

# P6BUI-xxxxZLF (1kV) P6KUI-xxxxZLF (3kV)

## PMA-SERIES

Rev. 07-2015

- ✓ 1 Watt
- ✓ Unregulated
- ✓ Dual Separate Output
- ✓ DIP8 Case
- ✓ 1-3 kV DC I/O Isolation
- ✓ Low Ripple and Noise

The PMA series is a family of cost effective 0.25 – 1.5W single/dual output DC/DC converters. They are encapsulated in an ultra miniature SIP4 (PxAU/IU...) or DIP8 (PxBU/KU...) case. High performance features: 1000-3000Vdc input/output isolation, high efficiency operation, output voltage accuracy of  $\pm 3\%$  maximum, input range of  $\pm 10\%$  and low output ripple and noise.

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

### Input Specifications

Voltage Range	$\pm 10\%$
Current max.	50 – 478mA (See table)
Current No-Load	5 – 38mA (See table)
Filter	Capacitors
Reflected Ripple Current (@12uH)	20mA pk-pk

### General Specifications

Efficiency	70% - 83% (See table)
Isolation I/O (60sec)	1000VDC (P6BUI-xxxxZLF) 3000VDC (P6KUI-xxxxZLF)
Isolation I/O Capacitance	60 pF
Isolation I/O Resistance	1000 M $\Omega$
Isolation O/O (60sec)	1000VDC
Switching Frequency	80 kHz (variable)
Humidity (rel.)	95%
MTBF (Calculated MIL-HDBK-217F)	>1.121 Mhrs
Safety Standard (designed to meet)	IEC 60950-1

### EMC Specifications

Radiated Emissions	EN55022	Class B
Conducted Emissions*	EN55022	Class B
ESD	IEC-61000-4-2	Pref. Criteria A
RS	IEC-61000-4-3	Pref. Criteria A
EFT*	IEC-61000-4-4	Pref. Criteria A
Surge*	IEC-61000-4-5	Pref. Criteria A
CS	IEC-61000-4-6	Pref. Criteria A
PFMF	IEC-61000-4-8	Pref. Criteria A

\*Input filter components are required to meet conducted emission class B (see App Note). An external filter capacitor (e.g. 470uF/100V) is required if the module has to meet IEC61000-4-4 and IEC61000-4-5.

### Output Specifications

Voltage accuracy	$\pm 3\%$
Line regulation (per 1% Vin change)	$\pm 1.2\%$
Load regulation ( 20% to 100% )	$\pm 10\%$ (for 3.3Vout) $\pm 15\%$
Ripple & noise (20 MHz bandwidth)	100 mV pk-pk
Temperature coefficient	$\pm 0.02\%/^{\circ}\text{C}$
Capacitor load (Test: min. Vin + const. load)	100uF

### Environment / Physical Specifications

Operation Temp. (Derating)	-40°C to 85°C
Case max.	100°C
Storage	-40°C to 125°C
Cooling	Nature / Free Air
Case Material	Plastic (UL94V-0 rated)
Potting	Epoxy (UL94V-0 rated)
Pin Material	Brass (Solder coated)
Weight	~1.8 g



Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency (%)
<b>DUAL SEPARATE OUTPUT</b>						
P6BUI-3R33R33R3ZLF	3.3	20	399	3.3, 3.3	152, 152	76
P6BUI-3R30505ZLF	3.3	25	433	5, 5	100, 100	70
P6BUI-3R37R27R2ZLF	3.3	25	433	7.2, 7.2	69, 69	70
P6BUI-3R30909ZLF	3.3	30	410	9, 9	56, 56	74
P6BUI-3R31212ZLF	3.3	38	478	12, 12	50, 50	76
P6BUI-3R31515ZLF	3.3	30	404	15, 15	33, 33	75
P6BUI-3R31818ZLF	3.3	30	399	18, 18	28, 28	76
P6BUI-3R32424ZLF	3.3	30	472	24, 24	25, 25	77
P6BUI-053R33R3ZLF	5	15	299	3.3, 3.3	152, 152	67
P6BUI-050505ZLF	5	20	247	5, 5	100, 100	81
P6BUI-057R27R2ZLF	5	16	260	7.2, 7.2	69, 69	77
P6BUI-050909ZLF	5	15	253	9, 9	56, 56	79
P6BUI-051212ZLF	5	20	300	12, 12	50, 50	80
P6BUI-051515ZLF	5	20	247	15, 15	33, 33	81
P6BUI-051818ZLF	5	20	247	18, 18	28, 28	81
P6BUI-052424ZLF	5	25	320	24, 24	25, 25	75
P6BUI-123R33R3ZLF	12	15	111	3.3, 3.3	152, 152	75
P6BUI-120505ZLF	12	10	111	5, 5	100, 100	75
P6BUI-127R27R2ZLF	12	10	107	7.2, 7.2	69, 69	78
P6BUI-120909ZLF	12	10	105	9, 9	56, 56	79
P6BUI-121212ZLF	12	15	125	12, 12	50, 50	80
P6BUI-121515ZLF	12	13	104	15, 15	33, 33	80
P6BUI-121818ZLF	12	20	107	18, 18	28, 28	78
P6BUI-122424ZLF	12	20	128	24, 24	25, 25	78
P6BUI-153R33R3ZLF	15	20	89	3.3, 3.3	152, 152	75
P6BUI-150505ZLF	15	20	88	5, 5	100, 100	76
P6BUI-157R27R2ZLF	15	20	88	7.2, 7.2	69, 69	76
P6BUI-150909ZLF	15	15	88	9, 9	56, 56	76
P6BUI-151212ZLF	15	15	107	12, 12	50, 50	75
P6BUI-151515ZLF	15	15	89	15, 15	33, 33	75
P6BUI-151818ZLF	15	20	87	18, 18	28, 28	77
P6BUI-152424ZLF	15	20	104	24, 24	25, 25	77
P6BUI-243R33R3ZLF	24	5	53	3.3, 3.3	152, 152	79
P6BUI-240505ZLF	24	8	50	5, 5	100, 100	83
P6BUI-247R27R2ZLF	24	5	53	7.2, 7.2	69, 69	78
P6BUI-240909ZLF	24	8	54	9, 9	56, 56	77
P6BUI-241212ZLF	24	6	63	12, 12	50, 50	80
P6BUI-241515ZLF	24	6	54	15, 15	33, 33	77
P6BUI-241818ZLF	24	13	56	18, 18	28, 28	74
P6BUI-242424ZLF	24	5	65	24, 24	25, 25	77

### How to Order:

Standard <b>1 kV</b> Isolation	P6 <b>B</b> UI-xxxxZLF
Standard <b>3 kV</b> Isolation	P6 <b>K</b> UI-xxxxZLF



## Package / Pinning / Derating

Bottom View

All dimensions are typical in millimeters (inches).

- Pin diameter: 1.0 +/-0.05 (0.04 +/-0.002)
- Pin pitch tolerance: +/-0.35 (+/-0.014)
- Case tolerance +/-0.5 (+/-0.02)

Specification may change without notice.

### DIP 8 – PLASTIC CASE

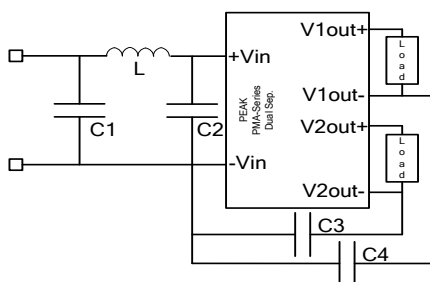
**TEMPERATURE DERATING GRAPH**

PIN CONNECTIONS	
#	DUAL Sep.
1	-Vin
4	+Vin
5	+V1out
6	-V1out
7	+V2out
8	-V2out
others	no Pin

### App Notes:

- Operation under no-load conditions will not damage these devices, but they will not observe the listed specifications.

### EMC Typical Recommended Circuit (CLASS B):



Vin	C1	C2	C3 / C4	L
3.3	2.2uF/100V	-	-	18uH
5	2.2uF/100V	-	-	18uH
12	2.2uF/100V	-	-	18uH
15	2.2uF/100V	-	-	18uH
24	2.2uF/100V	2.2uF/100V	470pF/2kV	18uH

