

# PE14TGI-xxxxZ2:1LF



## PME01-SERIES

Rev.04-2009

- ✓ 3 Watt
- ✓ 2:1 Wide Input
- ✓ Regulated
- ✓ DIP24 Plastic Case
- ✓ 1.5 KV DC I/O Isolation
- ✓ Dual Separate Output
- ✓ Continuous Short Circuit Prot.

The PME01-Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board. These products apply to:

- 1) Where the voltage of the input power supply is  $\leq 2:1$  range.
- 2) Where isolation is necessary between (Isolation Voltage  $\leq 1KV$ )
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

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

### Input Specifications

Voltage Range 2:1 Wide Input

### Output Specifications

Voltage Accuracy	$\pm 1\%$ , typ (Main Out), $\pm 3\%$ , typ (Vice Out)
Short Circuit Protection	Continuous (automatic recovery)
Line Regulation	$\pm 0.2\%$ , typ.
Load Regulation (10% - 100% load)	$\pm 0.5\%$ , typ.
Ripple (20Mhz bandwidth)	20 mV pk-pk, typ.
Noise (20Mhz bandwidth)	75 mV pk-pk, typ.
Temperature Coefficient	$\pm 0.03\%$ / $^\circ C$

### General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1500 VDC
I/O Isolation Capacity	100 pF, typ.
I/O Isolation Resistance	1000 MOhm
Switching Frequency (typical)	300 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1 Mhrs

### Physical Specifications

Case Material	Non Conductive Black Plastic (UL94V-0 rated) Nickel Plated Steel* (optional – please add "M"LF)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 15g, typ.

### Environment Specifications

Operating Temperature	-40 to +85 $^\circ C$ (ambient)
Maximum Case Temperature	100 $^\circ C$
Storage Temperature	-55 to +125 $^\circ C$
Cooling	Free Air Convection (10mm distance required)
RoHS Conform	Soldering 260 $^\circ C$ , max. (1.5mm from case 10s.)

# Selection Guide

## Dual Separate Output

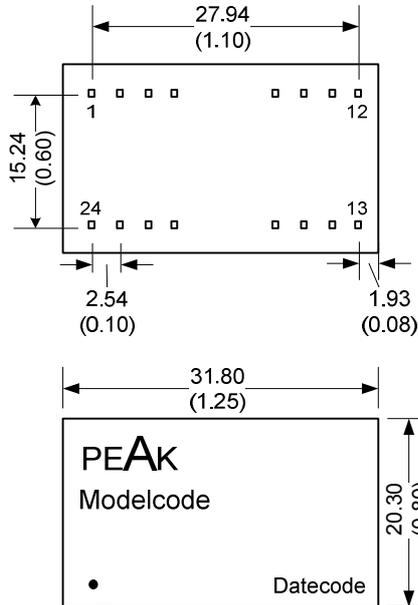
Order #	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)
<b>DUAL SEP. OUTPUT</b>					
PE14TGI-050505Z2:1LF	4.5 - 9	5	30	300	68
PE14TGI-050909Z2:1LF	4.5 - 9	9	16	166	70
PE14TGI-051212Z2:1LF	4.5 - 9	12	12	125	72
PE14TGI-051515Z2:1LF	4.5 - 9	15	10	100	73
PE14TGI-052424Z2:1LF	4.5 - 9	24	6	62	72
PE14TGI-120505Z2:1LF	9 - 18	5	30	300	74
PE14TGI-120909Z2:1LF	9 - 18	9	16	166	76
PE14TGI-121212Z2:1LF	9 - 18	12	12	125	80
PE14TGI-121515Z2:1LF	9 - 18	15	10	100	79
PE14TGI-122424Z2:1LF	9 - 18	24	6	62	81
PE14TGI-240505Z2:1LF	18 - 36	5	30	300	76
PE14TGI-240909Z2:1LF	18 - 36	9	16	166	78
PE14TGI-241212Z2:1LF	18 - 36	12	12	125	82
PE14TGI-241515Z2:1LF	18 - 36	15	10	100	80
PE14TGI-242424Z2:1LF	18 - 36	24	6	62	82
PE14TGI-480505Z2:1LF	36 - 72	5	30	300	76
PE14TGI-480909Z2:1LF	36 - 72	9	16	166	78
PE14TGI-481212Z2:1LF	36 - 72	12	12	125	80
PE14TGI-481515Z2:1LF	36 - 72	15	10	100	79
PE14TGI-482424Z2:1LF	36 - 72	24	6	62	82

If you need other specifications, please enquire.

\* for optional metal case please add “**M**” before “**LF**”  
 (e.g. PE14TGI-240505Z2:1**MLF** for metal case)

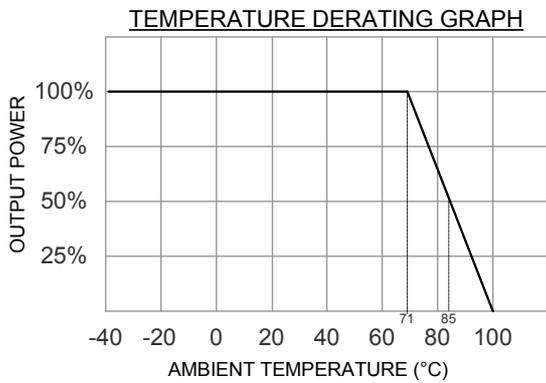
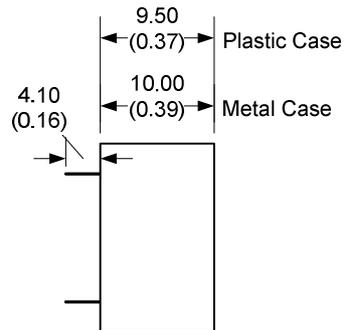
**Notes:**

# 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)  
 Specification may change without notice.

## DIP24 – METAL / PLASTIC CASE



PIN CONNECTIONS	
#	DUAL SEP.
2	- Vin
3	- Vin
9	- Vout 2
10	N.C.
11	+Vout 2
14	+Vout 1
15	N.C.
16	- Vout 1
22	+Vin
23	+Vin
others	Omitted

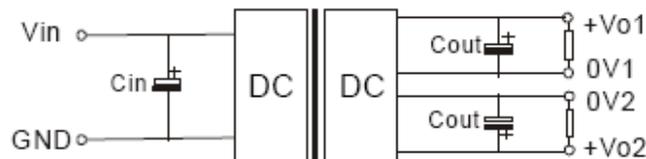
# App Notes

## Requirement on output load

In order to ensure the product operate efficiently and reliably, in addition to a max load (namely full load), a minimum load is specified for this kind of DC/DC converter. Make sure the specified range of input voltage is not exceeded, the minimum output load no less than 10% load. If the actual load is less than the specified minimum load, the output ripple may increase sharply while its efficiency and reliability will reduce greatly. If the actual output power is very small, please add an appropriate resistor as extra loading, or contact our company for other lower output power products.

## Recommended Circuit

PME01-Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load (see Figure).



If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high, or may cause start-up problem. If you want to use the products in high EMI, please choose our metal packaged products (PE14TGI-xxxxZ2:1MLF). For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (see Table).

General: Cin: 5V, 12V 100μF  
 24V, 48V 22/10μF  
 Cout: 10μF / 100mA

Output External Capacitor Table	
Vout(VDC)	Cout(μF)
5	680
9	470
12	330
15	220
24	100

## Input current

While using unstable power source, please ensure the output voltage and ripple voltage do not exceed indexes of the converter. The preceding power source must be able to provide for converter sufficient starting current Ip (see figure)

General:  $I_p \leq 1.4 \cdot I_{in-max}$

