



Single, Dual, Triple Output 40W DC-DC Converters

- ◆ Industry Standard 2" x 2" Footprint
- ◆ Six Sided Shielding
- ◆ Agency Approved
- ◆ 12, 24V, and 48V Inputs

Key Market Segments & Applications

Telecom, Datacom, Point of Load

Features & Benefits

| Feature | Benefit |
|-----------------------------|---------------------------|
| ◆ UL, CSA, EN, CE approvals | ◆ Easier system approvals |
| ◆ Wide range input | ◆ Less parts to inventory |
| ◆ Six sided shielding | ◆ Reduced radiated noise |

Specifications

| ITEMS | |
|--|--|
| Max Output Power | 40W |
| Voltage Accuracy (Full Load, Nom. Vin) | Single, / Dual $\pm 1\%$, Triple Main $\pm 1\%$, Triple Auxiliary $\pm 5\%$ |
| Voltage Adjustment (Single Output Only) (1) | $\pm 10\%$ |
| Minimum Load, each output (2) | Single Output 0%, Dual and Triple 10% of full load |
| Line Regulation | Single / Dual $\pm 0.5\%$, Triple (main) $\pm 1\%$, Triple (auxiliary) $\pm 5\%$ |
| Load Regulation (10% to 100%) (3) | Single $\pm 0.5\%$, Dual $\pm 1\%$, Triple (main) $\pm 2\%$, Triple (auxiliary) $\pm 5\%$ |
| Cross Regulation (25% to 100%) (4) | Triple (main) $\pm 1\%$, Dual/Triple (auxiliary) $\pm 5\%$ |
| Start up time | 25ms typ. |
| Remote on/off (referenced to negative input) | Positive Logic: ON: Open or 3.0-12V, OFF Short or $< 1.2V$ |
| Temperature Coefficient | $< \pm 0.02\%/^{\circ}C$ |
| Operating Temperature | See derating curves |
| Maximum Case Temperature | 100°C |
| Storage Temperature | -55 to 105°C |
| Thermal Shock | MIL-STD-810D |
| Relative Humidity (non condensing) | 5 to 95% |
| Transient Response (25% step load change) | 300us recovery |
| Overvoltage Protection (Zener clamp) | 3.3V: 3.9V, 5V: 6.2V, 12V: 15V, 15V: 18V, 24V: 30V |
| Overcurrent and Short Circuit Protection | Typically at 150%, hiccup with self recovery |
| Input Surge Voltage (Maximum for 100ms) | 12V input: 36V, 24V input: 50V, 48V input: 100V |
| Reflected input ripple (peak to peak) (6) | 40mA |
| Isolation Voltage | 1600VDC minimum |
| Isolation Resistance | 10 ⁹ Ohms minimum |
| Isolation Capacitance (max) | 1000pF |
| Switching Frequency (Fixed) | 300kHz (typ.) |
| MTBF (BELLCORE TR-NWT-000332) | 1,398,000 hours |
| Vibration | 10 - 55Hz, 2G, 30 minutes each X, Y, Z axis |
| Conducted and Radiated Emissions | EN55022 Level A |
| Immunity | EN61000-4-2, -3, -4, -5, -6 Pref Criteria 2 |
| Safety Agency Approval | IEC606950, UL1950, EN60950, CE Mark (48V input only) |
| Size (L x W x H) | 2 x 2 x 0.4" |
| Weight | 2.11 oz (60g) |
| Warranty | Two Year |

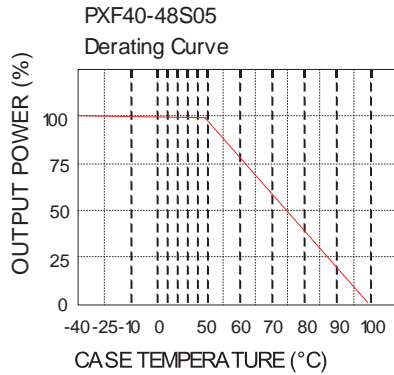
(1) Maximum output deviation is 10% inclusive of remote sense and trim. If remote sense is not being used, the +Sense and - Sense should be connected to their corresponding outputs; + output, -output.
 (2) Dual and Triple output models require a minimum load of 10% on the output to maintain specified regulation. No load operation will not damage the device.
 (3) Load regulation for triple output: Main output:10-100%, with 10-100% balanced load on auxiliaries. Auxiliary outputs: 10% to 100% balanced on all outputs.
 (4) Cross regulation for dual output: asymmetrical load 25% / 100% full load. Cross regulation for triple output: Main output 100% load, auxiliary 100%, other auxiliary 25% to 100%. Auxiliary outputs: main output 100% load, auxiliary 100%, other auxiliary 25% to 100% or main output 25%, auxiliary 25%, other auxiliary 25% to 100%.
 (5) An external filter capacitor is required for normal operation. The capacitor should be capable of handling a 1A ripple current for 48V and 24V models.
 (6) Simulated Source impedance of 12uH placed in series with + input.

Model Selector

| Output Voltage | Output Current | Output Power | Input Voltage | Model | Ripple & Noise (Peak to Peak mV) | Nominal Input Curr. | Efficiency | Max. Load Capac. (uF) |
|----------------|----------------|--------------|---------------|---------------|----------------------------------|---------------------|------------|-----------------------|
| 1.5 | 8 | 12 | 9 - 18VDC | PXF40-12S1P5 | 50 | 1.351 | 78 | 45000 |
| 1.5 | 8 | 12 | 18 - 36VDC | PXF40-24S1P5 | 50 | 0.649 | 81 | 45000 |
| 1.5 | 8 | 12 | 36 - 75VDC | PXF40-48S1P5 | 50 | 0.321 | 82 | 45000 |
| 1.8 | 8 | 14.4 | 9 - 18VDC | PXF40-12S1P8 | 50 | 1.579 | 80 | 37700 |
| 1.8 | 8 | 14.4 | 18 - 36VDC | PXF40-24S1P8 | 50 | 0.759 | 83 | 37700 |
| 1.8 | 8 | 14.4 | 36 - 75VDC | PXF40-48S1P8 | 50 | 0.375 | 84 | 37700 |
| 2.5 | 8 | 20 | 9 - 18VDC | PXF40-12S2P5 | 50 | 2.137 | 82 | 27000 |
| 2.5 | 8 | 20 | 18 - 36VDC | PXF40-24S2P5 | 50 | 1.029 | 85 | 27000 |
| 2.5 | 8 | 20 | 36 - 75VDC | PXF40-48S2P5 | 50 | 0.508 | 86 | 27000 |
| 3.3 | 8 | 26.4 | 9 - 18VDC | PXF40-12S3P3 | 50 | 2.750 | 84 | 21000 |
| 3.3 | 8 | 26.4 | 18 - 36VDC | PXF40-24S3P3 | 50 | 1.325 | 87 | 21000 |
| 3.3 | 8 | 26.4 | 36 - 75VDC | PXF40-48S3P3 | 50 | 0.655 | 88 | 21000 |
| 5 | 8 | 40 | 9 - 18VDC | PXF40-12S05 | 50 | 4.065 | 86 | 13600 |
| 5 | 8 | 40 | 18 - 36VDC | PXF40-24S05 | 50 | 1.961 | 89 | 13600 |
| 5 | 8 | 40 | 36 - 75VDC | PXF40-48S05 | 50 | 0.969 | 90 | 13600 |
| 12 | 3.333 | 40 | 9 - 18VDC | PXF40-12S12 | 75 | 4.065 | 86 | 2360 |
| 12 | 3.333 | 40 | 18 - 36VDC | PXF40-24S12 | 75 | 2.048 | 88 | 2360 |
| 12 | 3.333 | 40 | 36 - 75VDC | PXF40-48S12 | 75 | 1.000 | 89 | 2360 |
| 15 | 2.666 | 40 | 9 - 18VDC | PXF40-12S15 | 75 | 4.015 | 87 | 1510 |
| 15 | 2.666 | 40 | 18 - 36VDC | PXF40-24S15 | 75 | 1.985 | 89 | 1510 |
| 15 | 2.666 | 40 | 36 - 75VDC | PXF40-48S15 | 75 | 0.992 | 89 | 1510 |
| +3.3, +5 | 4, 4 | 33.2 | 9 - 18VDC | PXF40-12D3305 | 100 | 3.459 | 84 | 11000/6800 |
| +3.3, +5 | 4, 4 | 33.2 | 18 - 36VDC | PXF40-24D3305 | 100 | 1.687 | 86 | 11000/6800 |
| +3.3, +5 | 4, 4 | 33.2 | 36 - 75VDC | PXF40-48D3305 | 100 | 0.823 | 88 | 11000/6800 |
| ±12 | ±1.8 | 43.2 | 9 - 18VDC | PXF40-12D12 | 120 | 4.444 | 85 | ± 1200 |
| ±12 | ±1.8 | 43.2 | 18 - 36VDC | PXF40-24D12 | 120 | 2.169 | 87 | ± 1200 |
| ±12 | ±1.8 | 43.2 | 36 - 75VDC | PXF40-48D12 | 120 | 1.084 | 87 | ± 1200 |
| ±15 | ±1.4 | 42 | 9 - 18VDC | PXF40-12D15 | 150 | 4.321 | 85 | ± 750 |
| ±15 | ±1.4 | 42 | 18 - 36VDC | PXF40-24D15 | 150 | 2.108 | 87 | ± 750 |
| ±15 | ±1.4 | 42 | 36 - 75VDC | PXF40-48D15 | 150 | 1.054 | 87 | ± 750 |
| ±24 | ±1.0 | 48 | 18 - 36VDC | PXF40-24D24* | 150 | 2.480 | 87 | ±300 |
| 3.3, ±12 | 6, ±0.4 | 29.4 | 9 - 18VDC | PXF40-12T3312 | 50/75 | 3.101 | 83 | 13000, ±330 |
| 3.3, ±12 | 6, ±0.4 | 29.4 | 18 - 36VDC | PXF40-24T3312 | 50/75 | 1.512 | 85 | 13000, ±330 |
| 3.3, ±12 | 6, ±0.4 | 29.4 | 36 - 75VDC | PXF40-48T3312 | 50/75 | 0.747 | 86 | 13000, ±330 |
| 3.3, ±15 | 6, ±0.3 | 28.8 | 9 - 18VDC | PXF40-12T3315 | 50/75 | 3.038 | 83 | 13000, ±110 |
| 3.3, ±15 | 6, ±0.3 | 28.8 | 18 - 36VDC | PXF40-24T3315 | 50/75 | 1.481 | 85 | 13000, ±110 |
| 3.3, ±15 | 6, ±0.3 | 28.8 | 36 - 75VDC | PXF40-48T3315 | 50/75 | 0.732 | 86 | 13000, ±110 |
| 5, ±12 | 6, ±0.4 | 39.6 | 9 - 18VDC | PXF40-12T0512 | 50/75 | 4.074 | 85 | 6800, ±330 |
| 5, ±12 | 6, ±0.4 | 39.6 | 18 - 36VDC | PXF40-24T0512 | 50/75 | 1.989 | 87 | 6800, ±330 |
| 5, ±12 | 6, ±0.4 | 39.6 | 36 - 75VDC | PXF40-48T0512 | 50/75 | 0.982 | 88 | 6800, ±330 |
| 5, ±15 | 6, ±0.3 | 39 | 9 - 18VDC | PXF40-12T0515 | 50/75 | 4.012 | 85 | 6800, ±110 |
| 5, ±15 | 6, ±0.3 | 39 | 18 - 36VDC | PXF40-24T0515 | 50/75 | 1.958 | 87 | 6800, ±110 |
| 5, ±15 | 6, ±0.3 | 39 | 36 - 75VDC | PXF40-48T0515 | 50/75 | 0.967 | 88 | 6800, ±110 |

* Contact factory for safety agency status.

Derating Curves



Pinout

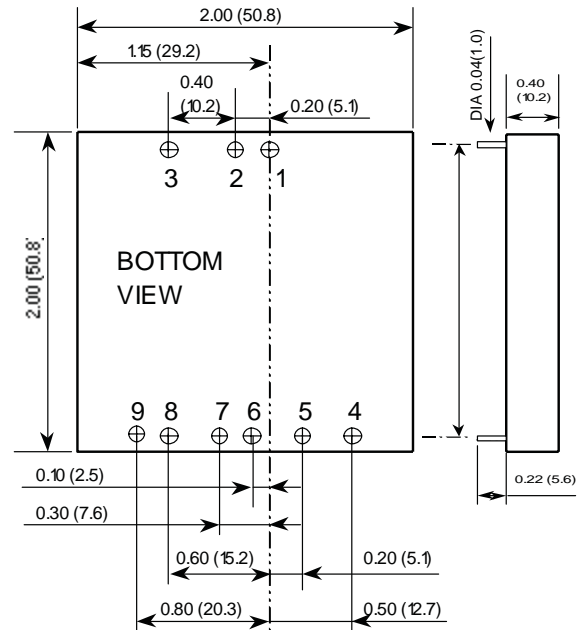
| PIN# | Function | | |
|------|------------------|---------------|----------------|
| | Single Output | Dual Output | Triple Output |
| 1 | + Input | + Input | + Input |
| 2 | - Input | - Input | - Input |
| 3 | Remote on/off | Remote on/off | Remote on/off |
| 4 | No Pin | No Pin | + Aux |
| 5 | - Sense (Note 1) | + VO | Common |
| 6 | + Sense (Note 1) | Common | -Aux |
| 7 | + Output | Common | + Output |
| 8 | - Output | - VO | - Output (Com) |
| 9 | Trim | Trim | N/C |

Heat Sink (0.22" high)

7G0026A (includes thermal adhesive pad)

For Additional Information, please visit
us.tdk-lambda.com/lp/products/px-series.htm

Outline Drawing



- All dimensions in Inches (mm)
- Pin pitch tolerance $-0.014(0.35)$

Other Lambda Industrial Products

CC-E 1.5-25W, 5 to 48VDC input
 PAQ }
 PAH } 50 - 700W quarter, half & full bricks
 PAF }