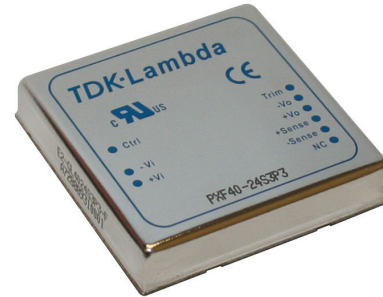


## 40W & 60W Single, Dual, Triple Output DC-DC Converters

### Features

- ◆ Industry Standard 2" x 2" Footprint
- ◆ Six Sided Shielding
- ◆ Agency Approved
- ◆ 12, 24V, and 48V Inputs (including 4:1 ranges)
- ◆ UL, CSA, EN, CE approvals
- ◆ Wide range input



### Key Market Segments & Applications



| Specifications                               |  |
|--|--|
| Model  |  |
| Maximum Output Power                         | 40W or 60W   |
| Voltage Accuracy (Full Load, Nom. Vin)       | Single, Dual and Triple Main $\pm 1\%$ , Triple Auxiliaries $\pm 5\%$                        |
| Voltage Adjustment (1)                       | $\pm 10\%$ (Single and Dual Output Only)   |
| Minimum Load, each output (2)                | Single Output = 0%, Dual and Triple = 10% of full load rating                                |
| 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                                | PXF40: 25ms typ., PXF40xxW, PXF60: 20ms max.   |
| 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                     | PXF40: 100 $^{\circ}C$ , PXF40-xxW 105 $^{\circ}C$ , PXF60 110 $^{\circ}C$                   |
| Storage Temperature                          | PXF40: -55 to 105 $^{\circ}C$ , PXF40xxW, PXF60 125 $^{\circ}C$                              |
| Thermal Shock                                | MIL-STD-810F   |
| Relative Humidity (non condensing)           | 5 to 95%   |
| Transient Response (25% step load change)    | 250us recovery   |
| Overvoltage Protection (Zener clamp)         | Typical 3.3V: 3.9V, 5V: 6.2V, 12V: 15V, 15V: 18V   |
| 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) (5)    | PXF40: 40mA, PXF40xxW, PXF60: 20mA   |
| Isolation Voltage                            | Input - Output, Input to Case: 1600VDC minimum   |
| Isolation Resistance                         | 10 <sup>9</sup> Ohms minimum   |
| Isolation Capacitance (max)                  | PXF40, PXF60: 1000pF, PXF40xxW: 2500pF   |
| Switching Frequency (Fixed)                  | 300kHz (typ.)  |
| MTBF (BELLCORE TR-NWT-000332)                | PXF40: 1,398,000; PXF40xxW: 1,105,000, PXF60: 1.093,000 hours                                |
| Vibration                                    | 10 - 55Hz, 10G, 30 minutes each X, Y, Z axis   |
| Conducted and Radiated Emissions             | See Installation Diagrams  |
| Immunity                                     | EN61000-4-2, -3, -4, -5, -6  |
| Safety Agency Approval                       | IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark  |
| Size (L x W x H)                             | 2 x 2 x 0.4"   |
| Weight                                       | 2.11 oz (60g)  |
| Warranty                                     | Three Year   |

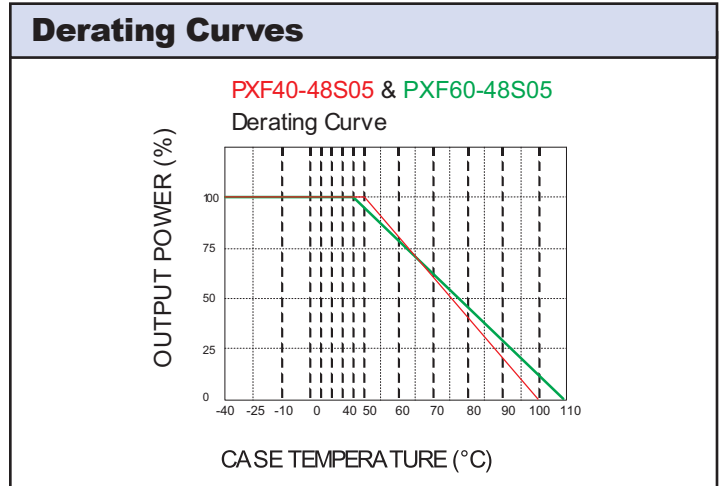
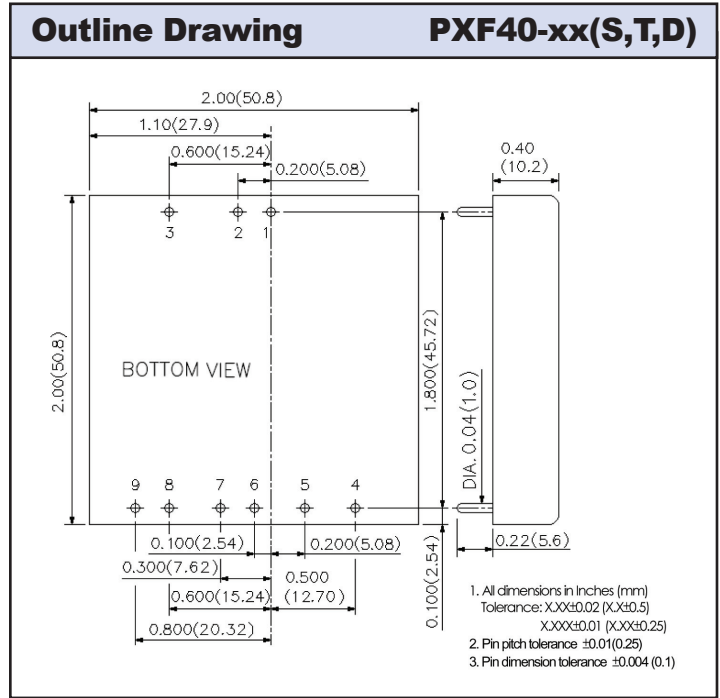
Refer to application notes on website for external circuitry and PCB layout.

- (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) Simulated Source impedance of 12uH placed in series with + input.

| Model Selector        |                |                 |               |                   |            |                  |
|-----------------------|----------------|-----------------|---------------|-------------------|------------|------------------|
| Output Volt(V)        | Output Curr(A) | Input Volt(VDC) | Model         | Ripple/Noise (mV) | Eff.(%)    | Max Load Cap(µF) |
| <b>Single Outputs</b> |                |                 |               |                   |            |                  |
| 3.3                   | 8              | 9 - 18          | PXF40-12S3P3  | 50                | 84         | 21000            |
| 3.3                   | 10             | 9 - 36          | PXF40-24WS3P3 | 50                | 86         | 25750            |
| 3.3                   | 8              | 18 - 36         | PXF40-24S3P3  | 50                | 87         | 21000            |
| 3.3                   | 10             | 18 - 75         | PXF40-48WS3P3 | 50                | 86         | 25750            |
| 3.3                   | 14             | 18 - 36         | PXF60-24S3P3  | 75                | 89         | 36000            |
| 3.3                   | 8              | 36 - 75         | PXF40-48S3P3  | 50                | 88         | 21000            |
| 3.3                   | 14             | 36 - 75         | PXF60-48S3P3  | 75                | 89         | 36000            |
| 5                     | 8              | 9 - 18          | PXF40-12S05   | 50                | 86         | 13600            |
| 5                     | 8              | 9 - 36          | PXF40-24WS05  | 50                | 87         | 13600            |
| 5                     | 8              | 18 - 36         | PXF40-24S05   | 50                | 89         | 13600            |
| 5                     | 8              | 18 - 75         | PXF40-48WS05  | 50                | 88         | 13600            |
| 5                     | 8              | 36 - 75         | PXF40-48S05   | 50                | 90         | 13600            |
| 5                     | 12             | 18 - 36         | PXF60-24S05   | 75                | 90         | 20400            |
| 5                     | 12             | 36 - 75         | PXF60-48S05   | 75                | 90         | 20400            |
| 12                    | 3.333          | 9 - 18          | PXF40-12S12   | 75                | 86         | 2360             |
| 12                    | 3.333          | 9 - 36          | PXF40-24WS12  | 75                | 87         | 2360             |
| 12                    | 3.333          | 18 - 36         | PXF40-24S12   | 75                | 88         | 2360             |
| 12                    | 3.333          | 18 - 75         | PXF40-48WS12  | 75                | 87         | 2360             |
| 12                    | 3.333          | 36 - 75         | PXF40-48S12   | 75                | 89         | 2360             |
| 12                    | 5              | 18 - 36         | PXF60-24S12   | 100               | 90         | 3550             |
| 12                    | 5              | 36 - 75         | PXF60-48S12   | 100               | 90         | 3550             |
| 15                    | 2.666          | 9 - 18          | PXF40-12S15   | 75                | 87         | 1510             |
| 15                    | 2.666          | 9 - 36          | PXF40-24WS15  | 75                | 87         | 1510             |
| 15                    | 2.666          | 18 - 36         | PXF40-24S15   | 75                | 89         | 1510             |
| 15                    | 2.666          | 18 - 75         | PXF40-48WS15  | 75                | 87         | 1510             |
| 15                    | 2.666          | 36 - 75         | PXF40-48S15   | 75                | 89         | 1510             |
| 15                    | 4              | 18 - 36         | PXF60-24S15   | 100               | 90         | 2300             |
| 15                    | 4              | 36 - 75         | PXF60-48S15   | 100               | 90         | 2300             |
| <b>Dual Outputs</b>   |                |                 |               |                   |            |                  |
| ±12                   | ±1.667         | 9 - 36          | PXF40-24WD12  | 120               | 86         | ±1200            |
| ±12                   | ±1.8           | 9 - 18          | PXF40-12D12   | 120               | 85         | ±1200            |
| ±12                   | ±1.8           | 18 - 36         | PXF40-24D12   | 120               | 87         | ±1200            |
| ±12                   | ±1.667         | 18 - 75         | PXF40-48WD12  | 120               | 86         | ±1200            |
| ±12                   | ±1.8           | 36 - 75         | PXF40-48D12   | 120               | 87         | ±1200            |
| ±15                   | ±1.333         | 9 - 36          | PXF40-24WD15  | 150               | 86         | ±750             |
| ±15                   | ±1.4           | 9 - 18          | PXF40-12D15   | 150               | 85         | ±750             |
| ±15                   | ±1.4           | 18 - 36         | PXF40-24D15   | 150               | 87         | ±750             |
| ±15                   | ±1.333         | 18 - 75         | PXF40-48WD15  | 150               | 86         | ±750             |
| ±15                   | ±1.4           | 36 - 75         | PXF40-48D15   | 150               | 87         | ±750             |
| <b>Triple Outputs</b> |                |                 |               |                   |            |                  |
| 3.3V,±12V6.0,±0.4     | 9 - 18         | PXF40-12T3312   | 50 / 75       | 83                | 13000,±330 |                  |
| 3.3V,±12V6.0,±0.4     | 18 - 36        | PXF40-24T3312   | 50 / 75       | 85                | 13000,±330 |                  |
| 3.3V,±12V6.0,±0.4     | 36 - 75        | PXF40-48T3312   | 50 / 75       | 86                | 13000,±330 |                  |
| 5V,±12V 6.0,±0.4      | 9 - 18         | PXF40-12T0512   | 50 / 75       | 85                | 6800, ±330 |                  |
| 5V,±12V 6.0,±0.4      | 18 - 36        | PXF40-24T0512   | 50 / 75       | 87                | 6800, ±330 |                  |
| 5V,±12V 6.0,±0.4      | 36 - 75        | PXF40-48T0512   | 50 / 75       | 88                | 6800, ±330 |                  |
| 5V, ±15V6.0, ±0.3     | 9 - 18         | PXF40-12T0515   | 50/75         | 86                | 6800, ±110 |                  |
| 5V, ±15V6.0, ±0.3     | 18 - 36        | PXF40-24T0515   | 50/75         | 87                | 6800, ±110 |                  |
| 5V, ±15V6.0, ±0.3     | 36 - 75        | PXF40-48T0515   | 50/75         | 88                | 6800, ±110 |                  |

| Heat Sink (0.22" high) |                                 |
|------------------------|---------------------------------|
| HAPXF                  | (includes thermal adhesive pad) |
| HAPXFCLIP              | (two clips required when used)  |

| Other Industrial Products |                                       |
|---------------------------|---------------------------------------|
| CC-E                      | 1.5 - 30W, 5 to 48VDC input           |
| PAQ, PAH, PAF             | 50 - 700W quarter, half & full bricks |



| Pinout PXF40-xx(S,T,D) |                  |               |                |
|------------------------|------------------|---------------|----------------|
| PIN#                   | Function         | Dual Output   | Triple Output  |
| 1                      | + Input          | + Input       | + Input        |
| 2                      | - Input          | - Input       | - Input        |
| 3                      | Remote on/off    | Remote on/off | Remote on/off  |
| 4                      | No Connection    | 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            |

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