

# P6AU-xxxxELF



## PMA-SERIES

Rev.01-2010

- ✓ 1 Watt
- ✓ Unregulated
- ✓ **Single** Output
- ✓ **SIP4** Case
- ✓ **1 kV** DC I/O Isolation
- ✓ Low Ripple and Noise

The PMA series P6AU-xxxxELF is a family of cost effective 1 W single output DC/DC converters. These converters are in an ultra miniature SIP4 case. Devices are encapsulated. High performance features: 1000VDC input/output isolation, high efficiency operation, output voltage accuracy of  $\pm 3\%$  maximum, input range of  $\pm 10\%$  tolerance 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	$\pm 10\%$
Input Filter	Capacitors
Input Reflected Ripple Current <sup>1</sup>	20 mA pk-pk

### Output Specifications

Voltage Accuracy	$\pm 3\%$
Short Circuit Protection	Short Term
Line Regulation	$\pm 1.2\% / 1\% V_{in}$ Change
Load Regulation (20% - 100%)	$\pm 10\%$ (3.3V <sub>out</sub> Models: $\pm 14$ to 20%)
Ripple and Noise (20Mhz bandwidth)	100 mV pk-pk
Temperature Coefficient	$\pm 0.02\% / ^\circ\text{C}$

### General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1000 VDC
I/O Isolation Capacity	60 pF, typ.
I/O Isolation Resistance	1000 MOhm
Switching Frequency	80 kHz (Variable)
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs

### Physical Specifications

Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 1.5g, typ.

### Environment Specifications

Operating Temperature	-40 to +85 °C (ambient)
Maximum Case Temperature	100 °C
Storage Temperature	-40 to +125 °C
Cooling	Free Air Convection
RoHS Conform	Soldering 260 °C, max. (1.5mm from case 10s.)

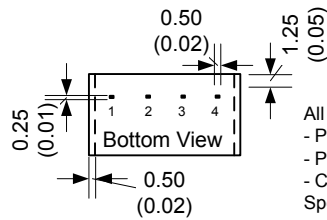
# Selection Guide

## Single Output

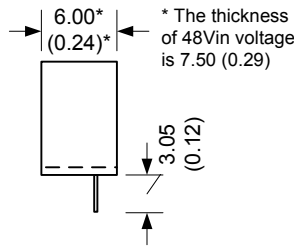
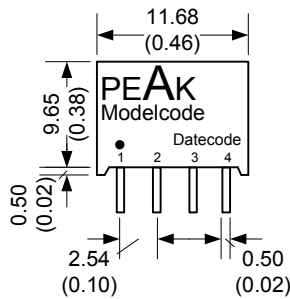
Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) <sup>2</sup>
<b>SINGLE OUTPUT</b>							
P6AU-3R33R3ELF	3.3	25	452	3.3	303	67	220
P6AU-3R305ELF	3.3	30	415	5	200	73	220
P6AU-3R309ELF	3.3	30	420	9	111.1	72	220
P6AU-053R3ELF	5	25	278	3.3	303	72	220
P6AU-0505ELF	5	25	267	5	200	75	220
P6AU-057R2ELF	5	25	264	7.2	138.8	76	220
P6AU-0509ELF	5	25	260	9	111.1	77	220
P6AU-0512ELF	5	25	257	12	83.3	78	220
P6AU-0515ELF	5	25	257	15	66.67	78	220
P6AU-0518ELF	5	25	257	18	55.5	78	220
P6AU-0524ELF	5	25	257	24	41.67	78	220
P6AU-123R3ELF	12	16	116	3.3	303	72	220
P6AU-1205ELF	12	16	112	5	200	75	220
P6AU-127R2ELF	12	16	110	7.2	138.8	76	220
P6AU-1209ELF	12	16	109	9	111.1	77	220
P6AU-1212ELF	12	16	107	12	83.3	78	220
P6AU-1215ELF	12	16	107	15	66.67	78	220
P6AU-1218ELF	12	16	107	18	55.5	78	220
P6AU-1224ELF	12	16	107	24	41.67	78	220
P6AU-243R3ELF	24	10	58	3.3	303	72	220
P6AU-2405ELF	24	10	56	5	200	75	220
P6AU-247R2ELF	24	10	55	7.2	138.8	76	220
P6AU-2409ELF	24	10	55	9	111.1	77	220
P6AU-2412ELF	24	10	54	12	83.3	78	220
P6AU-2415ELF	24	10	54	15	66.67	78	220
P6AU-2418ELF	24	10	54	18	55.5	78	220
P6AU-2424ELF	24	10	54	24	41.67	78	220
P6AU-483R3ELF	48	7	29	3.3	303	72	220
P6AU-4805ELF	48	7	28	5	200	75	220
P6AU-487R2ELF	48	7	27	7.2	138.8	76	220
P6AU-4809ELF	48	7	27	9	111.1	76	220
P6AU-4812ELF	48	7	27	12	83.3	76	220
P6AU-4815ELF	48	7	27	15	66.67	76	220
P6AU-4818ELF	48	7	27	18	55.5	76	220
P6AU-4824ELF	48	7	27	24	41.67	76	220

If you need other specifications, please enquire.

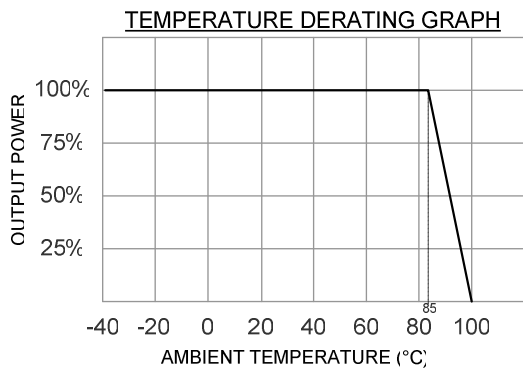
# Package / Pinning / Derating



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.



**SIP4 – PLASTIC CASE**

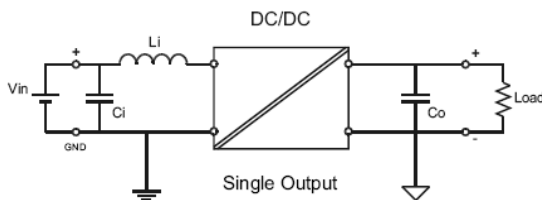


PIN CONNECTIONS	
#	SINGLE
1	- Vin
2	+Vin
3	- Vout
4	+Vout

## App Notes:

- <sup>1</sup> = Measured Input reflected ripple current with a simulated source inductance of 12uH.
- <sup>2</sup> = Tested by minimal Vin and constant resistive load.

- Operation under no-load conditions will not damage these devices, but they will not observe the listed specifications.
- For reduce converter's ripple & noise, it is recommended to add a 4.7μF~100μF capacitor in output end. For EMI performance improvement, it is recommended to add a 12μH inductor and a 10μF~220μF capacitor in input end.



EMC SPECIFICATIONS		
Radiated Emissions	EN 55022 FCC 47CFR Part 15/B	CLASS B CLASS B
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A