

P10DUI-xxxxZ(H30)LF



PEAK
electronics

Mainzer Straße 151–153
D-55299 Nackenheim
Tel. +49 6135 7026-0
Fax: +49 6135 931070
www.peak-electronics.de
peak@peak-electronics.de

PM3-SERIES

Rev.11-2008

- ✓ 2 Watt
- ✓ Unregulated
- ✓ **Dual Separate Output**
- ✓ **DIP14 Case**
- ✓ **1 - 3 kV DC I/O Isolation**
- ✓ Low Ripple and Noise

The PM3 series P10DUI-xxxxZ(H30)LF is a family of cost effective 2 W dual separate output DC/DC converters. These converters are in an ultra miniature DIP14 case. Devices are encapsulated. High performance features: 1000VDC up to 3000VDC input/output isolation, high efficiency operation, output voltage accuracy of $\pm 3\%$ maximum, input range of $\pm 10\%$ tolerance and low output ripple and noise.

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

Input Specifications

| | |
|---|-------------|
| Voltage Range | $\pm 10\%$ |
| Input Filter | Capacitor |
| Input Reflected Ripple Current ¹ | 20 mA pk-pk |

Output Specifications

| | |
|------------------------------------|---|
| Voltage Accuracy | $\pm 3\%$ |
| Short Circuit Protection | Short Term |
| Line Regulation | $\pm 1.2\% / 1\% V_{in}$ Change |
| Load Regulation (20% - 100%) | $\pm 10\%$ (3.3 Vout Models: $\pm 20\%$) |
| Ripple and Noise (20Mhz bandwidth) | 75 mV pk-pk |
| Temperature Coefficient | $\pm 0.02\% / ^\circ\text{C}$ |

General Specifications

| | |
|---|-------------------------------|
| Efficiency | See Table |
| I/O Isolation Voltage (3 sec.) | 1000 VDC (3000 VDC optional)* |
| I/O Isolation Capacity | 60 pF, typ. |
| I/O Isolation Resistance | 1000 M Ohm |
| Switching Frequency | 80 kHz (Variable) |
| Humidity | 95% rel H |
| Reliability Calculated MTBF (MIL-HDBK-217F) | > 1.121 Mhrs |

Physical Specifications

| | |
|------------------|--|
| Case Material | Non Conductive Black Plastic (UL94V-0 rated) |
| Potting Material | Epoxy (UL94V-0 rated) |
| Weight | ~ 2.7g, 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

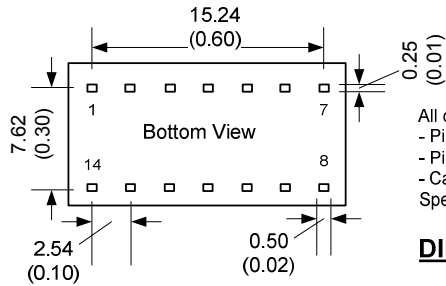
Dual Separate Output

| 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) ² |
|-------------------------|---------------------|----------------------------|------------------------------|----------------------|-------------------------------|----------------|----------------------------------|
| DUAL SEP. OUTPUT | | | | | | | |
| P10DUI-05053R3ZLF | 5 | 35 | 519 | 5, 3.3 | 200, 200 | 77 | 220 |
| P10DUI-05057R2ZLF | 5 | 35 | 519 | 5, 7.2 | 200, 139 | 77 | 220 |
| P10DUI-050509ZLF | 5 | 35 | 519 | 5, 9 | 200, 111 | 77 | 220 |
| P10DUI-050512ZLF | 5 | 35 | 500 | 5, 12 | 200, 83 | 80 | 220 |
| P10DUI-050515ZLF | 5 | 35 | 500 | 5, 15 | 200, 67 | 80 | 220 |
| P10DUI-12053R3ZLF | 12 | 25 | 216 | 5, 3.3 | 200, 200 | 77 | 220 |
| P10DUI-12057R2ZLF | 12 | 25 | 216 | 5, 7.2 | 200, 139 | 77 | 220 |
| P10DUI-120509ZLF | 12 | 25 | 216 | 5, 9 | 200, 111 | 77 | 220 |
| P10DUI-120512ZLF | 12 | 25 | 208 | 5, 12 | 200, 83 | 80 | 220 |
| P10DUI-120515ZLF | 12 | 25 | 208 | 5, 15 | 200, 67 | 80 | 220 |
| P10DUI-24053R3ZLF | 24 | 12 | 108 | 5, 3.3 | 200, 200 | 77 | 220 |
| P10DUI-24057R2ZLF | 24 | 12 | 108 | 5, 7.2 | 200, 139 | 77 | 220 |
| P10DUI-240509ZLF | 24 | 12 | 108 | 5, 9 | 200, 111 | 77 | 220 |
| P10DUI-240512ZLF | 24 | 12 | 104 | 5, 12 | 200, 83 | 80 | 220 |
| P10DUI-240515ZLF | 24 | 12 | 104 | 5, 15 | 200, 67 | 80 | 220 |
| | | | | | | | |
| P10DUI-050505ZLF | 5 | 35 | 500 | 5, 5 | 200, 200 | 80 | 220 |
| P10DUI-057R27R2ZLF | 5 | 35 | 500 | 7.2, 7.2 | 139, 139 | 80 | 220 |
| P10DUI-050909ZLF | 5 | 35 | 500 | 9, 9 | 111, 111 | 80 | 220 |
| P10DUI-051212ZLF | 5 | 35 | 487 | 12, 12 | 83, 83 | 82 | 220 |
| P10DUI-051515ZLF | 5 | 35 | 487 | 15, 15 | 67, 67 | 82 | 220 |
| P10DUI-120505ZLF | 12 | 25 | 208 | 5, 5 | 200, 200 | 80 | 220 |
| P10DUI-127R27R2ZLF | 12 | 25 | 208 | 7.2, 7.2 | 139, 139 | 80 | 220 |
| P10DUI-120909ZLF | 12 | 25 | 208 | 9, 9 | 111, 111 | 80 | 220 |
| P10DUI-121212ZLF | 12 | 25 | 203 | 12, 12 | 83, 83 | 82 | 220 |
| P10DUI-121515ZLF | 12 | 25 | 198 | 15, 15 | 67, 67 | 84 | 220 |
| P10DUI-240505ZLF | 24 | 12 | 104 | 5, 5 | 200, 200 | 80 | 220 |
| P10DUI-247R27R2ZLF | 24 | 12 | 104 | 7.2, 7.2 | 139, 139 | 80 | 220 |
| P10DUI-240909ZLF | 24 | 12 | 104 | 9, 9 | 111, 111 | 80 | 220 |
| P10DUI-241212ZLF | 24 | 12 | 101 | 12, 12 | 83, 83 | 82 | 220 |
| P10DUI-241515ZLF | 24 | 12 | 98 | 15, 15 | 67, 67 | 85 | 220 |

If you need other specifications, please enquire.

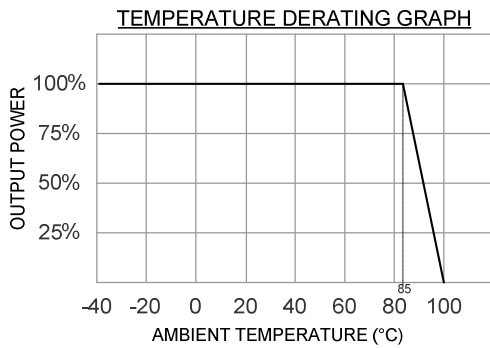
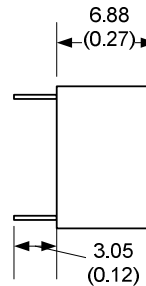
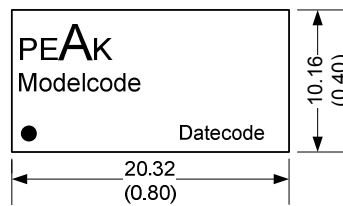
*** For optional 3kV DC I/O Isolation, please add "H30" before LF!
 → Example: P10DUI-050505ZH30LF for 3kV**

Package / Pinning / Derating



All dimensions are typical in millimeters (inches).
 - Pin diameter: 1.0 +/-0.05 (0.04 +/-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 | |
|-----------------|-----------|
| # | DUAL SEP. |
| 1 | - Vin |
| 7 | N.C. |
| 8 | - V2out |
| 9 | +V2out |
| 10 | - V1out |
| 11 | +V1out |
| 14 | +Vin |
| Others | Omitted |

Same Pinning for 3kV Models!

App Notes:

¹ = Measured Input reflected ripple current with a simulated source inductance of 12uH.

² = Tested by minimal Vin and constant resistive load.

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