

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	



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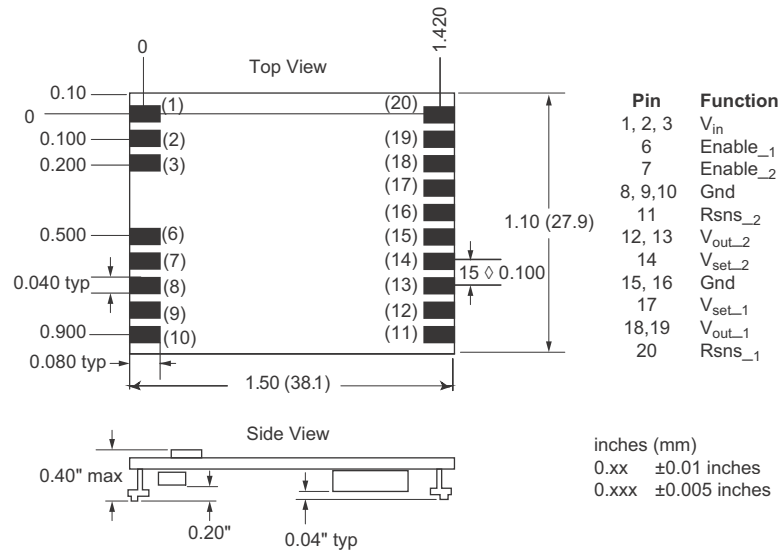
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Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

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.



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

