

P42TG-xxxxE/Z2:1MLF



PMD-SERIES

Rev.11-2008

- ✓ 10 Watt
- ✓ Regulated
- ✓ **Single and Dual Output**
- ✓ **1.5 kV DC I/O Isolation**
- ✓ **DIP24 Metal Case**
- ✓ **Continuous Short Circuit Prot.**
- ✓ **Full SMD Technology**

The PMD 10W series P42TG-xxxxE/Z2:1MLF is a family of cost effective 10W single & dual output DC-DC converters. These converters are encapsulated in miniature DIP24 metal case. High performance features: 1500VDC input/output isolation, continuous short circuit protection with automatic restart and tight line / load regulation, high efficiency operation, output voltage accuracy of $\pm 1\%$ maximum. And a wide input of 2:1

All specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified

Input Specifications

Voltage Range	2:1 Wide Input
Input Filter	Pi Type
Input Reflected Ripple Current ¹	20 mA pk-pk
Start Up Time (nom. V_{in} and constant resistive load)	20mS, typ.

Output Specifications

Voltage Accuracy	$\pm 1\%$
Short Circuit Protection	Indefinite (hiccup, automatic recovery)
Line Regulation ²	$\pm 0.5\%$
Load Regulation ³ ($I_o = 10 - 100\%$)	$\pm 0.5\%$ (2.5, 3.3Vout Models: $\pm 0.7\%$)
Cross Regulation ³ (Dual Output)	$\pm 5\%$
Over Current Protection	150% of FL, typ.
Ripple and Noise (20Mhz bandwidth)	75 mV pk-pk
Temperature Coefficient	$\pm 0.02\% / ^\circ\text{C}$
Transient Recovery Time ⁴	200us, typ
Transient Response Deviation ⁴	$\pm 3\%$, max.

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1500 VDC
I/O Isolation Capacity	1000 pF, typ.
I/O Isolation Resistance	1000 MOhm
Switching Frequency (typical)	330 kHz
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1 Mhrs

Physical Specifications

Case Material	Nickel Coated Copper
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 17.0g, typ.

Environment Specifications

Operating Temperature	-40 to +60 $^\circ\text{C}$ (ambient)
Maximum Case Temperature	100 $^\circ\text{C}$
Storage Temperature	-40 to +125 $^\circ\text{C}$
Cooling	Free Air Convection
RoHS Conform	Soldering 260 $^\circ\text{C}$, max. (1.5mm from case 10s.)

PMD-Series – P42TG-xxxxE/Z2:1MLF – Single and Dual Output – DIP24 - Metal Case

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

Selection Guide

Single/Dual Output

Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) ⁵
SINGLE OUTPUT								
P42TG-122R5E2:1LF	9-18	10	791	2.5	0	3000	81	2200
P42TG-123R3E2:1LF	9-18	10	1006	3.3	0	3000	84	2200
P42TG-1205E2:1LF	9-18	10	992	5	0	2000	86	2200
P42TG-1212E2:1LF	9-18	10	980	12	0	833	87	820
P42TG-1215E2:1LF	9-18	10	958	15	0	667	89	470
P42TG-242R5E2:1LF	18-36	10	381	2.5	0	3000	84	2200
P42TG-243R3E2:1LF	18-36	10	497	3.3	0	3000	85	2200
P42TG-2405E2:1LF	18-36	10	479	5	0	2000	89	2200
P42TG-2412E2:1LF	18-36	10	485	12	0	833	88	820
P42TG-2415E2:1LF	18-36	10	485	15	0	667	88	470
P42TG-482R5E2:1LF	36-75	10	191	2.5	0	3000	84	2200
P42TG-483R3E2:1LF	36-75	10	249	3.3	0	3000	85	2200
P42TG-4805E2:1LF	36-75	10	242	5	0	2000	88	2200
P42TG-4812E2:1LF	36-75	10	245	12	0	833	87	820
P42TG-4815E2:1LF	36-75	10	242	15	0	667	88	470

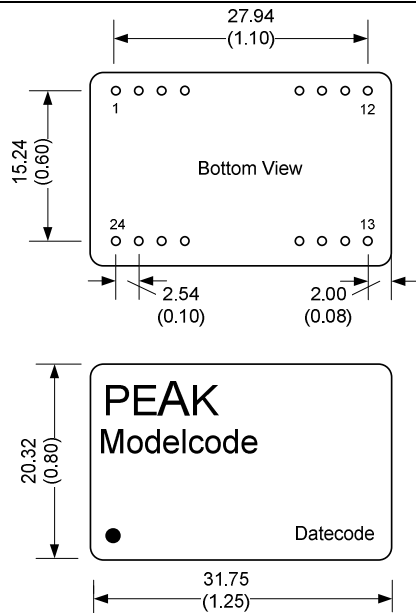
DUAL OUTPUT

P42TG-1212Z2:1LF	9-18	10	980	± 12	0	± 416	87	± 220
P42TG-1215Z2:1LF	9-18	10	969	± 15	0	± 333	88	± 150
P42TG-2412Z2:1LF	18-36	10	485	± 12	0	± 416	88	± 220
P42TG-2415Z2:1LF	18-36	10	474	± 15	0	± 333	90	± 150
P42TG-4812Z2:1LF	36-75	10	245	± 12	0	± 416	87	± 220
P42TG-4815Z2:1LF	36-75	10	245	± 15	0	± 333	87	± 150

If you need other specifications, please enquire.

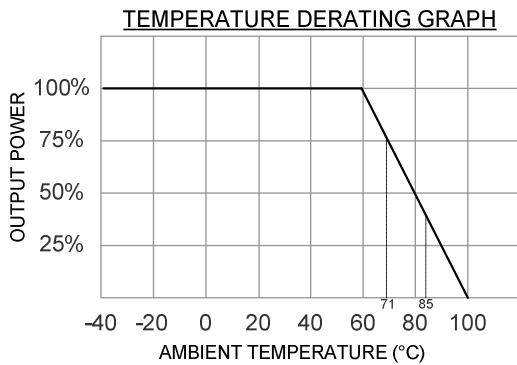
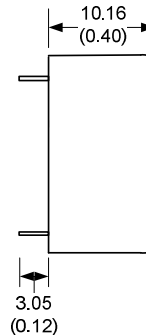
Notes:

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)
 Standard Drawing
 For exact pinning please see connection table!
 Specification may change without notice.

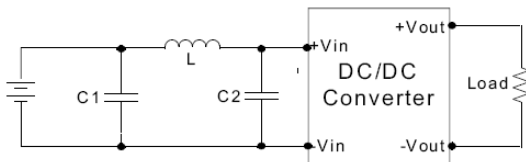
DIP24 – METAL CASE



PIN CONNECTIONS		
#	SINGLE	DUAL
2	- Vin	- Vin
3	- Vin	- Vin
9	Omitted	Common
11	N.C.	- Vout
14	+Vout	+Vout
16	- Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin
others	Omitted	Omitted

App Notes:

- 1 = Measured Input reflected ripple current with a simulated source inductance of 12uH.
- 2 = Operation between no load and 10% load conditions will not damage the module, but it may not meet all specifications listed
- 3 = One load is 25% - 100%, the other load is 100%, the output voltage variable rate is within ± 5%
- 4 = Tested by nominal Vin and 25% load step change (75% - 50% - 25% of Io)
- 5 = Tested by minimal Vin and constant resistor load.
- 6 = Input filter components (C1,L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; all leads should be minimized to decrease radiated noise.
- 7 = An external filter capacitor (e.g. Nippon-chemi-con KY ser. 220uF/100V) is required if the module has to meet EN61000-4-5.



Over Voltage Protection (Zener diode clamp)	
2.5 Vout, 3.3 Vout:	3.9 V
5 Vout	6.2 V
12 Vout	15 V
15 Vout	18 V
± 12 Vout	± 15 V
± 15 Vout	± 18 V

EMC SPECIFICATIONS		
Radiated Emissions	EN 55022	CLASS A
Conducted Emissions ⁶	EN55022	CLASS A
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A
EFT	IEC 61000-4-4	Perf. Criteria B
Surge ⁷	IEC 61000-4-5	Perf. Criteria B
CS	IEC 61000-4-6	Perf. Criteria A
PFMF	IEC 61000-4-8	Perf. Criteria A