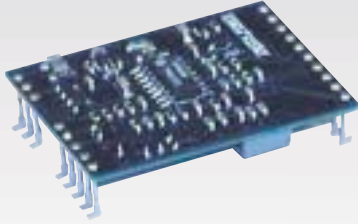


MD5A SERIES

12/ 24/ 48V

Input



Description

The MD5A is a full-featured, dual output, non-isolated DC-DC converter providing over 35 watts of power in a small SMT package. These high efficiency converters have two 5 Amp outputs to power today's microprocessors, ASICs, and DSPs.

Each output uses an external trim resistor to set the output voltage, allowing variable control. The outputs come up simultaneously and each output has a separate on/off control, allowing them to be sequenced. Both outputs include short circuit protection and have remote sense. A phase-shifted synchronization approach significantly reduces ripple and noise on the input line. The MD5A uses Bourns Switch Power's patented V²™ technology to ensure extremely fast transient response.

Features

- Dual 5 Amp Outputs
- 90 % Efficiency
- Independently Programmable Outputs
- Low 0.4 " Profile
- Phase Shifted Synchronization
- Improved Input Filtering
- Short Circuit Protection with auto-restart
- Independent Enable for Sequencing
- Simultaneous Startup tracking
- Remote Sense
- Fast Transient Response
- High-temperature Operation
- Accepts Output Pre-charge
- EN55022 Class A

Common Specifications

| | Min | Nom | Max | Units | Notes |
|------------------------------|------|------|-------|-------|--------------------------------------|
| Input | | | | | |
| Voltage | 10.8 | 12 | 13.2 | Vdc | |
| Current | | | 4 | A | |
| Remote Enable | | | | | each output |
| High = Enable | | 2.3 | | Vdc | Open = Disable |
| Low = Disable | | 0.2 | | Vdc | |
| Outputs (each output) | | | | | |
| Current | 0 | | 5 | A | |
| Current Limit | 6 | 8 | | A | |
| Line Regulation | | ±5 | | mV | over full line range |
| Load Regulation | | ±7 | | mV | over full load range |
| Ripple | | | 20 | mV pp | 1.25 V _{out} (see App Diag) |
| | | | 50 | mV pp | 3.3 V _{out} |
| Dynamic Response | | | | | |
| 50 to 100 % load | | 50 | | mV | Δi/Δt = 0.2A/μs |
| | | 50 | | μs | |
| 100 to 50 % load | | 50 | | mV | Δi/Δt = 0.2A/μs |
| | | 50 | | μs | |
| Temperature Regulation | | | ±0.01 | %/°C | |
| General | | | | | |
| MTBF | | 1000 | | KHrs | 25 °C, 60 % load |
| Operating Temperature | 0 | | 70 | °C | See Derating Curve |
| Full Power | 0 | | 55 | °C | 100 LFM |
| Storage Temperature | -55 | | 125 | °C | |
| Switching Frequency | | 500 | | KHz | |



Reliable Electronic Solutions

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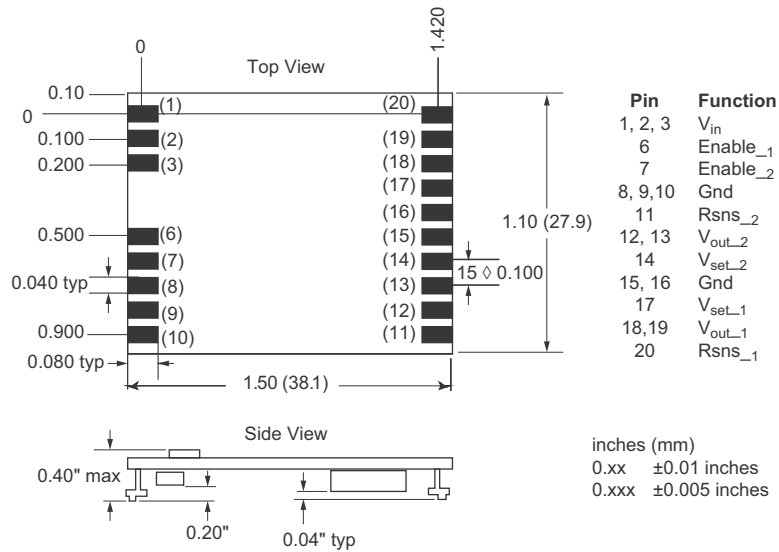
www.bourns.com

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Electrical Specifications

| | Input (V) | V _{out1} (V) | I _{out1} (A) | V _{out2} (V) | I _{out2} (A) | Noise (mV pp) max | Efficiency (%) |
|-----------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------|-------------------|
| MD5A-12DA | 12 | 1 - 3.5 | 5 | 1 - 3.5 | 5 | 50 | 89 |

Each output separately adjustable using an external trim resistor from TRIM to GND. See application circuit below.



$$RV_{set} = 22.9 / (V_{out} - 1) - 5.76 \text{ (k}\Omega\text{)}$$

