

P10AU-xxxxELF



PME-SERIES

Rev.01-2009

- ✓ 2 Watt
- ✓ Unregulated
- ✓ **Single** Output
- ✓ **SIP4** Case
- ✓ **1 kV** DC I/O Isolation
- ✓ Low Ripple and Noise

The PME series P10AU-xxxxELF is a family of cost effective 2 W single output DC/DC converters. These converters are in an ultra miniature SIP4 case. Devices are encapsulated. High performance features: 1000VDC 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 | Capacitors |
| 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%) | $\pm 10\%$ (3.3V _{out} Models: $\pm 20\%$) |
| Ripple and Noise (20Mhz bandwidth) | 150 mV pk-pk |
| Temperature Coefficient | $\pm 0.02\% / ^\circ\text{C}$ |

General Specifications

| | |
|---|-------------------|
| Efficiency | See Table |
| I/O Isolation Voltage (3 sec.) | 1000 VDC |
| I/O Isolation Capacity | 60 pF, typ. |
| I/O Isolation Resistance | 1000 MOhm |
| Switching Frequency | 70 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 | ~ 1.8g, typ. |

Environment Specifications

| | |
|--------------------------|---|
| Operating Temperature | -40 to +85 °C (ambient) |
| Maximum Case Temperature | 100 °C |
| Storage Temperature | -40 to +125 °C |
| Cooling | Free Air Convection |
| RoHS Conform | Soldering 260 °C, max. (1.5mm from case 10s.) |

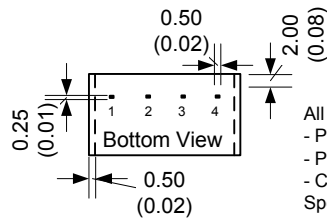
Selection Guide

Single Output

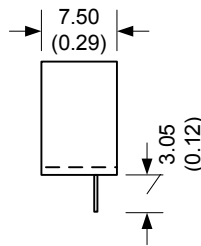
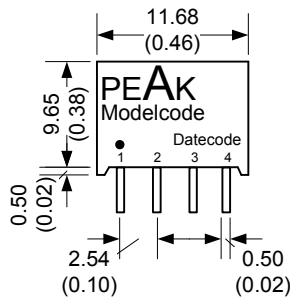
| Order # | Input Voltage (VDC) | Input Current No Load (mA) | Input Current Full Load (mA) | Output Voltage (VDC) | Output Current Full Load (mA) | Efficiency (%) | Capacitor Load (uF) ² |
|----------------------|---------------------|----------------------------|------------------------------|----------------------|-------------------------------|----------------|----------------------------------|
| SINGLE OUTPUT | | | | | | | |
| P10AU-053R3ELF | 5 | 35 | 371 | 3.3 | 400 | 71 | 470 |
| P10AU-0505ELF | 5 | 35 | 519 | 5 | 400 | 77 | 470 |
| P10AU-057R2ELF | 5 | 35 | 519 | 7.2 | 278 | 77 | 470 |
| P10AU-0509ELF | 5 | 35 | 500 | 9 | 222 | 80 | 470 |
| P10AU-0512ELF | 5 | 35 | 487 | 12 | 167 | 82 | 470 |
| P10AU-0515ELF | 5 | 35 | 487 | 15 | 133 | 82 | 470 |
| P10AU-0518ELF | 5 | 35 | 487 | 18 | 111 | 82 | 470 |
| P10AU-0524ELF | 5 | 35 | 487 | 24 | 83 | 82 | 470 |
| P10AU-123R3ELF | 12 | 20 | 152 | 3.3 | 400 | 72 | 470 |
| P10AU-1205ELF | 12 | 20 | 213 | 5 | 400 | 78 | 470 |
| P10AU-127R2ELF | 12 | 20 | 208 | 7.2 | 278 | 80 | 470 |
| P10AU-1209ELF | 12 | 20 | 203 | 9 | 222 | 82 | 470 |
| P10AU-1212ELF | 12 | 20 | 198 | 12 | 167 | 84 | 470 |
| P10AU-1215ELF | 12 | 20 | 198 | 15 | 133 | 84 | 470 |
| P10AU-1218ELF | 12 | 20 | 198 | 18 | 111 | 84 | 470 |
| P10AU-1224ELF | 12 | 25 | 203 | 24 | 83 | 82 | 470 |
| P10AU-153R3ELF | 15 | 18 | 120 | 3.3 | 400 | 73 | 470 |
| P10AU-1505ELF | 15 | 18 | 170 | 5 | 400 | 78 | 470 |
| P10AU-157R2ELF | 15 | 18 | 166 | 7.2 | 278 | 80 | 470 |
| P10AU-1509ELF | 15 | 18 | 162 | 9 | 222 | 82 | 470 |
| P10AU-1512ELF | 15 | 18 | 158 | 12 | 167 | 84 | 470 |
| P10AU-1515ELF | 15 | 18 | 158 | 15 | 133 | 84 | 470 |
| P10AU-1518ELF | 15 | 18 | 158 | 18 | 111 | 84 | 470 |
| P10AU-1524ELF | 15 | 18 | 162 | 24 | 83 | 82 | 470 |
| P10AU-243R3ELF | 24 | 10 | 74 | 3.3 | 400 | 74 | 470 |
| P10AU-2405ELF | 24 | 10 | 104 | 5 | 400 | 80 | 470 |
| P10AU-247R2ELF | 24 | 10 | 104 | 7.2 | 278 | 80 | 470 |
| P10AU-2409ELF | 24 | 10 | 99 | 9 | 222 | 84 | 470 |
| P10AU-2412ELF | 24 | 10 | 99 | 12 | 167 | 84 | 470 |
| P10AU-2415ELF | 24 | 10 | 99 | 15 | 133 | 84 | 470 |
| P10AU-2418ELF | 24 | 10 | 99 | 18 | 111 | 84 | 470 |
| P10AU-2424ELF | 24 | 10 | 99 | 24 | 83 | 84 | 470 |
| P10AU-483R3ELF | 48 | 7 | 38 | 3.3 | 400 | 72 | 470 |
| P10AU-4805ELF | 48 | 7 | 53 | 5 | 400 | 78 | 470 |
| P10AU-487R2ELF | 48 | 7 | 52 | 7.2 | 278 | 80 | 470 |
| P10AU-4809ELF | 48 | 7 | 51 | 9 | 222 | 82 | 470 |
| P10AU-4812ELF | 48 | 7 | 52 | 12 | 167 | 80 | 470 |
| P10AU-4815ELF | 48 | 7 | 51 | 15 | 133 | 82 | 470 |
| P10AU-4818ELF | 48 | 7 | 51 | 18 | 111 | 82 | 470 |
| P10AU-4824ELF | 48 | 7 | 51 | 24 | 83 | 82 | 470 |

If you need other specifications, please enquire.

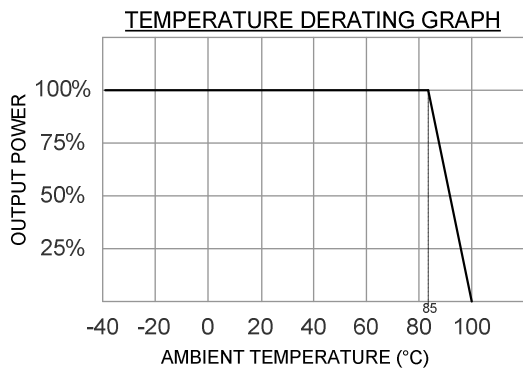
Package / Pinning / Derating



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.



SIP4 – PLASTIC CASE



| PIN CONNECTIONS | |
|-----------------|--------|
| # | SINGLE |
| 1 | - Vin |
| 2 | +Vin |
| 3 | - Vout |
| 4 | +Vout |

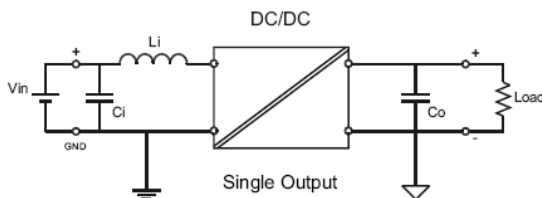
App Notes:

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.

- For reduce converter's ripple & noise, it is recommended to add a 4.7μF~220μF capacitor in output end. For EMI performance improvement, it is recommended to add a 12μH inductor and a 10μF~100μF capacitor in input end.



| EMC SPECIFICATIONS | | |
|--------------------|---------------------------------|--------------------|
| Radiated Emissions | EN 55022 FCC 47CFR Part 15/B | CLASS B CLASS B |
| ESD | IEC 61000-4-2 | Perf. Criteria B |
| RS | IEC 61000-4-3 | Perf. Criteria A |