### P10CU-xxxxE/Z LF

PM3-SERIES

Rev.02-2009

- ✓ 2 Watt
- ✓ Unregulated
- ✓ Single and Dual Output
- ✓ SIP7 Case
- √ 1 kV DC I/O Isolation
- ✓ Low Ripple and Noise

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The PM3 series P10CU-xxxxE/ZLF is a family of cost effective 2 W single & dual output DC-DC converters. These converters are in an ultra miniature SIP7 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 Ta=25°C, nominal input voltage and full load unless otherwise specified

**Input Specifications** 

Voltage Range ± 10%
Input Filter Capacitor
Input Reflected Ripple Current¹ 20 mA pk-pk

**Output Specifications** 

Voltage Accuracy $\pm$  3%Short Circuit ProtectionShort TermLine Regulation $\pm$  1.2% / 1% Vin ChangeLoad Regulation (20% - 100%) $\pm$  10% (3.3 Vout Models:  $\pm$  20%)Ripple and Noise (20Mhz bandwidth)75 mV pk-pkTemperature Coefficient $\pm$  0.02% /  $^{\circ}$ C

**General Specifications** 

Efficiency

I/O Isolation Voltage (3 sec.)

I/O Isolation Capacity

I/O Isolation Resistance

I/O Isolation Capacity

I/O Isolation Resistance

I/O Isol

**Physical Specifications** 

Case Material

Potting Material

Potting Material

Weight

Non Conductive Black Plastic (UL94V-0 rated)

Epoxy (UL94V-0 rated)

~ 2.3g, typ.

**Environment Specifications** 

Operating Temperature

-40 to +85 °C (ambient)

Maximum Case Temperature

100 °C

Storage Temperature

-40 to +125 °C

-40 to +125 °C

Free Air Convection (10 mm distance required)

RoHS Conform

Soldering 260 °C, max. (1.5 mm from case 10s.)



## Selection Guide Single Output

		<b>-</b> C)	lubry Cruce Leuf No Tosc	Onton Aout Onton Aout Onton On	nA) <sub>age (VDC)</sub> Output Curre	, "1.08dl	$(A_m)$
	Input Volta	ide (ADC)	rent No Low	Onton Notes Ont Enll Fosq (u	age (Apo)	int Full 2	Cabacito <sub>L</sub> Toaq
Order #	lubry Ag.	Iubn <sub>f</sub> Co.	Iubry Ca.	Ontbry ,	Ontbru 2	Efficiency	Cabacue
<b>SINGLE OUTPUT</b>							
P10CU-3R305ELF	3.3	35	830	5	400	73	470
P10CU-053R3ELF	5	30	367	3.3	400	72	470
P10CU-0505ELF	5	30	512	5	400	78	470
P10CU-057R2ELF	5	30	500	7.2	277.7	80	470
P10CU-0509ELF	5	30	500	9	222.2	80	470
P10CU-0512ELF	5	30	487	12	166.7	82	470
P10CU-0515ELF	5	30	487	15	133.3	82	470
P10CU-0518ELF	5	30	487	18	111.1	82	470
P10CU-0524ELF	5	30	487	24	83.3	82	470
P10CU-123R3ELF	12	36	169	3.3	400	65	470
P10CU-1205ELF	12	20	216	5	400	77	470
P10CU-127R2ELF	12	20	208	7.2	277.7	80	470
P10CU-1209ELF	12	20	208	9	222.2	80	470
P10CU-1212ELF	12	20	203	12	166.7	82	470
P10CU-1215ELF	12	20	203	15	133.3	82	470
P10CU-1218ELF	12	20	208	18	111.1	80	470
P10CU-1224ELF	12	20	208	24	83.3	80	470
P10CU-243R3ELF	24	10	76	3.3	400	72	470
P10CU-2405ELF	24	10	105	5	400	79	470
P10CU-247R2ELF	24	10	104	7.2	277.7	80	470
P10CU-2409ELF	24	10	104	9	222.2	80	470
P10CU-2412ELF	24	10	102	12	166.7	80	470
P10CU-2415ELF	24	10	101	15	133.3	82	470
P10CU-2418ELF	24	10	101	18	111.1	82	470
P10CU-2424ELF	24	10	104	24	83.3	80	470
P10CU-483R3ELF	48	6	45	3.3	400	60	470
P10CU-4805ELF	48	6	54	5	400	77	470
P10CU-487R2ELF	48	6	54	7.2	277.7	77	470
P10CU-4809ELF	48	6	54	9	222.2	77	470
P10CU-4812ELF	48	6	53	12	166.7	78	470
P10CU-4815ELF	48	6	53	15	133.3	78	470
P10CU-4818ELF	48	6	53	18	111.1	78	470
P10CU-4824ELF	48	6	55	24	83.3	75	470
If you need other o	spooifica.	tions	nlaaca	onguiro			

If you need other specifications, please enquire.

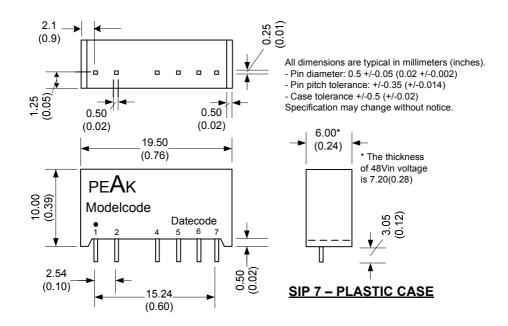


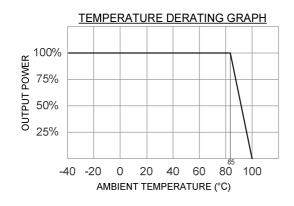
# Selection Guide Dual Output

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0 1 "	out Volta	ide (A.	Leut Ido	ut Formut Volt	age , Chue	ur.	olo)
Order #	lubas	lubas	lubas	Onih	Onib	Ellio	Csh
DUAL OUTPUT P10CU-053R3ZLF	E	20	406	± 2 2	+ 200	GE.	± 220
P10CU-053R3ZLF	5 5	30 30	555	± 3.3	± 200	65 72	
P10CU-05052LF P10CU-057R2ZLF	5 5	30	555	± 5 ± 7.2	± 200	72 72	± 220 ± 220
P10CU-057R2ZLF P10CU-0509ZLF	5 5				± 138.8	72 77	
P10CU-0509ZLF		30	519 512	± 9	± 111.1	7 <i>7</i>	± 220
P10CU-0512ZLF P10CU-0515ZLF	5 5	30	500	± 12	± 83.3	80	± 220
		30		± 15	± 66.67		± 220
P10CU-0518ZLF P10CU-0524ZLF	5 5	30	500	± 18	± 55.55	80 80	± 220
		30	500	± 24	± 41.67		± 220
P10CU-123R3ZLF	12	20	164	± 3.3	± 200	67 75	± 220
P10CU-1205ZLF	12	20	222	±5	± 200	75 70	± 220
P10CU-127R2ZLF	12	20	219	± 7.2	± 138.8	76	± 220
P10CU-1209ZLF	12	20	216	± 9	± 111.1	77	± 220
P10CU-1212ZLF	12	20	203	± 12	± 83.3	82	± 220
P10CU-1215ZLF	12	20	203	± 15	± 66.67	82	± 220
P10CU-1218ZLF	12	20	203	± 18	± 55.55	82	± 220
P10CU-1224ZLF	12	20	203	± 24	± 41.67	82	± 220
P10CU-243R3ZLF	24	10	80	± 3.3	± 200	68	± 220
P10CU-2405ZLF	24	10	111	± 5	± 200	75	± 220
P10CU-247R2ZLF	24	10	111	± 7.2	± 138.8	75	± 220
P10CU-2409ZLF	24	10	104	± 9	± 111.1	80	± 220
P10CU-2412ZLF	24	10	101	± 12	± 83.3	82	± 220
P10CU-2415ZLF	24	10	101	± 15	± 66.67	82	± 220
P10CU-2418ZLF	24	10	101	± 18	± 55.55	82	± 220
P10CU-2424ZLF	24	10	101	± 24	± 41.67	82	± 220
P10CU-483R3ZLF	48	6	45	± 3.3	± 200	60	± 220
P10CU-4805ZLF	48	6	57	± 5	± 200	73	± 220
P10CU-487R2ZLF	48	6	54	± 7.2	± 138.8	77	± 220
P10CU-4809ZLF	48	6	54	± 9	± 111.1	77	± 220
P10CU-4812ZLF	48	6	52	± 12	± 83.3	80	± 220
P10CU-4815ZLF	48	6	52	± 15	± 66.67	80	± 220
P10CU-4818ZLF	48	6	52	± 18	± 55.55	80	± 220
P10CU-4824ZLF	48	6	52	± 24	± 41.67	80	± 220
If you need other s	specifica:	<u>tions,</u>	please	enquire	<u>).</u>		



### Package / Pinning / Derating





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

#### **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  $4.7\mu\text{F}\sim220\mu\text{F}(\pm4.7\mu\text{F}\sim\pm100\mu\text{F}\text{ for dual output)}$  capacitor in output end. For EMI performance improvement, it is recommended to add a  $12\mu\text{H}$  inductor and a  $10\mu\text{F}\sim100\mu\text{F}$  capacitor in input end.

