

# P R B X

## POWERBOX Industrial Line MAB03 Series 3W 2:1 Single and Dual Output DC/DC Converter

### Features

24-pin DIP package
Efficiency to 80%
2:1 input range
Regulated outputs
Pi input filter
Continuous short circuit protection
Meets EN55022 Class B, conducted
Remote ON/OFF option
RoHS compliant

### Input

Input voltage range	See table
Positive logic	
remote ON/OFF	See note 7
Input filter	Pi type

### Output

Voltage accuracy	±2.0% max.	
Voltage balance (dual)	±1.0% max.	
Temperature coefficient	±0.05%/°C.	
Ripple and noise <sub>20MHz BW</sub>	3.3V/5V	100mV p-p max.
	12V/15V	1% p-p max.
Short circuit protection	Continuous	
Line regulation <sup>1</sup>	Single/Dual	±0.5% max.
Load regulation	Single <sup>2</sup>	±0.5% max.
	Dual <sup>3</sup>	±1.0% max.

### Environmental

Operating ambient temp.	-25 to +71°C.	
Derating above 71°C	Linearly to zero power at 95°C (plastic case) Linearly to zero power at 100°C (copper case)	
Case temperature <sup>9</sup>	95°C max. with plastic case 100°C max. with(copper case)	
Cooling	Natural convection	
Storage temperature	-40 to +100°C	

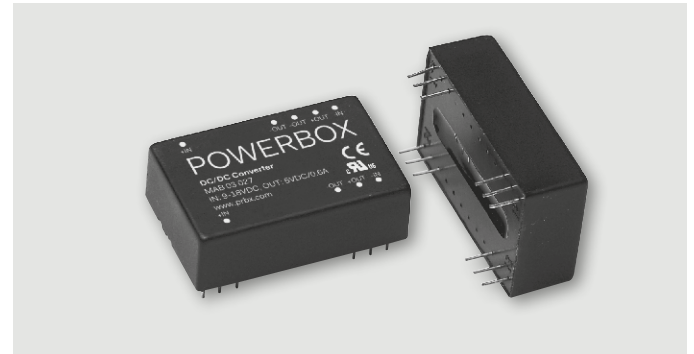
### General

Efficiency	See table.
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#### Note:

1. Measured from high line to low line.
  2. Measured from full load to 10% load.
  3. Measured from full load to 1/4 load.
  4. Non-conductive black plastic only.
  5. Suffix "HM" 1.5kVDC instead of 3kVDC isolation.
  6. Suffix "T" to the model number with remote On/Off for "H"/"HM" versions only.
  7. Logic compatibility CMOS or open collector TTL ref to -Vin.
- Module ON >5.5VDC or open circuit  
Module OFF <1.8VDC  
Shutdown idle 10mA  
Control common Referenced to input minus
8. Suffix "S" to the model number with SMD packages.
  9. Max case temperature under any operating conditions should not be exceeded 95°C (plastic case), 100°C (copper case).

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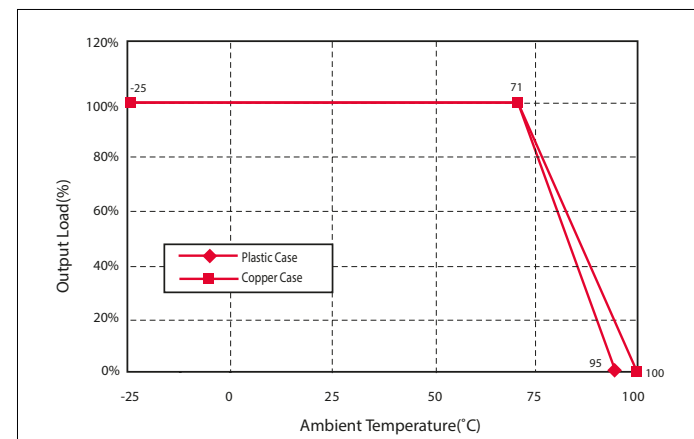


Isolation voltage <sup>4</sup>	Standard models: 500 VDC min. Suffix "H" models: 3 kVDC min. Suffix "HM" models: 1.5 kVDC min.
Isolation resistance	10 <sup>9</sup> ohms
Switching frequency	100KHz, min.
Dimensions	DIP: 31.8 x 20.3 x 12.7 mm SMD: 31.8 x 20.3 x 14.0 mm
Weight	15 g
Case material	Standard models: Non-conductive black plastic. Suffix "M" models: Black coated copper with non-conductive base.

### Standards

Safety standards	UL60950-1 approval for H/HM versions only
EMI/RFI	Conducted EMI meet EN55022 Class B

### Derating Curve



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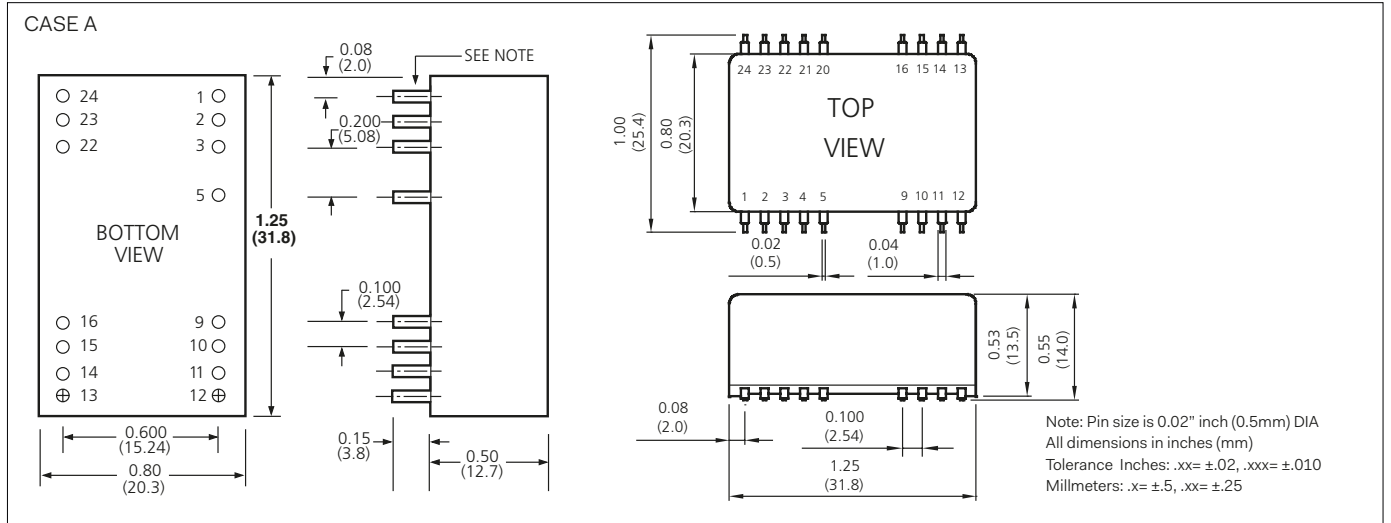
Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Efficiency	Case
				No Load	Full Load		
MAB 03 024	9-18 VDC	3.3 VDC	600 mA	7.5 mA	229 mA	72%	A
MAB 03 027	9-18 VDC	5 VDC	600 mA	7.5 mA	329 mA	76%	A
MAB 03 030	9-18 VDC	12 VDC	250 mA	7.5 mA	316 mA	79%	A
MAB 03 033	9-18 VDC	15 VDC	200 mA	7.5 mA	321 mA	78%	A
MAB 03 036	9-18 VDC	±5 VDC	±300 mA	12 mA	329 mA	76%	A
MAB 03 039	9-18 VDC	±12 VDC	±125 mA	12 mA	325 mA	77%	A
MAB 03 042	9-18 VDC	±15 VDC	±100 mA	12 mA	329 mA	76%	A
MAB 03 045	18-36 VDC	3.3 VDC	600 mA	5 mA	111 mA	74%	A
MAB 03 048	18-36 VDC	5 VDC	600 mA	5 mA	162 mA	77%	A
MAB 03 051	18-36 VDC	12 VDC	250 mA	5 mA	156 mA	80%	A
MAB 03 054	18-36 VDC	15 VDC	200 mA	5 mA	156 mA	80%	A
MAB 03 057	18-36 VDC	±5 VDC	±300 mA	7.5 mA	164 mA	76%	A
MAB 03 060	18-36 VDC	±12 VDC	±125 mA	7.5 mA	156 mA	80%	A
MAB 03 063	18-36 VDC	±15 VDC	±100 mA	7.5 mA	162 mA	77%	A
MAB 03 066	36-72 VDC	3.3 VDC	600 mA	3 mA	58 mA	71%	A
MAB 03 069	36-72 VDC	5 VDC	600 mA	2 mA	81 mA	77%	A
MAB 03 072	36-72 VDC	12 VDC	250 mA	2 mA	81 mA	77%	A
MAB 03 075	36-72 VDC	15 VDC	200 mA	2 mA	81 mA	77%	A
MAB 03 078	36-72 VDC	±5 VDC	±300 mA	3 mA	80 mA	78%	A
MAB 03 081	36-72 VDC	±12 VDC	±125 mA	3 mA	82 mA	76%	A
MAB 03 084	36-72 VDC	±15 VDC	±100 mA	3 mA	82 mA	76%	A

**Note:**

1. Nominal input voltages 5, 12, 24 or 48 VDC.

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Mechanical



Pin Connection	Standard (500VDC)				"HM" (1.5kVDC) and "H" (3kVDC) models				
	Single Output		Dual Output		Pin	Single Output		Dual Output	
Pin	DIP	SDM	DIP	SMD		DIP	SDM	DIP	SMD
1,24	+V Input		+V Input		1,24	NP	NC	NP	NC
2,23	NC		-V Input		2,3	-V Input		-V Input	
3,22	NC		Common		4	NP	NC	NP	NC
4	NP	NC	NP	NC	5	NP/ Remote On/OFF	NC/ Remote On/OFF	NP/ Remote On/OFF	NC/ Remote On/OFF
5	NP	NC	NP	NC	9	NC	NC	Common	
9	NP	NC	NP	NC	10,15	NC	NC	NC	NC
10,15	-V Output		Common		11	NC	NC	-V Output	
11,14	+V Output		+V Output		12,13	NP	NC	NP	NC
12,13	-V Input		-V Input		14	+V Output		+V Output	
16	NP	NC	NP	NC	16	-V Output		Common	
20	NP	NC	NP	NC	20,21	NP	NC	NP	NC
21	NP	NP	NP	NP	22,23	+V Input		+V Input	

\*NP-No  
\*NC-No Connection with pin  
\*Remote On/Off (Option)