

P6UG-xxxxE/Z2:1LF



PMMB-SERIES

Rev.10-2013

- ✓ 1 Watt
- ✓ 2:1 Wide Input
- ✓ Single and Dual Reg. Output
- ✓ SIP6 Case
- ✓ 1.5 kV DC I/O Isolation
- ✓ Low Ripple and Noise

The PMMB series P6UG-xxxxE/Z2:1LF is a family of cost effective 1 W single and dual output DC/DC converters. These converters are consisted with Non-conductive Black Plastic in a SIP6 package. Devices are encapsulated. High performance features: 1500VDC input/output isolation, high efficiency operation, output voltage accuracy of $\pm 2\%$ and low output ripple and noise.

All specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified

Input Specifications

Voltage Range	2:1 Wide Input (see table)	
Input Filter	Capacitors	
Input Surge Voltage (100mS)	05 Models	15 VDC, max.
	12 Models	25 VDC, max.
	24 Models	50 VDC, max.
	48 Models	100 VDC, max.

Output Specifications

Voltage Accuracy	$\pm 2\%$
Output Current	0 mA, min. (for max see table)
Short Circuit Protection	Continuous (Automatic Recovery)
Line Regulation	$\pm 0.2\%$, max.
Load Regulation (0% - 100%)	$\pm 1.0\%$, max.
Cross Regulation ¹	$\pm 5\%$ (Dual Output)
Ripple and Noise (20Mhz bandwidth) ²	50 mV pk-pk
Temperature Coefficient	$\pm 0.02\%$ / $^\circ\text{C}$
Transient Recovery Time ⁴	1 mS
Transient Response Deviation ⁴	$\pm 3\%$, max.

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1500 VDC
I/O Isolation Capacity	35 pF
I/O Isolation Resistance	1000 MOhm
Switching Frequency	150 - 550 kHz (Variable)
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	follows
Safety Standard	Designed to meet IEC/EN 60950-1

Physical Specifications

Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Weight	~ 3 g, typ.

Environment Specifications

Operating Temperature	-40 to +85 °C (ambient)
Maximum Case Temperature	105 °C
Storage Temperature	-55 to +125 °C
Cooling	Free Air Convection
RoHS Conform	Soldering 260 °C, max. (1.5mm from case 10s.)

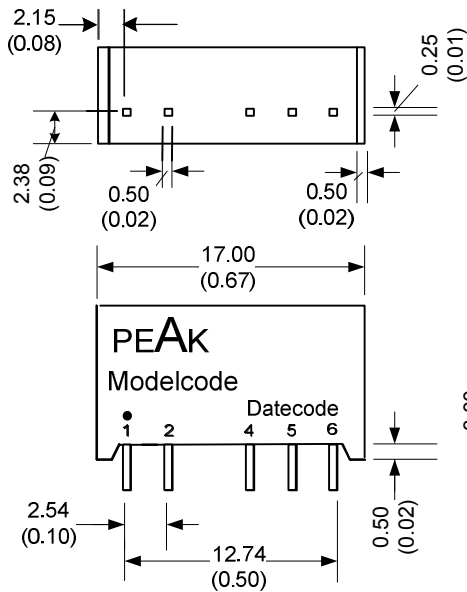
Selection Guide

Single / Dual Output

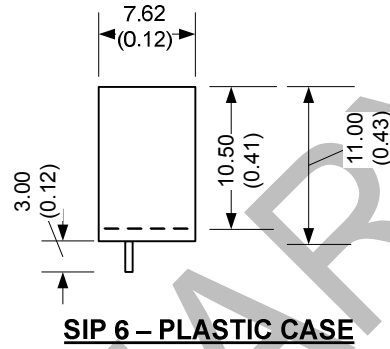
Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (µF) ³
SINGLE OUTPUT							
P6UG-0505E2:1LF	4.5-9	35	263	5	200	76	1680
P6UG-0512E2:1LF	4.5-9	35	259	12	83	77	820
P6UG-0515E2:1LF	4.5-9	35	254	15	67	79	680
P6UG-0524E2:1LF	4.5-9	35	265	24	42	76	470
P6UG-1205E2:1LF	9-18	20	108	5	200	77	1680
P6UG-1212E2:1LF	9-18	20	108	12	83	77	820
P6UG-1215E2:1LF	9-18	20	105	15	67	80	680
P6UG-1224E2:1LF	9-18	20	109	24	42	77	470
P6UG-2405E2:1LF	18-36	10	54	5	200	77	1680
P6UG-2412E2:1LF	18-36	10	52	12	83	80	820
P6UG-2415E2:1LF	18-36	10	52	15	67	80	680
P6UG-2424E2:1LF	18-36	10	55	24	42	77	470
P6UG-4805E2:1LF	36-72	7	27	5	200	77	1680
P6UG-4812E2:1LF	36-72	7	27	12	83	78	820
P6UG-4815E2:1LF	36-72	7	27	15	67	78	680
P6UG-4824E2:1LF	36-72	7	28	24	42	76	470
DUAL OUTPUT							
P6UG-0512Z2:1LF	4.5-9	35	259	± 12	± 42	77	±470
P6UG-0515Z2:1LF	4.5-9	35	254	±15	± 33	79	±330
P6UG-1212Z2:1LF	9-18	20	108	± 12	± 42	77	±470
P6UG-1215Z2:1LF	9-18	20	105	±15	± 33	80	±330
P6UG-2412Z2:1LF	18-36	10	52	± 12	± 42	80	±470
P6UG-2415Z2:1LF	18-36	10	52	±15	± 33	80	±330
P6UG-4812Z2:1LF	36-72	7	27	± 12	± 42	78	±470
P6UG-4815Z2:1LF	36-72	7	27	±15	± 33	78	±330

If you need other specifications, please enquire.

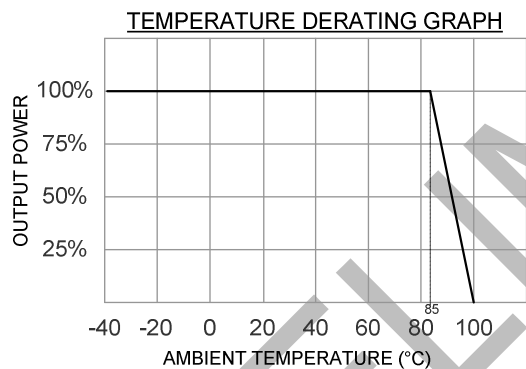
Package / Pinning / Derating



All dimensions are typical in millimeters (inches).
 - Pin diameter: 0.5 +/-0.05 (0.02 +/-0.002)
 - Pin pitch tolerance: +/-0.35 (+/-0.014)
 - Case tolerance +/-0.5 (+/-0.02)
 Specification may change without notice.



SIP 6 – PLASTIC CASE



PIN CONNECTIONS		
#	SINGLE	DUAL
1	- Vin	- Vin
2	+Vin	+Vin
4	+Vout	+Vout
5	Omitted	Common
6	- Vout	- Vout

App Notes:

- 1 = One load is 25% to 100%, the other load is 100%, the output voltage variable rate is within ± 5%.
- 2 = Measured with a 1uF ceramic capacitor.
- 3 = Tested by minimal Vin and constant resistive load.
- 4 = Tested by normal Vin and 25% load step change (75%-50%-25% of Io).

- Absolute Maximum ratings: Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

Output Ripple & Noise Measurement Test

Use a capacitor Cout (1.0 uF) measurement. The scope measurement bandwidth is 0-20 MHz.

