

P44TG-xxxxE/Z4:1MLF



PMV-SERIES

Rev.02-2009

- ✓ 12 Watt, 4:1 Ultra Wide Input
- ✓ **DIP24 Metal Case**
- ✓ **1.5 kV DC I/O Isolation**
- ✓ **Single and Dual Reg. Output**
- ✓ **Continuous Short Circuit Prot.**
- ✓ **Over Voltage/Load Protection**
- ✓ **Soft Start, Remote Ctrl.**

The PMV 12W series P44TG-xxxxE/Z4:1MLF is a family of cost effective 12W single & dual output DC-DC converters. These converters are encapsulated in miniature DIP24 metal case. High performance features: Synchronous rectification, 1500VDC input/output isolation, continuous short circuit protection with automatic restart and tight line / load regulation, high efficiency operation, output voltage accuracy of $\pm 1.2\%$ maximum and a wide input range of 4:1

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

Input Specifications

Voltage Range	4:1 Wide Input
Input Filter	Pi Type
Input Reflected Ripple Current	20 mA pk-pk
Start-up Time	20mS, typ

Output Specifications

Voltage Accuracy	$\pm 1.2\%$
Short Circuit Protection	Indefinite (hiccup, Automatic Recovery)
Line Regulation	$\pm 0.2\%$
Load Regulation (0% – 100%)	$\pm 0.5\%$ (Single Out) $\pm 1.0\%$ (Dual Out)
Cross Regulation ¹ (Dual Output)	$\pm 5\%$
Ripple and Noise ³ (20Mhz bandwidth)	85 mV pk-pk
Over Load Protection	170% of FL, typ.
Temperature Coefficient	$\pm 0.02\%$ / $^\circ\text{C}$
Transient Recovery Time ⁴	250us, typ.
Transient Response Deviation ⁴	$\pm 3\%$, max.

General Specifications

I/O Isolation Voltage (3 sec.)	1500 VDC
I/O Isolation Capacitance	1500 pF, typ.
I/O Isolation Resistance	1000 MOhm
Switching Frequency (typical)	270 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	~ 18g, typ.

Environment Specifications

Operating Temperature	-40 to +60 $^\circ\text{C}$ (ambient, for 100% load)
Maximum Case Temperature	105 $^\circ\text{C}$
Storage Temperature	-40 to +125 $^\circ\text{C}$
Cooling	Free Air Convection (10 mm distance required)
RoHS Conform	Soldering 260 $^\circ\text{C}$, max. (1.5 mm from case 10s.)

Selection Guide

Single/Dual Output

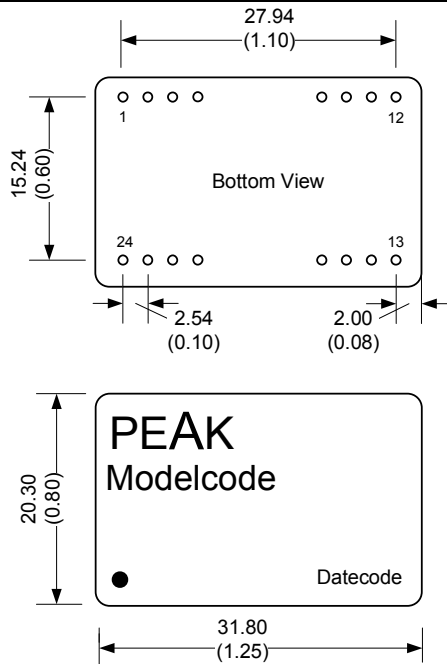
Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) ²	
SINGLE OUTPUT									
P44TG-243R3E4:1LF	9-36	15	573	3.3	0	3500	87	2000	
P44TG-245R1E4:1LF	9-36	15	581	5.1	0	2400	89	2000	
P44TG-2412E4:1LF	9-36	15	574	12	0	1000	90	430	
P44TG-2415E4:1LF	9-36	15	574	15	0	800	90	300	
P44TG-483R3E4:1LF	18-75	15	286	3.3	0	3500	87	2000	
P44TG-485R1E4:1LF	18-75	15	290	5.1	0	2400	89	2000	
P44TG-4812E4:1LF	18-75	15	287	12	0	1000	90	430	
P44TG-4815E4:1LF	18-75	15	287	15	0	800	90	300	

DUAL OUTPUT									
P44TG-2405Z4:1LF	9-36	15	595	± 5	0	± 1200	87	± 1250	
P44TG-2412Z4:1LF	9-36	15	574	± 12	0	± 500	90	± 200	
P44TG-2415Z4:1LF	9-36	15	574	± 15	0	± 400	90	± 120	
P44TG-4805Z4:1LF	18-75	15	297	± 5	0	± 1200	87	± 1250	
P44TG-4812Z4:1LF	18-75	15	287	± 12	0	± 500	90	± 200	
P44TG-4815Z4:1LF	18-75	15	287	± 15	0	± 400	90	± 120	

If you need other specifications, please enquire.

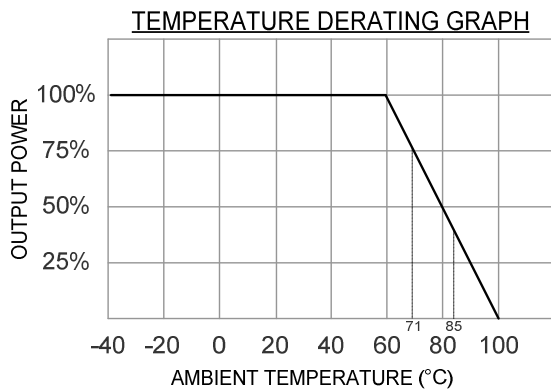
Notes:

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
1	Remote Ctrl.	Remote Ctrl.
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

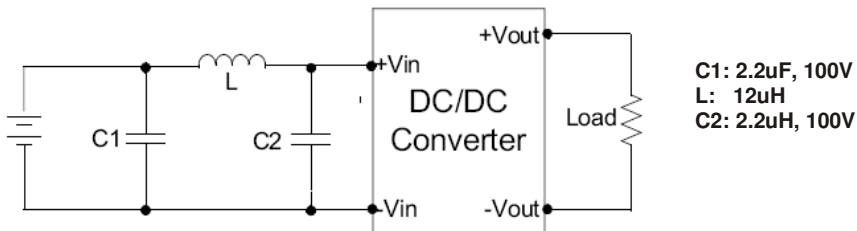
App Notes:

Over Voltage Protection (Zender diode clamp)	
3.3 Vout:	3.9 V
5.1 Vout	6.2 V
12 Vout	15 V
15 Vout	18 V
± 5 Vout	± 6.2 V
± 12 Vout	± 15 V
± 15 Vout	± 18 V

EMC Characteristics		
Radiated Emissions	EN55022	CLASS A
Conducted Emissions ⁵	EN55022	CLASS A
ESD	EN61000-4-2	Perf. Criteria B
RS	EN61000-4-3	Perf. Criteria A
EFT ⁶	EN61000-4-4	Perf. Criteria B
Surge ⁶	EN61000-4-5	Perf. Criteria B
CS ⁶	EN61000-4-6	Perf. Criteria A
PFMF	EN61000-4-8	Perf. Criteria A

The Remote on/off control:

ON: 3.0 - 12.0 VDC or open circuit
 OFF: 0 - 1.2 VDC or short circuit PIN 1 and PIN 2 / 3
 OFF idle current: 5.0 mA, typ.



¹ = One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.

² = Tested by minimal Vin and constant resistive load.

³ = Measured with 20MHz bandwidth and 1.0uF ceramic capacitor.

⁴ = Tested by normal Vin and 25% load step change (75%-50%-25% of Io)

⁵ = Input filter components (C1, L, C2) are used to help meet conducted emissions requirement for the module.

These components should be mounted as close as possible to the module; and all leads should be minimized to decrease

⁶ = An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5 and EN61000-4-.

The filter capacitor Peak suggest: Nippon - chemi - con KY series, 330uF/100V

Notes: