



Helix Semiconductors

MxC[®] 200 Family Product Brief

MxC[®] 200 48V 15W Configurable DC-DC Converter Family

The Helix Semiconductor MuxCapacitor[®] (“MxC”) 200 Family consists of five monolithic configurable high voltage switch capacitor integrated circuits targeted for use in both non-isolated and isolated, buck or boost DC-DC converter applications. The MxC 200 family of IC’s supports seamless interface to low voltage PoL regulators to provide highly efficient DC-DC converter solutions with 12V to 57V input voltages and regulated or non-regulated PoL solutions. Consisting of multiple capacitive conversion stages, the MxC 200 IC’s can be easily configured to support systems with multiple voltage requirements. Intelligent MuxCapacitor[®] timing & control optimize power delivery efficiency from no-load to maximum power.

Target Applications

- PoE: Wireless Access Points, Security Cameras, VoIP Phones
- IoT & IIoT Gateways
- Electric & Hybrid Automobiles
- Industrial Controllers, HVAC
- Telecom, Data Center Auxiliary Functions

Features

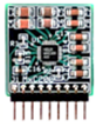
- 6V to 48V Input/Output Voltage
 - 3-stage MuxCap[™], G=1/2 or 2 each
 - Maximum 57V Input/Output Voltage
- Up to 15W Output
 - $P_{out} = P_{out1} + P_{out2} + P_{out3}$
- 48V to 12V peak efficiency of >97%
 - > 90% Efficiency @ 15W
- 12V to 48V peak efficiency of >97%
 - > 90% Efficiency @ 3W
- Transformer-less isolation solutions
- Multiple intermediate outputs
- Idle Operation: Enabled, No-Load
 - 1mW Non-Switching
- Fault Detection
 - Output Over Current
 - Thermal Shutdown
- Package Options
 - 32 Pin QFN, 5mm x 5mm
 - Wire Bond Die
- Evaluation Boards and Reference Designs
 - Voltage Buck and Boost
 - Transformer-less Isolated Buck
 - Sensor and Control

Part Description

Part Number	Description	Package
2D-048-015A-QFN32-C	48V Input to 24V, 12V & 6V Outputs	32 QFN
2D-024-010A-QFN32-C	24V Input to 12V & 6V Outputs	32 QFN
2D-048-015B-QFN32-C	48V Input to 12V Output	32 QFN
2I-048-010A-QFN32-C	48V Input to 24V Capacitive Isolation Driver	32 QFN
2U-012-010A-QFN32-C	12V Input to 48V Output	32 QFN

Available Evaluation Boards and Reference Designs

Non-Isolated Unregulated PoL Evaluation Boards



P/N: MxC 290-EB9-C
15W MuxCapacitor
48V to 24V, 12V & 6V
Uses: 2D-048-015A



P/N: MxC 291-EB3-C
15W MuxCapacitor
48V to 12V
Uses: 2D-048-015B



P/N: MxC 281-EB3-C
10W MuxCapacitor
12V to 48V
Uses: 2U-12-010A



P/N: MxC 292-EB3-C
MuxCapacitor+Vreg
48V to 5Vreg.
Uses: 2D-048-015B



P/N: MxC 284-EB2-C
MuxCapacitor+LED
9V to 32V@20mA
Uses: 2U-012-010A

TL Isolation Unregulated Evaluation Boards



P/N: MxC 270-EB-C
10W MuxCapacitor
48V to 12V
Uses: 2I-048-010A
and 2D-024-010A



P/N: MxC 271-EB-C
3W MuxCapacitor
6V to 12V
Uses: 2U-12-010A
2I-048-010A
and 2D-024-010A

TL Isolation Regulated Reference Design



P/N: MxC 273-EB-C
MuxCapacitor+Vreg
48V to 5Vreg.
Uses: 2I-048-010A
and 2D-024-010A



P/N: MxC 274-EB-C
MuxCapacitor+Vreg
PoE Level 1 to USB-A 5Vreg.
Uses: 2I-048-010A
and 2D-024-010A