

P5DU-xxxxE/Z LF (1kV)

P5MU-xxxxE/Z (Hxx)LF (3-6kV)

PM1-SERIES

Rev. 01-2017

- ✓ 0.75 Watt
- ✓ Unregulated
- ✓ Single and Dual Output
- ✓ DIP14 Case
- ✓ 1-6 kV DC I/O Isolation
- ✓ Low Ripple and Noise

The PM1 series is a family of cost effective 0.5 – 1W single output DC/DC converters. They are encapsulated in an ultra miniature SIP7 (PxCU/LU...) or DIP14 (PxDU/MU...) case. High performance features: 1000-6000Vdc input/output isolation, high efficiency operation, output voltage accuracy of ±3% maximum, input range of ±10% and low output ripple and noise. 1W converters are ready for UL.

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

Input Specifications

Voltage Range	±10%
Current max.	20 – 230mA (See table)
Current No-Load	6 – 30mA (See table)
Filter	Capacitors
Reflected Ripple Current (@12uH)	20mA pk-pk

General Specifications

Efficiency	62% - 80% (See table)
Isolation I/O (3 sec)	1000VDC (P5DU-xxxxELF) 3000VDC (P5MU-xxxxELF) 4000-6000VDC (P5MU-xxxxEHxxLF)
Isolation I/O Capacitance	60 pF
Isolation I/O Resistance	1000 MΩ
Switching Frequency	80 kHz (variable)
Humidity (rel.)	95%
MTBF (Calculated MIL-HDBK-217F)	>1.121 Mhrs
Safety Standard (designed to meet)	IEC/EN 60950-1

Output Specifications

Voltage accuracy	±3%
Line regulation (per 1% Vin change)	±1.2%
Load regulation (20% to 100%)	±10%,max. (for 3.3Vout) ±20%,max.
Ripple & noise (20 MHz bandwidth)	75 mV pk-pk
Temperature coefficient	±0.02%/°C
Capacitor load (Test: min. Vin + const. load)	100uF (Single out) ± 100uF (Dual out)

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	Alloy42 (Solder coated)
Weight	2.6 g

How to Order:

Standard 1 kV Isolation	P5DU-xxxxELF or ZLF
Standard 3 kV Isolation	P5MU-xxxxELF or ZLF
Optional 4 kV Isolation	P5MU-xxxxEH40LF or ...ZH40LF
Optional 5.2 kV Isolation	P5MU-xxxxEH52LF or ...ZH52LF
Optional 6 kV Isolation	P5MU-xxxxEH60LF or ...ZH60LF



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)
SINGLE OUTPUT							
P5DU/MU-053R3ELF	5	30	205	3.3	227.3	73	100
P5DU/MU-0505ELF	5	30	200	5	150	75	100
P5DU/MU-057R2ELF	5	30	202	7.2	104.2	74	100
P5DU/MU-0509ELF	5	30	200	9	83.3	75	100
P5DU/MU-0512ELF	5	30	197	12	62.5	76	100
P5DU/MU-0515ELF	5	30	197	15	50	76	100
P5DU/MU-0518ELF	5	30	197	18	41.7	76	100
P5DU/MU-0524ELF	5	30	194	24	31.2	77	100
P5DU/MU-123R3ELF	12	20	85	3.3	227.3	73	100
P5DU/MU-1205ELF	12	20	84	5	150	74	100
P5DU/MU-127R2ELF	12	20	84	7.2	104.2	74	100
P5DU/MU-1209ELF	12	20	83	9	83.3	75	100
P5DU/MU-1212ELF	12	20	81	12	62.5	77	100
P5DU/MU-1215ELF	12	20	80	15	50	78	100
P5DU/MU-1218ELF	12	20	80	18	41.7	78	100
P5DU/MU-1224ELF	12	20	80	24	31.2	78	100
P5DU/MU-243R3ELF	24	10	42	3.3	227.3	74	100
P5DU/MU-2405ELF	24	10	42	5	150	74	100
P5DU/MU-247R2ELF	24	10	41	7.2	104.2	75	100
P5DU/MU-2409ELF	24	10	41	9	83.3	75	100
P5DU/MU-2412ELF	24	10	40	12	62.5	78	100
P5DU/MU-2415ELF	24	10	40	15	50	78	100
P5DU/MU-2418ELF	24	10	40	18	41.7	78	100
P5DU/MU-2424ELF	24	10	39	24	31.2	80	100
P5DU/MU-483R3ELF	48	6	21	3.3	227.3	72	100
P5DU/MU-4805ELF	48	6	21	5	150	72	100
P5DU/MU-487R2ELF	48	6	21	7.2	104.2	72	100
P5DU/MU-4809ELF	48	6	21	9	83.3	74	100
P5DU/MU-4812ELF	48	6	21	12	62.5	74	100
P5DU/MU-4815ELF	48	6	20	15	50	75	100
P5DU/MU-4818ELF	48	6	20	18	41.7	75	100
P5DU/MU-4824ELF	48	6	21	24	31.2	73	100

If you need other specifications, please enquire.

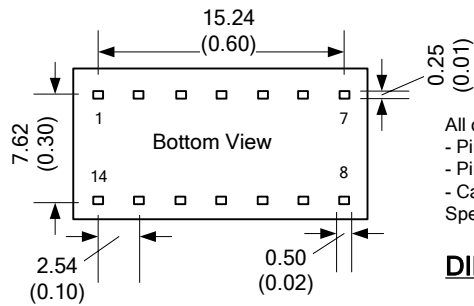


Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (µF)
DUAL OUTPUT							
P5DU/MU-053R3ZLF	5	30	230	±3.3	±113.6	65	±100
P5DU/MU-0505ZLF	5	30	211	±5	±75	71	±100
P5DU/MU-057R2ZLF	5	30	202	±7.2	±52	74	±100
P5DU/MU-0509ZLF	5	30	202	±9	±41.6	74	±100
P5DU/MU-0512ZLF	5	30	197	±12	±31.2	76	±100
P5DU/MU-0515ZLF	5	30	197	±15	±25	76	±100
P5DU/MU-0518ZLF	5	30	189	±18	±20.8	79	±100
P5DU/MU-0524ZLF	5	30	189	±24	±15.6	79	±100
P5DU/MU-123R3ZLF	12	20	126	±3.3	±113.6	65	±100
P5DU/MU-1205ZLF	12	20	85	±5	±75	73	±100
P5DU/MU-127R2ZLF	12	20	84	±7.2	±52	74	±100
P5DU/MU-1209ZLF	12	20	84	±9	±41.6	74	±100
P5DU/MU-1212ZLF	12	20	80	±12	±31.2	78	±100
P5DU/MU-1215ZLF	12	20	78	±15	±25	80	±100
P5DU/MU-1218ZLF	12	20	78	±18	±20.8	80	±100
P5DU/MU-1224ZLF	12	20	80	±24	±15.6	78	±100
P5DU/MU-243R3ZLF	24	10	46	±3.3	±113.6	67	±100
P5DU/MU-2405ZLF	24	10	42	±5	±75	74	±100
P5DU/MU-247R2ZLF	24	10	41	±7.2	±52	76	±100
P5DU/MU-2409ZLF	24	10	41	±9	±41.6	76	±100
P5DU/MU-2412ZLF	24	10	40	±12	±31.2	78	±100
P5DU/MU-2415ZLF	24	10	40	±15	±25	78	±100
P5DU/MU-2418ZLF	24	10	40	±18	±20.8	78	±100
P5DU/MU-2424ZLF	24	10	40	±24	±15.6	78	±100
P5DU/MU-483R3ZLF	48	6	25	±3.3	±113.6	62	±100
P5DU/MU-4805ZLF	48	6	24	±5	±75	65	±100
P5DU/MU-487R2ZLF	48	6	22	±7.2	±52	70	±100
P5DU/MU-4809ZLF	48	6	21	±9	±41.6	72	±100
P5DU/MU-4812ZLF	48	6	21	±12	±31.2	74	±100
P5DU/MU-4815ZLF	48	6	21	±15	±25	74	±100
P5DU/MU-4818ZLF	48	6	21	±18	±20.8	72	±100
P5DU/MU-4824ZLF	48	6	22	±24	±15.6	70	±100

If you need other specifications, please enquire.

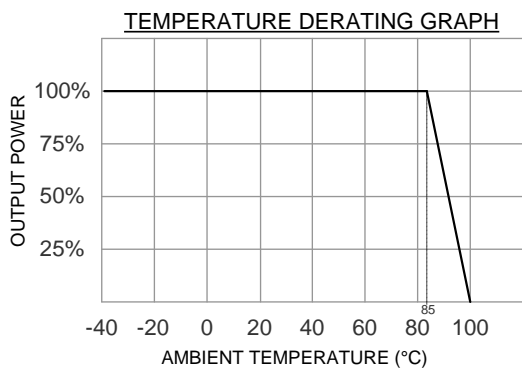
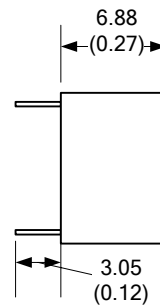
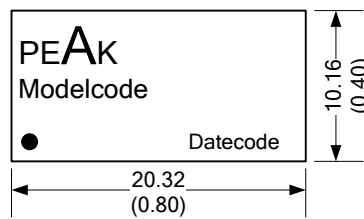


Package / Pinning / Derating



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)
 Specification may change without notice.

DIP14 - PLASTIC CASE



PIN CONNECTIONS				
Model	P5DU (1kV)		P5MU (3-6kV)	
#	SINGLE	DUAL	SINGLE	DUAL
1	-Vin	-Vin	-Vin	-Vin
7	NC	NC	NC	NC
8	no Pin	Common	+Vout	+Vout
9	+Vout	+Vout	no Pin	Common
10	no Pin	no Pin	-Vout	-Vout
11	-Vout	-Vout	no Pin	no Pin
14	+Vin	+Vin	+Vin	+Vin

App Notes:

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

