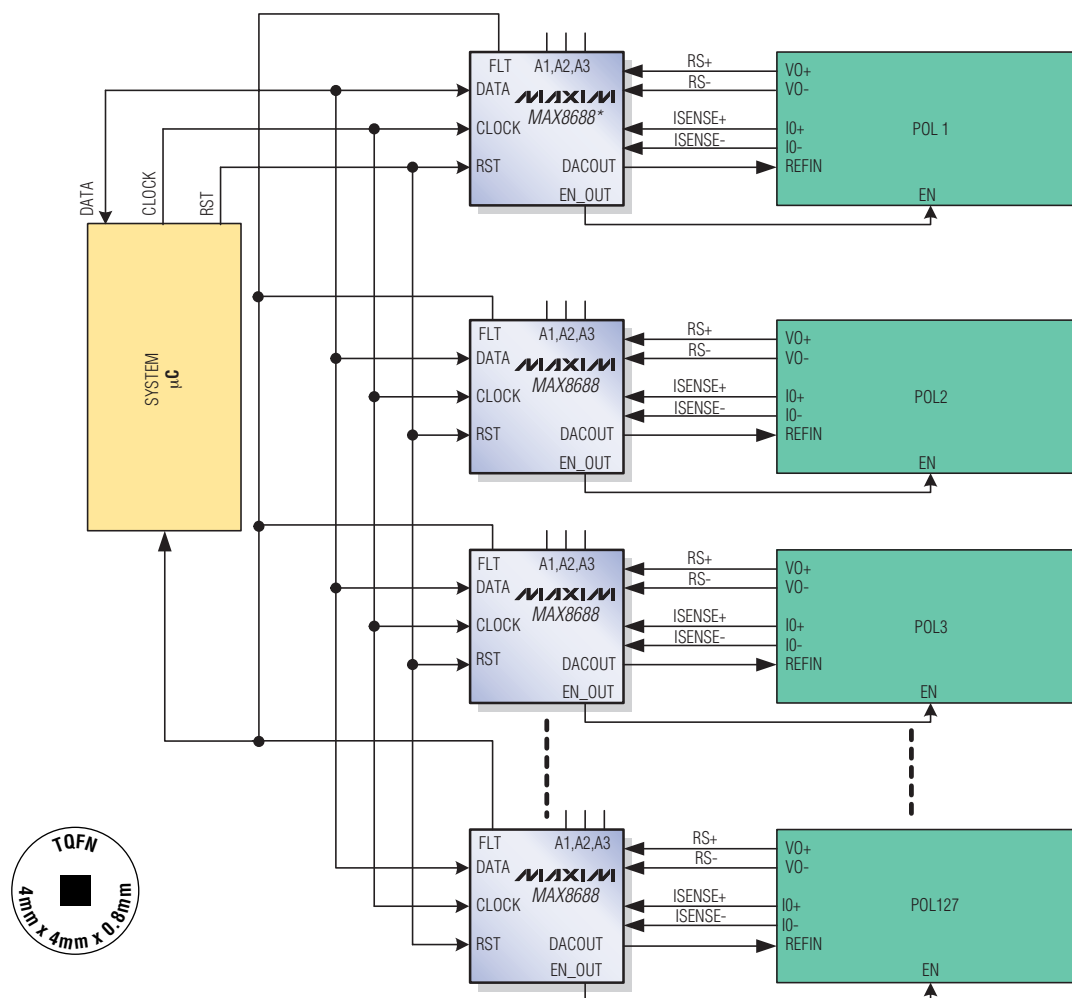
Convert, Control, Monitor



MAXIM

www.maxim-ic.com/PowerMind

MONITOR AND CONTROL USING A PMBus-COMPLIANT POWER SUPPLY



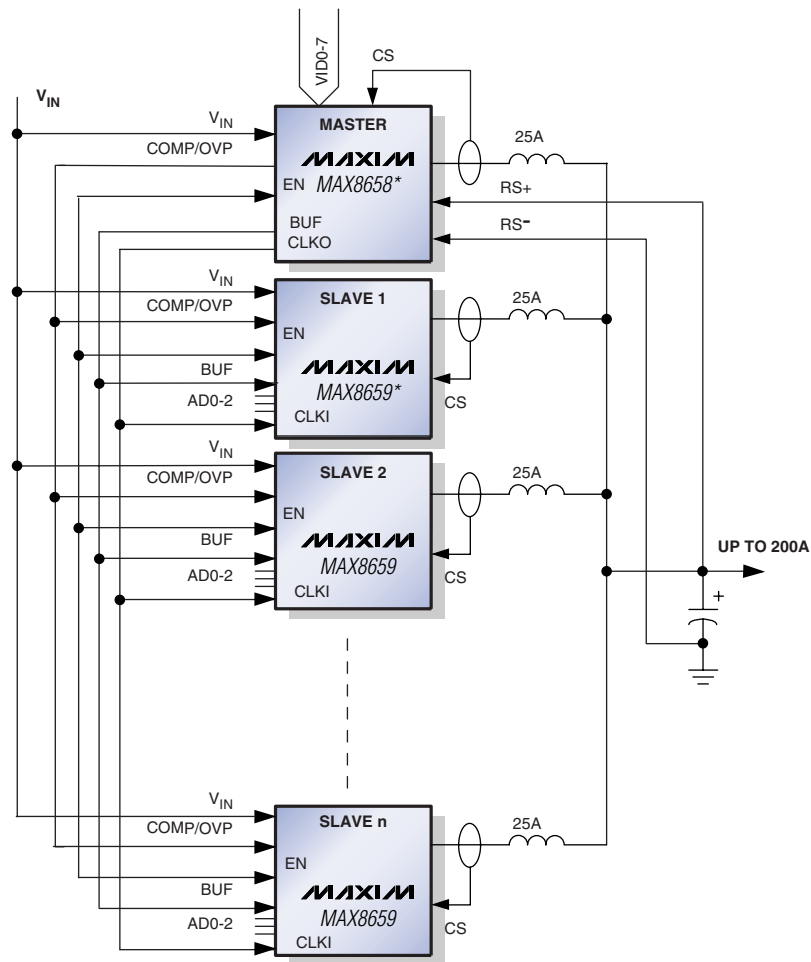
- ◆ PMBus Compliant
 - ◆ Up to 127 Addresses
 - ◆ 0.2% Output Accuracy
 - ◆ Accurate Margining
- ◆ Precision Monitoring
 - ◆ V_{OUT}
 - ◆ I_{OUT}
 - ◆ Temperature
- ◆ Perfect Tracking
 - ◆ Perfect Sequencing
 - ◆ Accurate Fault Reporting
 - ◆ Module Current Sharing
 - ◆ Data Logging

Maxim's New PowerMind Family of Products

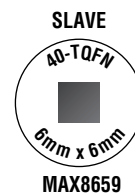
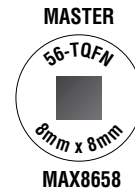
The PowerMind family of products provides a complete power-management solution for high-performance designs that require high density and accurate monitoring/control through digital communication. The integrated MOSFET, step-down regulator family covers a broad range of output currents from 1A to 200A and input voltage range from 2.5V to 28V, making them suitable for a wide variety of system configurations. Digital control and monitoring allow microsecond resolution programmability of all timing events such as sequencing and tracking. Extremely flexible monitoring features provide intelligent setting of warning and fault thresholds. This flexibility also allows independent setting of the fault handling for each POL. Fine control of the output voltage assures meeting the tight tolerances of high-end processors over temperature and the life of the product. System updates can be done remotely due to digital programmability and monitoring, thereby avoiding expensive field services. Events can also be logged so that the root causes of failures can be studied for future prevention.

*Future product—contact factory for availability.

1- TO 8-PHASE VRM 10/11, K8 REGULATOR CHIPSET WITH INTEGRATED MOSFET

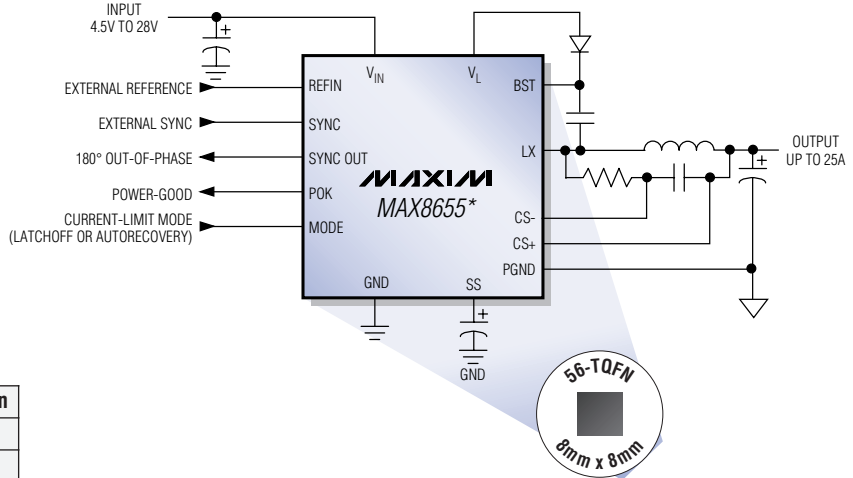
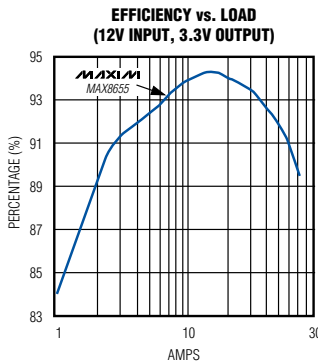


- ◆ Up to 25A per Phase with Integrated MOSFET
- ◆ 4.5V to 28V Input
- ◆ Reference Input
- ◆ VRM 10/11, K8
- ◆ Rapid Active Current Sensing
 - ◆ Accurate Current Sharing
 - ◆ Accurate Droop Setting
- ◆ 0.5% Initial Output Voltage Accuracy
- ◆ 150kHz to 1.2MHz Switching Frequency per Phase
- ◆ VRHOT and OVP Output with Programmable Threshold
- ◆ Differential Remote Voltage Sensing
- ◆ Dynamic VID Change with PGOOD Blanking
- ◆ Adjustable, Foldback Current Limit
- ◆ Soft-Start and Soft-Stop



8MM X 8MM TQFN—INDUSTRY'S SMALLEST 25A, STEP-DOWN DC-DC

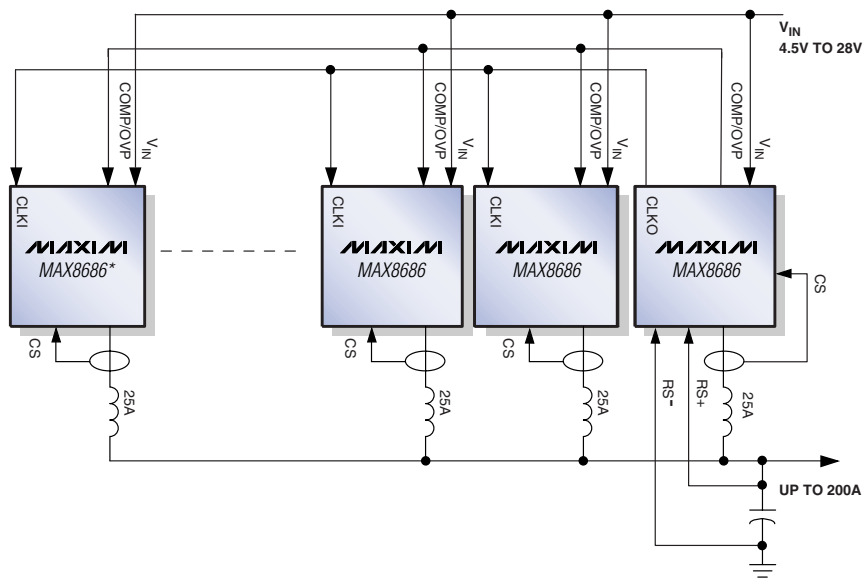
First 4.5V to 28V Input, Up to 1.2MHz DC-DC Converter with Internal MOSFETs



Feature	MAX8655	Competition
Output Current (A)	25	20
Input Voltage Range (V)	4.5 to 28	12
Package (mm x mm)	8 x 8	14 x 14

- ◆ Up to 25A Output Current
- ◆ Adjustable Overcurrent Limit
- ◆ Monotonic Output Voltage Rise at Startup
- ◆ Adjustable Foldback Current
- ◆ 1% Output Voltage Accuracy Over Temp
- ◆ Selectable Current-Limit Modes: Latchoff or Autorecovery
- ◆ Adjustable Overvoltage Protection
- ◆ Output Sources and Sinks Current
- ◆ 180° Phase-Shifted Clock Output

1- TO 8-PHASE, 25A/PHASE BUCK REGULATOR IN 6mm x 6mm TQFN

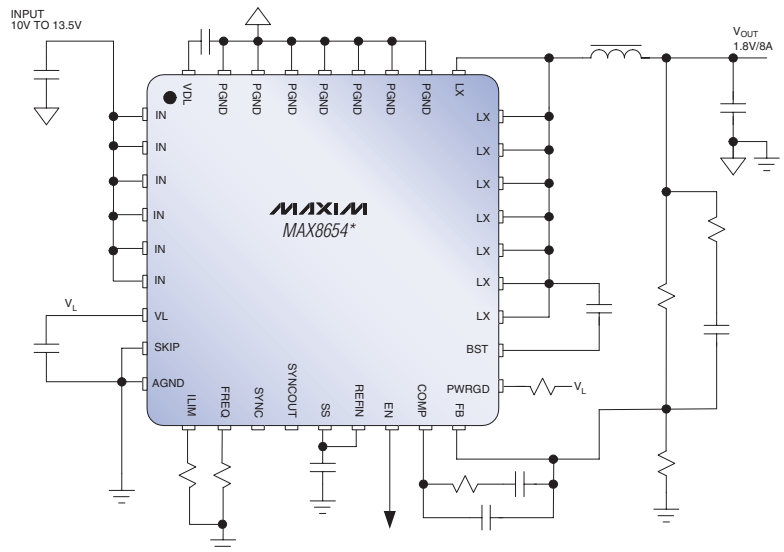


For More Information About the MAX8686, Contact Us at:
powermind@maxim-ic.com

*Future product—contact factory for availability.

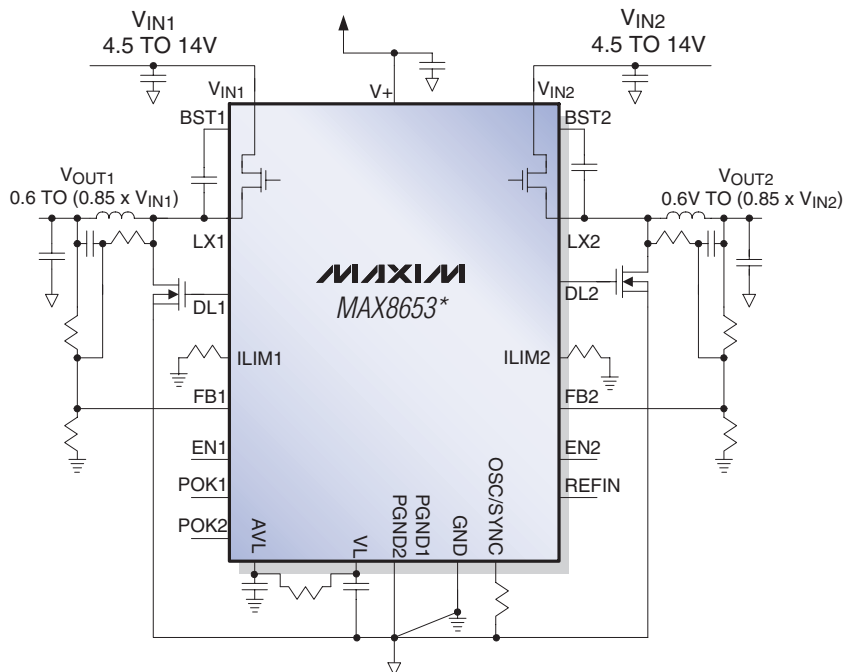
4.5V TO 12V INPUT, 8A INTERNAL SWITCH, STEP-DOWN REGULATOR

- ◆ 25mΩ On-Resistance MOSFETs
- ◆ 8A, PWM Buck Regulator with Source and Sink Option
- ◆ Adjustable 6A to 12A Over Current
- ◆ ±1% Output Accuracy Over Load and Line
- ◆ Operates from 4.5V to 14V Supply
- ◆ Adjustable Output from 0.6V to (0.85 x V_{IN})
- ◆ Soft-Start Reduces In-Rush Supply Current
- ◆ 300kHz to 1MHz Adjustable Switching or SYNC Input
- ◆ Compatible with Ceramic, Polymer, and Electrolytic Output Capacitors
- ◆ SYNCOUT Drives Second Regulator 180° Out-of Phase
- ◆ Available in 36-Pin, 6mm x 6mm TQFN Package
- ◆ Optional Skip Mode Improves Light Load Efficiency



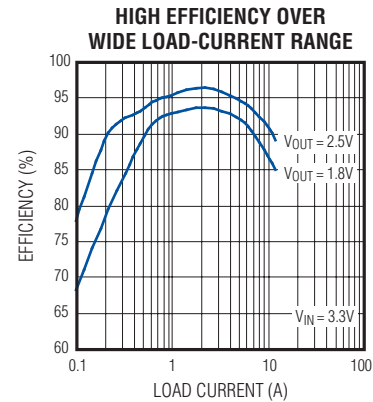
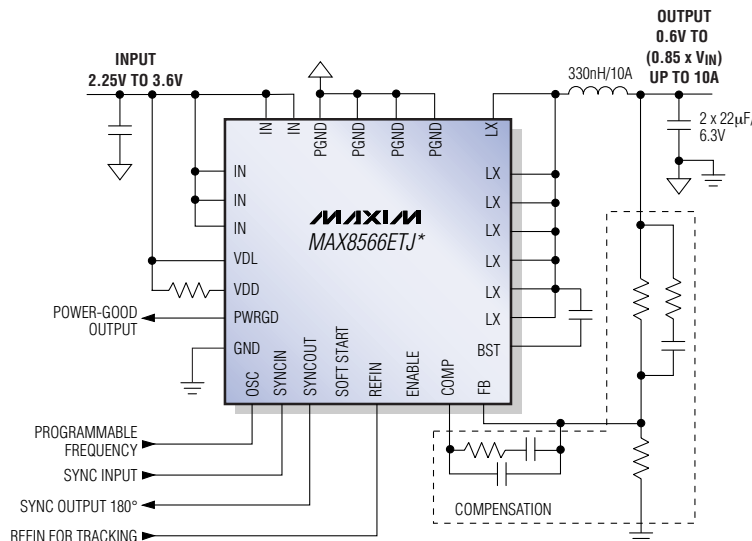
4.5V TO 14V INPUT, DUAL 3A TO 5A, INTERNAL SWITCH STEP-DOWN REGULATOR

- ◆ Operates from 4.5V to 14V Supply
- ◆ 1%, 0.6V Feedback Over Temperature
- ◆ Adjustable Output Voltage Down to 0.6V or REFIN
- ◆ Adjustable Switching Frequency or External Synchronization from 200kHz to 1.5MHz
- ◆ Adjustable Current Limit
- ◆ Monotonic Output Voltage Rise at Startup
- ◆ Source and Sink Current
- ◆ REFIN for Tracking and DDR Termination
- ◆ External Low-Side Schottky or MOSFET
- ◆ Enable and POK for Sequencing
- ◆ Integrated Bootstrap Diode
- ◆ Soft-Start



HIGHEST INTEGRATION, HIGHEST EFFICIENCY, SINGLE-CHIP, 10A STEP-DOWN DC-DC CONVERTER

Up to 96% Efficiency, Up to 2.4MHz Switching, Less than $8m\Omega$ $R_{DS(ON)}$,
Small 5mm x 5mm TQFN



Features

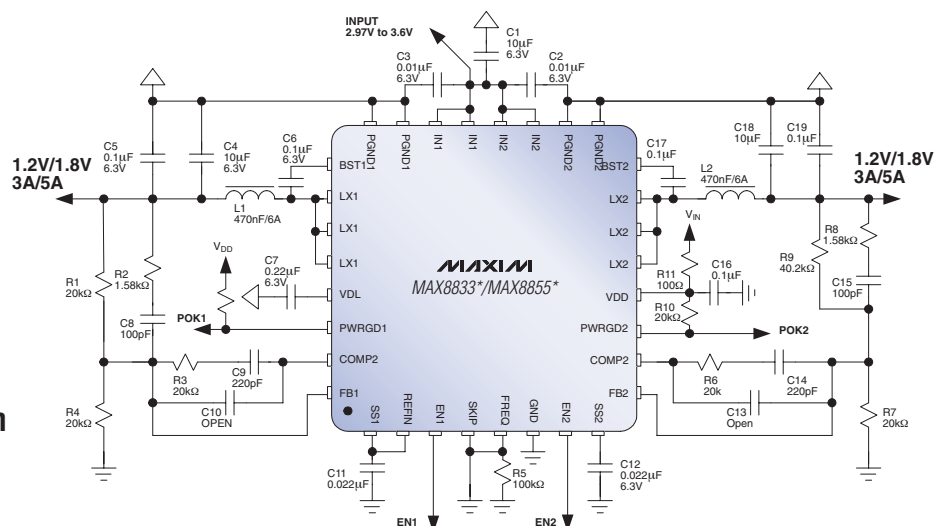
- ◆ $< 8m\Omega$ On-Resistance Switches
- ◆ $\pm 1\%$ Output Voltage Accuracy
- ◆ Soft-Start Reduces In-Rush Supply Current
- ◆ All-Ceramic Capacitor Design
- ◆ 5mm x 5mm, 32-TQFN Package with Exposed Pad

Applications

- ◆ ASIC/DSP/CPU Core Voltages
- ◆ DDR Termination
- ◆ Power Supplies
 - ◆ Memory
 - ◆ Telecom/Datacomm
 - ◆ Industrial
 - ◆ Point-of-Load

DUAL 3A/DUAL 5A, 2MHz STEP-DOWN REGULATORS WITH INTEGRATED MOSFETS

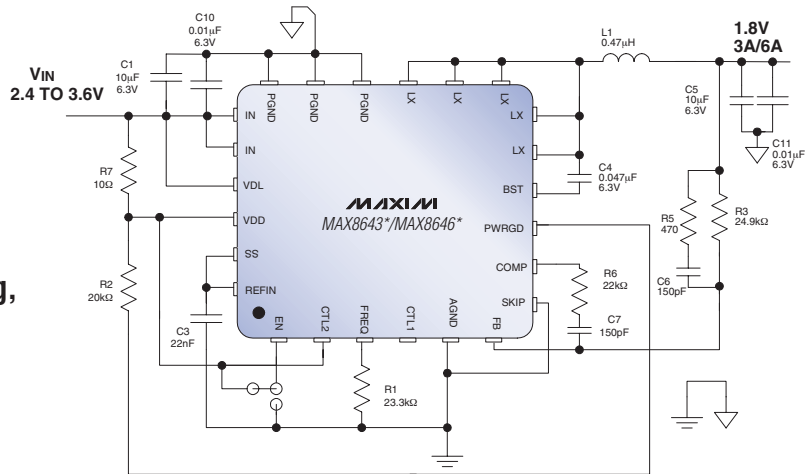
- ◆ Dual 3A (MAX8833*) or Dual 5A (MAX8855*) Outputs
- ◆ 0.5MHz to 2MHz Adjustable Switching, or SYNC Input
- ◆ All-Ceramic Capacitor Design
- ◆ 180° Out-of-Phase Operation Reduces Input Inrush Current
- ◆ Individual Enable Inputs and POK Outputs
- ◆ Available in 32-Pin, 5mm x 5mm TQFN Package



*Future product—contact factory for availability.

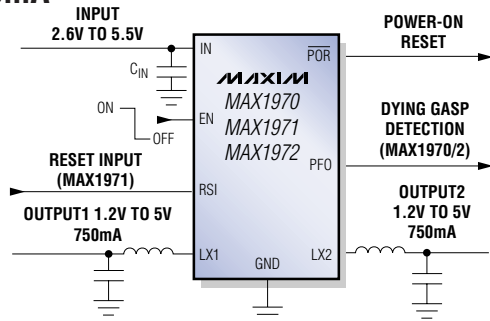
2.3V TO 3.6V INPUT, 3A/6A INTERNAL SWITCH, STEP-DOWN BUCK REGULATORS

- ◆ 38mΩ/27mΩ On-Resistance MOSFETs
- ◆ 3A/6A PWM Buck Regulator
- ◆ ±1% Output Accuracy Over Load and Line
- ◆ Operates from 2.3V to 3.6V Supply
- ◆ Adjustable Output from 0.6V to (0.85 x V_{IN})
- ◆ Soft-Start Reduces In-Rush Supply Current
- ◆ 500kHz to 2MHz Adjustable Switching, or SYNC Input
- ◆ All-Ceramic Capacitor Design
- ◆ VID-Set Output Voltages (0.6V, 0.7V, 0.8V, 1.0V, 1.2V, 1.5V, 1.8V, 2.0V, and 2.5V)
- ◆ Available in 24-Pin, 4mm x 4mm TQFN Package

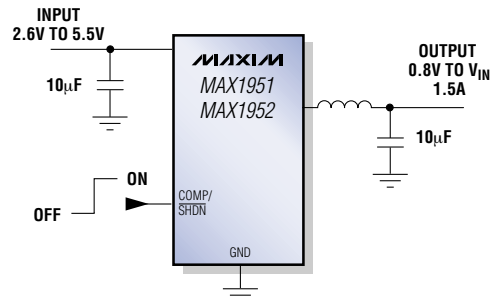


5V, INTERNAL SWITCH, STEP-DOWN REGULATORS

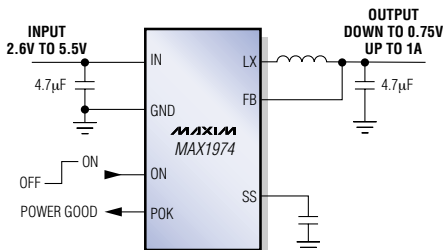
MAX1970/MAX1971/MAX1972
Dual 750mA



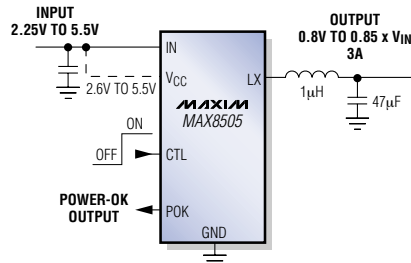
MAX1951
2A



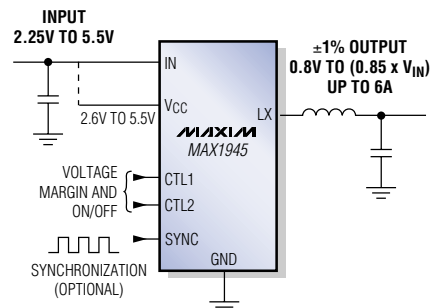
MAX1973/MAX1974
1A



MAX8505
3A

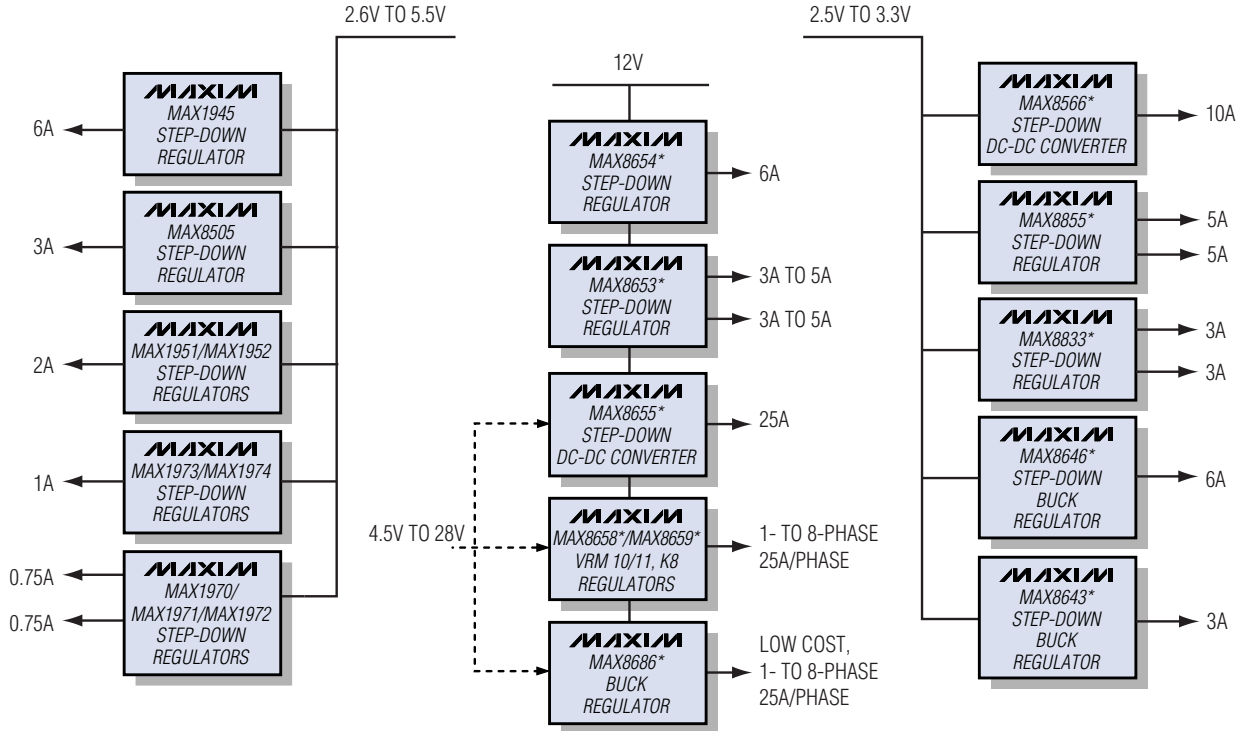


MAX1945
6A



*Future product—contact factory for availability.

Maxim's COMPLETE SELECTION OF PowerMind PRODUCTS FOR YOUR POWER-SUPPLY DESIGNS



*Future product—contact factory for availability.

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Maxim Integrated Products, Inc.

120 San Gabriel Drive

Sunnyvale, CA 94086