

PR BX

POWERBOX Industrial Line
MAH42 Series
20-30W 4:1 Single Output
DC/DC Converter

Features

High efficiency up to 91%
Fixed 300KHz switching frequency
4:1 input range
Regulated outputs
Continuous short circuit protection
Six-sided metal case
2" x 1.6" size
Industry standard pin-out
RoHS compliant

Input

Voltage range	24V	9-36VDC
	48V	18-75VDC
Under voltage lockout	24Vin power up	8.8V
	24Vin power down	8.0V
	48Vin power up	17V
	48Vin power down	16V
Positive logic remote ON/OFF (se note 3 & 4).		
Input filter	Pi type.	

Output

Voltage accuracy	±1.5% max.	
Transient response	75-100% step load change.	
	Error band: ±5% Vout nominal.	
	Recovery time: <300us.	
External adj. range, %Vo	±10.	
Ripple and noise	3.3V & 5V: 20mV rms max, 75mV pk-pk max.	
20MHz BW	12 & 15V: 20mV rms max, 100mV pk-pk max (measured with 0.1µF MLCC).	
Temperature coefficient	±0.02%/°C max.	
Line regulation ¹	±0.5% max.	
Load regulation ²	±0.5% max.	
Over voltage protection	3.3V	3.9VDC typ
	5V	6.2VDC typ
	12V	15VDC typ
	15V	18VDC typ
	(Zener or TVS clamp).	
Output current limit	110-150%, % nominal output.	
Short circuit protection	Continuous (hiccup mode).	

Environmental

Operating temperature	-40°C to +85°C.
Derating above 60°C	Linearly to zero power at 100°C.
Case temperature	+100°C max.
Cooling	Natural convection.
Storage temperature	-55°C to +125°C.
Thermal shutdown	Case temperature 110°C typ.

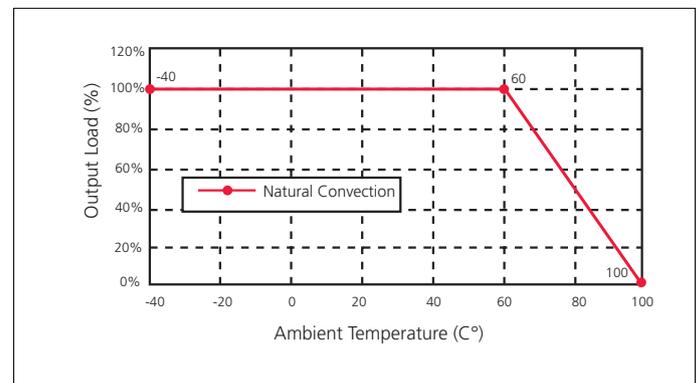
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General

Efficiency	See table.
Isolation voltage	1500VDC min input/output.
Isolation resistance	10 ⁸ ohms, min.
Switching frequency	24Vin 300KHz typ.
	48Vin 250KHz typ.
Metal case material	Black coated copper with non-conductive base.
Dimensions	50.8 x 40.6 x 10.2 mm.

Derating Curve



Note:

1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Logic compatibility CMOS Open Collector TTL, ref to -Vin. Module ON >+3.5VDC to 75VDC or Open Circuit. Module OFF <1.2VDC.
4. Suffix "N" to the model number with negative logic remote ON/OFF. Module ON <1.2VDC. Module OFF >3.5VDC to 75VDC or Open Circuit.
5. Maximum case temperature under any operating condition should not be exceeded 100°C.

