

P18TG-xxxxE/Z2:1(H35)MLF



PMD-SERIES

Rev.11-2008

- ✓ 4 Watt
- ✓ Regulated
- ✓ **DIP24 Metal Case**
- ✓ **1.5 to 3.5 kV DC I/O Isolation**
- ✓ **SINGLE and DUAL Output**
- ✓ Continuous Short Circuit Prot.
- ✓ Full SMD Technology

The PMD 4W series P18TG-xxxxE/Z2:1(H35)MLF is a family of cost effective 4W single & dual output DC-DC converters. These converters are encapsulated in miniature DIP24 metal case. High performance features: 1500VDC up to 3500VDC 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 range 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	35 mA pk-pk

Output Specifications

Voltage Accuracy	$\pm 1\%$
Short Circuit Protection	Indefinite (automatic recovery)
Line Regulation	$\pm 0.5\%$
Load Regulation	$\pm 0.5\%$ (3.3 / $\pm 3.3V_{out}$ Models: $\pm 1.5\%$)
Ripple and Noise (20Mhz bandwidth)	60 mV pk-pk
Temperature Coefficient	$\pm 0.02\% / ^\circ\text{C}$

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1500 VDC (3500 VDC optional)*
I/O Isolation Capacity	470 pF, typ.
I/O Isolation Resistance	1000 MOhm
Switching Frequency (typical)	266 kHz
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs

Physical Specifications

Case Material	Nickel Coated Copper
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 17g, typ.

Environment Specifications

Operating Temperature	-40 to +85 $^\circ\text{C}$ (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.)

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 ² (uF)
SINGLE OUTPUT								
P18TG-123R3E2:1MLF	9-18	30	463	3.3	0	1200	72	3300
P18TG-1205E2:1MLF	9-18	30	428	5	0	800	78	1000
P18TG-1209E2:1MLF	9-18	30	428	9	0	444	78	470
P18TG-1212E2:1MLF	9-18	30	417	12	0	333	80	220
P18TG-1215E2:1MLF	9-18	30	417	15	0	266	80	100
P18TG-1224E2:1MLF	9-18	30	417	24	0	166	80	47
P18TG-243R3E2:1MLF	18-36	20	223	3.3	0	1200	75	3300
P18TG-2405E2:1MLF	18-36	20	209	5	0	800	80	1000
P18TG-2409E2:1MLF	18-36	20	209	9	0	444	80	470
P18TG-2412E2:1MLF	18-36	20	201	12	0	333	83	220
P18TG-2415E2:1MLF	18-36	20	209	15	0	266	80	100
P18TG-2424E2:1MLF	18-36	20	196	24	0	166	85	47
P18TG-483R3E2:1MLF	36-72	15	112	3.3	0	1200	75	3300
P18TG-4805E2:1MLF	36-72	15	105	5	0	800	80	1000
P18TG-4809E2:1MLF	36-72	15	102	9	0	444	82	470
P18TG-4812E2:1MLF	36-72	15	105	12	0	333	80	220
P18TG-4815E2:1MLF	36-72	15	103	15	0	266	81	100
P18TG-4824E2:1MLF	36-72	15	102	24	0	166	82	47

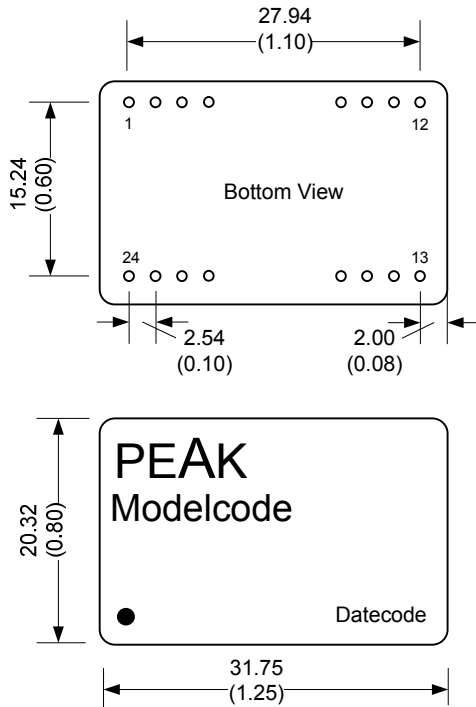
DUAL OUTPUT								
P18TG-123R3Z2:1MLF	9-18	30	452	± 3.3	0	± 600	73	± 680
P18TG-1205Z2:1MLF	9-18	30	428	± 5	0	± 400	78	± 470
P18TG-1209Z2:1MLF	9-18	30	417	± 9	0	± 220	80	± 220
P18TG-1212Z2:1MLF	9-18	30	417	± 12	0	± 166	80	± 100
P18TG-1215Z2:1MLF	9-18	30	417	± 15	0	± 133	80	± 47
P18TG-1224Z2:1MLF	9-18	30	421	± 24	0	± 83	79	± 22
P18TG-243R3Z2:1MLF	18-36	20	226	± 3.3	0	± 600	73	± 680
P18TG-2405Z2:1MLF	18-36	20	211	± 5	0	± 400	79	± 470
P18TG-2409Z2:1MLF	18-36	20	209	± 9	0	± 220	80	± 220
P18TG-2412Z2:1MLF	18-36	20	204	± 12	0	± 166	82	± 100
P18TG-2415Z2:1MLF	18-36	20	209	± 15	0	± 133	80	± 47
P18TG-2424Z2:1MLF	18-36	20	214	± 24	0	± 83	78	± 22
P18TG-483R3Z2:1MLF	36-72	15	116	± 3.3	0	± 600	72	± 680
P18TG-4805Z2:1MLF	36-72	15	107	± 5	0	± 400	78	± 470
P18TG-4809Z2:1MLF	36-72	15	107	± 9	0	± 220	78	± 220
P18TG-4812Z2:1MLF	36-72	15	105	± 12	0	± 166	80	± 100
P18TG-4815Z2:1MLF	36-72	15	105	± 15	0	± 133	80	± 47
P18TG-4824Z2:1MLF	36-72	15	105	± 24	0	± 83	80	± 22

If you need other specifications, please enquire.

*** For optional 3.5kV DC I/O Isolation, please add “H35” before MLF!**

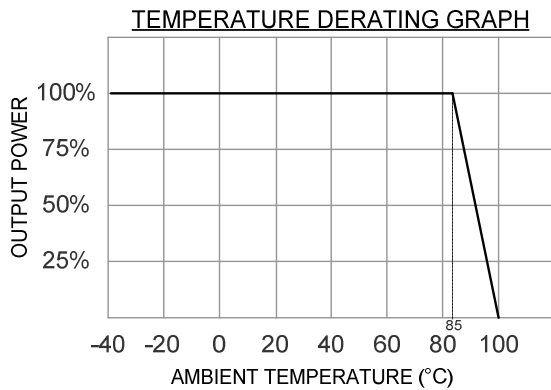
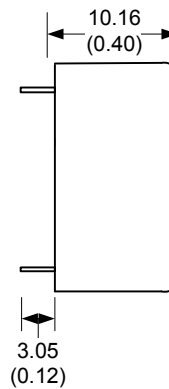
→ Example: P18TG-1205Z2:1H35MLF for 3.5kV

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

Same Pinning for 3.5kV Isolation

App Notes:

- ¹ = Measured Input reflected ripple current with a simulated source inductance of 12uH.
- ² = Tested by nominal Vin and constant resistor load.