



Features

- Industry standard SMT package
- Output voltage programmable from 0.75 V_{dc} to 5.5 V_{dc} via external resistor
- 3 A output current
- Up to 95 % efficiency
- Small size, low profile
- Cost-efficient
- Low output ripple and noise
- High reliability
- Remote on/off
- Output overcurrent protection (non-latching)

MX3A-12SA(-P) SMT Non-Isolated Power Module

Description

Bourns® MX3A-12SA(-P) is a non-isolated DC-DC converter offering designers a cost and space-efficient solution with standard features such as remote on/off, precisely regulated programmable output voltage and overcurrent protection.

Specifications

| Parameter | Min. | Nom. | Max. | Units | Notes |
|--|-----------------|------------------|-----------------|----------------------|--|
| INPUT | | | | | |
| Voltage | 8.3 | 12 | 14 | V _{dc} | 18 V max. for -W version |
| Current | | | 2.0 | A _{dc} | |
| Remote ON/OFF: | <u>Standard</u> | <u>-P Option</u> | | | |
| Low or Open = | On | Off | 0.4 | V _{dc} | 10 µA max. |
| High = | Off | On | V _{in} | V _{dc} | 1 mA max. |
| OUTPUT | | | | | |
| Voltage Adjustment Range | 0.75 | | 5.5 | V _{dc} | |
| Current | 0.0 | | 3.0 | A _{dc} | |
| Voltage Setpoint Accuracy | -2.5 | | 2.5 | % V _{o,set} | |
| Line Regulation | | 0.3 | | % V _{o,set} | |
| Load Regulation | | 0.4 | | % V _{o,set} | |
| Temperature Regulation | | 0.4 | | % V _{o,set} | 0 to +85 °C |
| Ripple (pk-pk) (20 MHz Bandwidth) | | 30 | 50 | mVpk-pk | 1 µF ceramic//10 µF tantalum capacitors |
| Ripple (rms) | | 10 | 15 | mVrms | 1 µF ceramic//10 µF tantalum capacitors |
| Dynamic Load Response: | | | | | |
| 50 % to 100 % Load or 100 % to 50 % Load; (Δi/Δt = 2.5 A/µs; 25 °C) | | 200 | | mV | 1 µF ceramic//10 µF tantalum capacitors |
| | | 25 | | µs | |
| 50 % to 100 % Load or 100 % to 50 % Load; (Δi/Δt = 2.5 A/µs; 25 °C) | | 75 | | mV | 2 x 100 µF polymer capacitors |
| | | 100 | | µs | |
| GENERAL | | | | | |
| MTBF | | 13,000 | | kHrs | |
| Operating Temperature | -40 | | +85 | °C | |
| Storage Temperature | -55 | | +125 | °C | |
| Switching Frequency | | 300 | | kHz | |
| Efficiency | | 86.0 | | % | V _{o,set} = 1.2 V _{dc} |
| (V _{in} = 12 V _{dc} , T _A = 25 °C, Full Load) | | 88.0 | | % | V _{o,set} = 1.5 V _{dc} |
| | | 90.0 | | % | V _{o,set} = 1.8 V _{dc} |
| | | 91.0 | | % | V _{o,set} = 2.5 V _{dc} |
| | | 93.0 | | % | V _{o,set} = 3.3 V _{dc} |
| | | 95.0 | | % | V _{o,set} = 5.0 V _{dc} |

Applications

- Intermediate Bus architecture
- Distributed power applications
- Workstations and servers
- Telecom equipment
- Enterprise networks including LANs/WANs
- Latest generation ICs (DSP, FPGA, ASIC) and microprocessor powered applications

