TDK·Lambda

PXF Series

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

- Industry Standard 2" x 2" Footprint
- Six Sided Shielding
- Agency Approved
- 12, 24V, and 48V Inputs (including 4:1 ranges)

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	
Maximum Output Power	40W or 60W
Voltage Accuracy (Full Load, Nom. Vin)	Single, Dual and Triple Main ±1%, Triple Auxiliaries ±5%
Voltage Adjustment (1)	±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 ±0.5%, Triple (main) ±1%, Triple (auxiliary) ±5%
Load Regulation (10% to 100%) (3)	Single ±0.5%, Dual ±1%, Triple (main) ±2%, Triple (auxiliary) ±5%
Cross Regulation (25% to 100%) (4)	Triple (main) ±1%, Dual/Triple (auxiliary) ±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	<±0.02%/°C
Operating Temperature	See derating curves
Maximum Case Temperature	PXF40: 100°C, PXF40-xxW 105°C, PXF60 110°C
Storage Temperature	PXF40: -55 to 105°C, PXF40xxW, PXF60 125°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) (6)	PXF40: 40mA, PXF40xxW, PXF60: 20mA
Isolation Voltage	Input - Output, Input to Case: 1600VDC minimum
Isolation Resistance	10^9 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	EN55022 Level A, see installation manual
Immunity	EN61000-4-2, -3, -4, -5, -6
Safety Agency Approval	IEC60950-1, UL60950-1, EN60950-1, 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 impedence of 12uH placed in series with + input.

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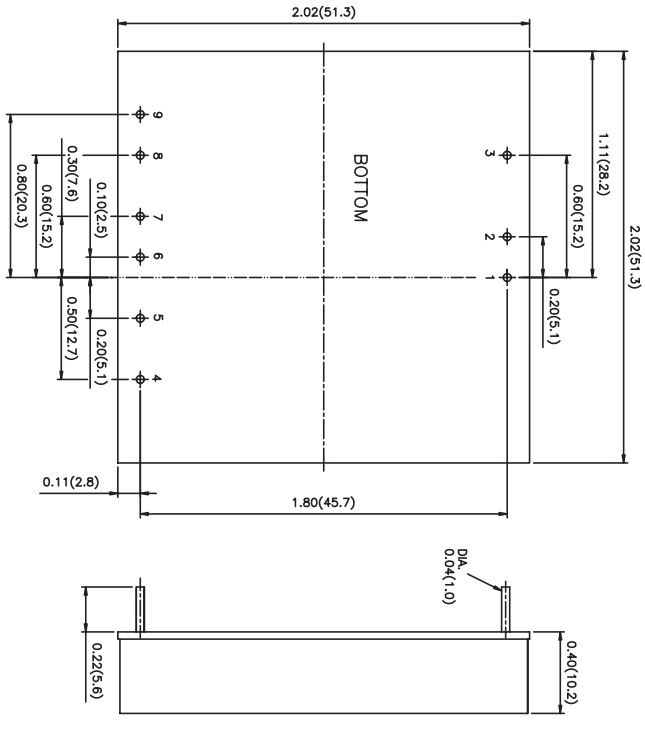
Model Selector

Output Volt(V)	Output Curr(A)	Input Volt(VDC)	Model	Ripple/Noise (mV)	Eff.(%)	Max Load Cap(uF)
Single Outputs						
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
Dual Outputs						
±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
Triple Outputs						
3.3V,±12V	6.0,±0.4	9 - 18	PXF40-12T3312	50 / 75	83	13000,±330
3.3V,±12V	6.0,±0.4	18 - 36	PXF40-24T3312	50 / 75	85	13000,±330
3.3V,±12V	6.0,±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, ±15V	6.0, ±0.3	9 - 18	PXF40-12T0515	50/75	86	6800, ±110
5V, ±15V	6.0, ±0.3	18 - 36	PXF40-24T0515	50/75	87	6800, ±110
5V, ±15V	6.0, ±0.3	36 - 75	PXF40-48T0515	50/75	88	6800, ±110

Pinout

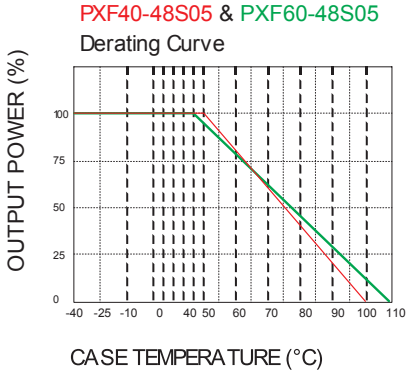
PIN#	Function: Single Output	Dual Output	Triple Output
1	+ Input	+ Input	+ Input
2	- Input	- Input	- Input
3	Remote on/off	Remote on/off	Remote on/off
4	No Pin	No Pin	+ Aux
5	- Sense (Note 1)	+ VO	Common
6	+ Sense (Note 1)	Common	-Aux
7	+ Output	Common	+ Output
8	- Output	- VO	- Output (Com)
9	Trim	Trim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

Outline Drawing



ALL DIMENSIONS IN INCHES(mm)
PIN PITCH TOLERANCE ±0.014(0.35)
Tolerance : x.xx±0.02(x.x±0.5)
x.xxx±0.01(x.xx±0.25)

Derating Curves



Heat Sink (0.22" high)

7G0026A (includes thermal adhesive pad)

Other Lambda Industrial Products

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

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

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