

PM600 SERIES

Single and dual output



[2 YEAR WARRANTY]

- 24 pin DIP package
- 1.25 x 0.8 x 0.4 inch package
- Tight regulation
- Pi input filter
- 20mV pk-pk ripple and noise
- Short circuit protection

The PM600 Series are a broad line of low cost, high performance single and dual output DC/DC converters packaged in an IC compatible 24 pin DIP configuration. These miniature converters are ideal for use on high density PC boards, or wherever low power, isolated and regulated outputs are required. A self contained input Pi network filter, available on all models, minimizes reflected ripple current for critical applications. This feature eliminates the need for external filters thus reducing overall system cost. The PM600 series maintain $\pm 0.3\%$ line and $\pm 0.4\%$ load regulation, and require no derating over the specified operating temperature range. Other specifications include: output voltage accuracy, $\pm 5.0\%$; ripple and noise, 20mV pk-pk; isolation, 300VDC. PM600 series DC/DC converters are intended for a wide variety of industrial applications, especially where tight regulation is required.

SPECIFICATION

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS		
Voltage accuracy		$\pm 5.0\%$, max.
Line regulation	LL to HL	$\pm 0.3\%$
Load regulation	NL to FL	$\pm 0.4\%$
Ripple and noise	20MHz BW See Note 5	20mV pk-pk, max.
Transient response	Overshoot for 10% to 90% FL	$\pm 0.1\%$, typical
Temperature coefficient		$\pm 0.01\%^\circ\text{C}$, typical
Short circuit protection	Output thermal limited	Continuous automatic recovery
INPUT SPECIFICATIONS		
Input voltage range	5VDC, See Note 10 12VDC, See Note 10	4.5 to 5.5VDC 10.8 to 13.2VDC
Input filter	See Note 8	Pi network
Fault current mode		150% of FL input current

GENERAL SPECIFICATIONS		
Efficiency		50% typical
Isolation voltage		300VDC
Switching frequency	Variable	40kHz to 70kHz
Case material	UL94V-0	Non-conductive black plastic
Weight		14g (0.5oz)
MTBF (75% FL)	Single Outputs Dual Outputs	434,000 hours 268,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient Non-operating amb., Case Derating Cooling	-25°C to $+71^\circ\text{C}$ -40°C to $+125^\circ\text{C}$ $+95^\circ\text{C}$, max. None required Free air convection cooled
Relative humidity	Non-condensing	20% to 95% RH
Altitude	Operating Non operating	10,000 feet max. 40,000 feet max.
Vibration	5Hz to 500Hz	2.5G rms (approx.)

0.5 to 1 Watt Nominal input DC/DC converters

INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT (1)	TYPICAL EFFICIENCY	REGULATION		MODEL NUMBER
					LINE (2)	LOAD (3)	
5VDC	5VDC	100mA	260mA	50%	±0.3%	±0.4%	PM621
5VDC	12VDC	80mA	380mA	50%	±0.3%	±0.4%	PM623
5VDC	15VDC	65mA	380mA	50%	±0.3%	±0.4%	PM624
5VDC	±12VDC	±40mA	380mA	50%	±0.3%	±0.4%	PM671 (4,6)
5VDC	±15VDC	±33mA	380mA	50%	±0.3%	±0.4%	PM672 (4,6)
12VDC	5VDC	100mA	100mA	50%	±0.3%	±0.4%	PM631
12VDC	±12VDC	±40mA	145mA	50%	±0.3%	±0.4%	PM681 (6)
12VDC	±15VDC	±33mA	145mA	50%	±0.3%	±0.4%	PM682 (6)

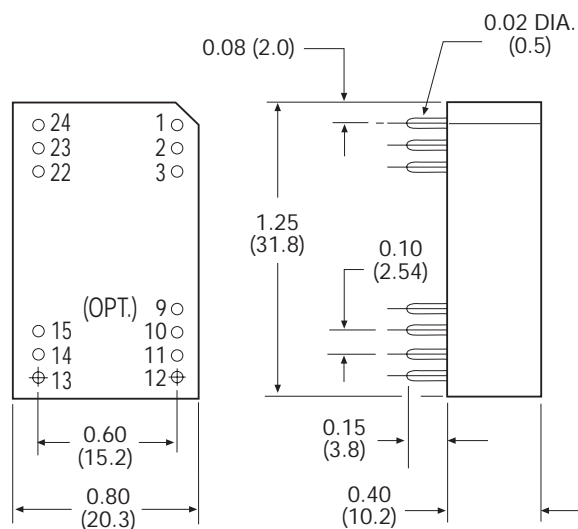
Notes

- 1 Maximum figure, at full load.
- 2 Measured from high line to low line.
- 3 Measured as load changes from no load to 100% full load.
- 4 The PM671 is available with optional voltage balance pin, and is designated by suffix letter 'P'. For connection information, see case drawing. In addition, both the PM671 and PM672 are available with alternate pin-out (including balance pin) designated by suffix letter 'R'. See case drawing. If not required, the balance pin can be left floating.
- 5 Measured with a 15µF tantalum capacitor across each output.
- 6 On dual output models the four common pins are internally connected. The outputs can be returned through one pin while the others remain floating.
- 7 Standard specifications are conservative and can be optimized for specific applications. In particular, converter start-up at lower than specified temperature, wider input voltage range and output voltage adjustment are all relatively simple modifications to the standard product. Consult factory for details.
- 8 Fixed frequency design provides for easier input filtering and better noise performance.
- 9 Units are tested with resistive load only.
- 10 Output current derates to 0 at 110% nominal Vin.

PIN CONNECTIONS			
PIN NUMBER	SINGLE OUTPUT MODELS	DUAL OUTPUT MODELS (6)	ALTERNATE PIN-OUT SUFFIX R (4)
1	+V Input	+V Input	+V Input
2	Do not connect	-V Output	+V Input
3	Do not connect	Common	+V Input
9	No Pin	Balance (opt)*	No Pin
10	-V Output	Common	Common
11	+V Output	+V Output	Common
12	-V Input	-V Input	Do not connect
13	-V Input	-V Input	-V Output
14	+V Output	+V Output	Balance
15	-V Output	Common	+V Output
22	Do not connect	Common	-V Input
23	Do not connect	-V Output	-V Input
24	+V Input	+V Input	-V Input

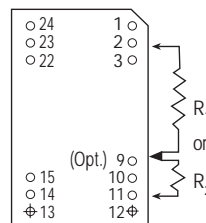
* PM671P.

CASE F



ALL DIMENSIONS IN INCHES (mm)

Balance Pin Connection:



Connect R_1 as required to balance outputs when $I + V_{out1} > I - V_{out1}$

Connect R_2 as required to balance outputs when $I - V_{out1} > I + V_{out1}$

Input to balance pin: ±5mA, max. R_1 or R_2 : 3K Ohm, min.