



## Single and Dual Output 10 to 20W DC-DC Converters

- ◆ Industry Standard 2" x 1" Footprint
- ◆ Six Sided Shielding
- ◆ Agency Approved
- ◆ 12V, 24V and 48V Inputs

**RoHS**

### 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                                     | PXD10   | PXD15                                  | PXD20                   |
|---|---|--|-------------------------|
| Max Output Power                          | 10W   | 15W                                    | 20W                     |
| Voltage Accuracy                          | ±2%   | ±1%                                    | ±1%                     |
| Voltage Adjustment (Single Output Only)   | None  | None                                   | ±10%                    |
| Minimum Load, each output (1)             | 10%   | 10%                                    | Single 0%; Dual 10%     |
| Line Regulation                           | ±1%   | ±1%                                    | ±0.2%                   |
| Load Regulation (10% to 100%)             | Single Output: ±1%<br>Dual Output: ±2%  | Single Output: ±1%<br>Dual Output: ±2% | ±0.5%                   |
| Cross Regulation (25% to 100%)            |   | ±5%                                    |                         |
| Ripple and Noise                          | Single 50mV, Dual 75mV  |  | Single 75mV, Dual 100mV |
| Start up time                             | 20ms  |  | 10ms                    |
| Remote on/off (3)                         | Positive Logic: ON: Open or 3.5-12V, OFF Short or <1.2V<br>Negative Logic: ON: Short or <1.2V, OFF: Open or 3.5-12V |  |                         |
| Temperature Coefficient                   | <±0.02%/°C  |  |                         |
| Operating Temperature                     | See derating curves   |  |                         |
| Maximum Case Temperature                  | 100°C   |  |                         |
| Storage Temperature                       | -55 to 105°C  |  |                         |
| Thermal Shock                             | MIL-STD-810D  |  |                         |
| Relative Humidity                         | 5 to 95% (non condensing)   |  |                         |
| Transient Response (25% step load chg.)   | 500us recovery  | 500us recovery                         | 300us recovery          |
| Overvoltage Protection (Zener clamp)      | 1.5-3.3V: 3.9V, 5V: 6.2V, 12V: 15V, 15V: 18V  |  |                         |
| Overcurrent & Short Circuit Protection    | Typically at 150%, hiccup with self recovery  |  |                         |
| Input Surge Voltage (Max. for 100ms)      | 12V input: 36V, 24V input: 50V, 48V input: 100V   |  |                         |
| Reflected input ripple (peak to peak) (2) | 30mA  | 20mA                                   | 20mA                    |
| Isolation Voltage                         | 1600VDC minimum   |  |                         |
| Isolation Resistance                      | 10 <sup>9</sup> Ohms minimum  |  |                         |
| Isolation Capacitance (max)               | 300pF   |  | 1000pF                  |
| Typical Switching Frequency (Fixed)       | 300kHz  | Single: 500kHz<br>Dual: 300kHz         | 500kHz                  |
| MTBF (BELLCORE TR-NWT-000332)             | 1,976,000 hours   | 2,041,000 hours                        | 1,791,000 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                    | IEC60950-1, UL60950-1, EN60950-1, CE Mark (48V input only)  |  |                         |
| Size (L x W x H)                          | 2x1x0.4"  |  |                         |
| Weight                                    | 0.95 oz (27g)   |  |                         |
| Warranty                                  | Two Year  |  |                         |

Notes:

- (1) To meet regulation & noise specifications. Operation at zero load will not damage the device
- (2) 12uH source impedance in series with + input
- (3) Positive logic standard on 20W (see options table). Input current 2.5mA

\* See website for detailed specifications

## Model Selector

| Output Volt (V)     | Output Curr (A) | Output Power (W) | Input Volt (V) | Model        | Eff.(%) |
|---------------------|-----------------|------------------|----------------|--------------|---------|
| 3.3                 | 2.0             | 6.6              | 9 - 18VDC      | PXD10-12S3P3 | 80      |
| 3.3                 | 2.0             | 6.6              | 18 - 36VDC     | PXD10-24S3P3 | 80      |
| 3.3                 | 2.0             | 6.6              | 36 - 75VDC     | PXD10-48S3P3 | 79      |
| 3.3                 | 5.0             | 16.5             | 9 - 18VDC      | PXD20-12S3P3 | 84      |
| 3.3                 | 5.0             | 16.5             | 18 - 36VDC     | PXD20-24S3P3 | 86      |
| 3.3                 | 5.0             | 16.5             | 36 - 75VDC     | PXD20-48S3P3 | 87      |
| 5                   | 2.0             | 10               | 9 - 36VDC      | PXD10-24WS05 | 80      |
| 5                   | 2.0             | 10               | 18 - 75VDC     | PXD10-48WS05 | 80      |
| 5                   | 4.0             | 20               | 9 - 18VDC      | PXD20-12S05  | 87      |
| 5                   | 4.0             | 20               | 18 - 36VDC     | PXD20-24S05  | 89      |
| 5                   | 4.0             | 20               | 36 - 75VDC     | PXD20-48S05  | 89      |
| 12                  | 0.83            | 10               | 9 - 36VDC      | PXD10-24WS12 | 82      |
| 12                  | 0.83            | 10               | 18 - 75VDC     | PXD10-48WS12 | 84      |
| 12                  | 1.67            | 20               | 9 - 18VDC      | PXD20-12S12  | 85      |
| 12                  | 1.67            | 20               | 18 - 36VDC     | PXD20-24S12  | 87      |
| 12                  | 1.67            | 20               | 36 - 75VDC     | PXD20-48S12  | 88      |
| 15                  | 0.67            | 10               | 9 - 36VDC      | PXD10-24WS15 | 80      |
| 15                  | 0.67            | 10               | 18 - 75VDC     | PXD10-48WS15 | 84      |
| 15                  | 1.33            | 20               | 9 - 18VDC      | PXD20-12S15  | 85      |
| 15                  | 1.33            | 20               | 18 - 36VDC     | PXD20-24S15  | 87      |
| 15                  | 1.33            | 20               | 36 - 75VDC     | PXD20-48S15  | 87      |
| <b>Dual Outputs</b> |                 |                  |                |              |         |
| ±5                  | ±1.5            | 15               | 9 - 18VDC      | PXD15-12D05  | 83      |
| ±5                  | ±1.5            | 15               | 18 - 36VDC     | PXD15-24D05  | 84      |
| ±5                  | ±1.5            | 15               | 36 - 75VDC     | PXD15-48D05  | 85      |
| ±12                 | ±0.416          | 10               | 9 - 36VDC      | PXD10-24WD12 | 80      |
| ±12                 | ±0.416          | 10               | 18 - 75VDC     | PXD10-48WD12 | 78      |
| ±12                 | ±0.833          | 20               | 9 - 18VDC      | PXD20-12D12  | 86      |
| ±12                 | ±0.833          | 20               | 18 - 36VDC     | PXD20-24D12  | 87      |
| ±12                 | ±0.833          | 20               | 36 - 75VDC     | PXD20-48D12  | 88      |
| ±15                 | ±0.333          | 10               | 9 - 36VDC      | PXD10-24WD15 | 80      |
| ±15                 | ±0.333          | 10               | 18 - 75VDC     | PXD10-48WD15 | 81      |
| ±15                 | ±0.667          | 20               | 9 - 18VDC      | PXD20-12D15  | 86      |
| ±15                 | ±0.667          | 20               | 18 - 36VDC     | PXD20-24D15  | 87      |
| ±15                 | ±0.667          | 20               | 36 - 75VDC     | PXD20-48D15  | 87      |

## Pinout

| PIN# | PXD10/PXD15    |      | PXD20         |      |
|------|----------------|------|---------------|------|
|      | Single         | Dual | Single        | Dual |
| 1    |                |      | +Vin          |      |
| 2    |                |      | -Vin          |      |
| 3    |                |      | +Vout         |      |
| 4    | No Pin         | Com  | Trim          | Com  |
| 5    |                |      | -Vout         |      |
| 6    | Remote On/Off* |      | Remote On/Off |      |

\* optional, see table below. If not requested, Pin is not fitted.

## Remote On/Off Option

| Suffix | Function                                    |
|--------|---|
| -P*    | Positive Logic (* Included in PXD20 models) |
| -N     | Negative Logic                              |

Example: PXD1548S12-N

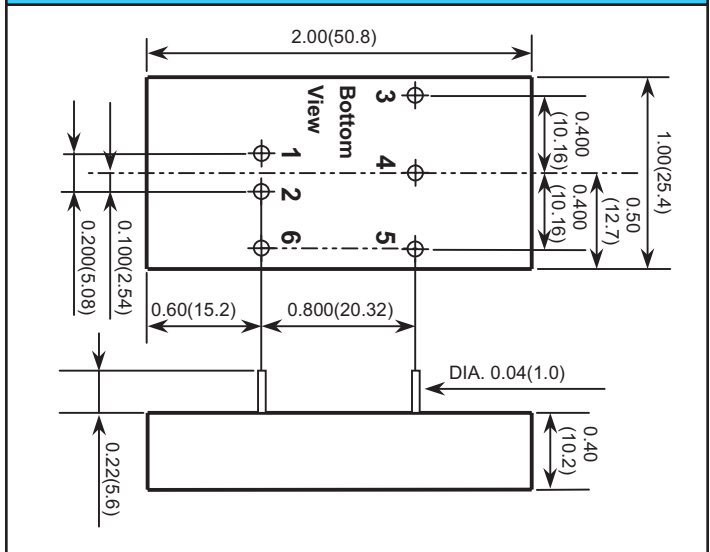
## Heat Sink (0.22" high)

|         |                                 |
|---------|---------------------------------|
| 7G0020A | (includes thermal adhesive pad) |
|---------|---------------------------------|

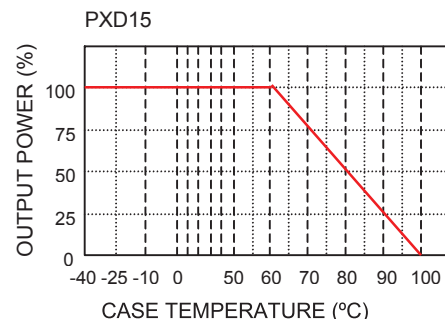
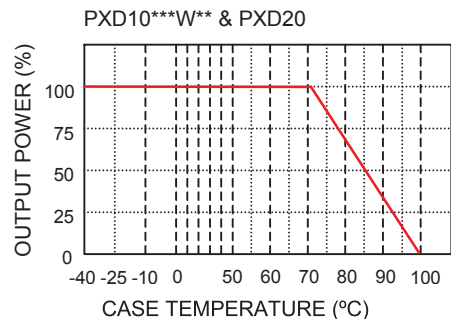
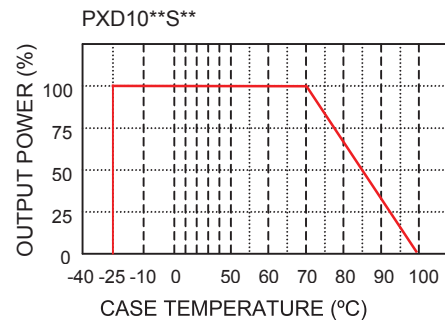
## Other Industrial Products

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

## Outline Drawing



## Derating Curves



For Additional Information, please visit [us.tdk-lambda.com/lp/products/px-series.htm](http://us.tdk-lambda.com/lp/products/px-series.htm)