P3IU-xxxxELF

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PMA-SERIES Rev.11-2008

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

The PMA series P3IU-xxxxELF is a family of cost effective 0.5 W single output DC/DC converters. These converters are in an ultra miniature SIP4 case. Devices are encapsulated. High performance features: 3000VDC input/output isolation, high efficiency operation, output voltage accuracy of ±3% maximum, input range of ±10% tolerance and low output ripple and noise.

All specifications typical at Ta=25℃, nominal input voltage and full load unless otherwise specified

Input Specifications	
Voltage Range	± 10%
Input Filter	Capacitor
Input Reflected Ripple Current[1]	20 mA pk-pk
Output Specifications	
Voltage Accuracy	± 3%
Short Circuit Protection	Short Term
Line Regulation	± 1.2% / 1% Vin Change
Load Regulation (20% - 100%)	± 10% (3.3Vout Models: ± 20%)
Ripple and Noise (20Mhz bandwidth)	100 mV pk-pk
Temperature Coefficient	± 0.02% / ℃
General Specifications	
Efficiency	See Table
I/O Isolation Voltage (3 sec.)	3000 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℃ (ambient)
Maximum Case Temperature	100℃
Storage Temperature	-40 to +125℃
Cooling	Free Air Convection
RoHS Conform	Soldering 260℃, max. (1.5mm from case 10s.)

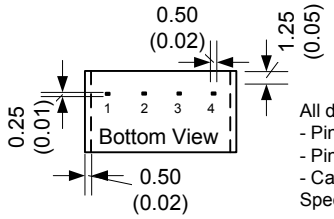
Specification can change without a notice – We accept no liability for any inaccuracy or printing errors.

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)[2]
SINGLE OUTPUT							
P3IU-053R3ELF	5	30	134	3.3	151.5	75	100
P3IU-0505ELF	5	30	129	5	100	78	100
P3IU-057R2ELF	5	30	136	7.2	69.44	74	100
P3IU-0509ELF	5	30	134	9	55.55	75	100
P3IU-0512ELF	5	30	132	12	41.67	76	100
P3IU-0515ELF	5	30	132	15	33.33	76	100
P3IU-0518ELF	5	30	134	18	27.77	75	100
P3IU-0524ELF	5	30	139	24	20.83	72	100
P3IU-123R3ELF	12	20	60	3.3	151.5	70	100
P3IU-1205ELF	12	20	56	5	100	74	100
P3IU-127R2ELF	12	20	56	7.2	69.44	74	100
P3IU-1209ELF	12	20	56	9	55.55	75	100
P3IU-1212ELF	12	20	60	12	41.67	70	100
P3IU-1215ELF	12	20	60	15	33.33	70	100
P3IU-1218ELF	12	20	60	18	27.77	70	100
P3IU-1224ELF	12	20	60	24	20.83	70	100
P3IU-243R3ELF	24	10	31	3.3	151.5	67	100
P3IU-2405ELF	24	10	29	5	100	72	100
P3IU-247R2ELF	24	10	31	7.2	69.44	67	100
P3IU-2409ELF	24	10	31	9	55.55	67	100
P3IU-2412ELF	24	10	31	12	41.67	67	100
P3IU-2415ELF	24	10	29	15	33.33	72	100
P3IU-2418ELF	24	10	30	18	27.77	70	100
P3IU-2424ELF	24	10	30	24	20.83	70	100
P3IU-483R3ELF	48	6	17	3.3	151.5	62	100
P3IU-4805ELF	48	6	16	5	100	65	100
P3IU-487R2ELF	48	6	17	7.2	69.44	62	100
P3IU-4809ELF	48	6	17	9	55.55	62	100
P3IU-4812ELF	48	6	17	12	41.67	62	100
P3IU-4815ELF	48	6	17	15	33.33	62	100
P3IU-4818ELF	48	6	17	18	27.77	62	100
P3IU-4824ELF	48	6	17	24	20.83	62	100

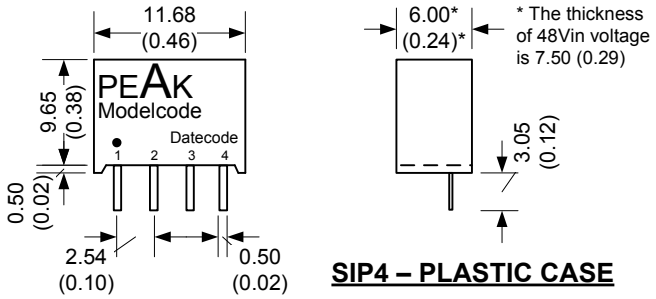
If you need other specifications, please enquire.

Package / Pinning / Derating



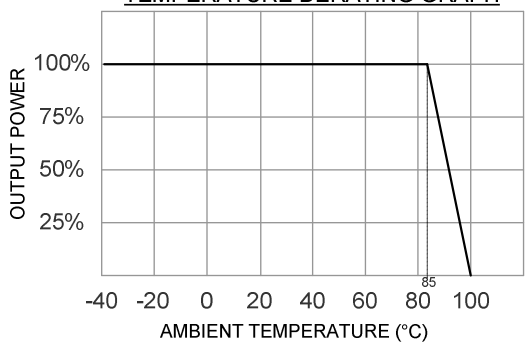
All dimensions are typical in millimeters (inches).
- Pin diameter: 0.5 +/-0.05 (0.02 +/-0.002)
- Pin pitch tolerance: +/-0.35 (+/-0.014)
- Case tolerance +/-0.5 (+/-0.02)

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SIP4 – PLASTIC CASE

TEMPERATURE DERATING GRAPH



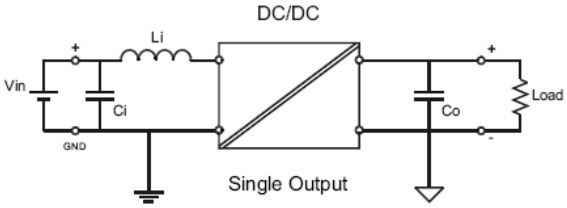
PIN CONNECTIONS	
#	SINGLE
1	- Vin
2	+Vin
3	- Vout
4	+Vout

App Notes:

[1] = Measured Input reflected ripple current with a simulated source inductance of 12uH.
[2] = 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