https://product.tdk.com/en/power/pxf
https://www.emea.lambda.tdk.com/uk/products/pxf

40-60W Single, Dual and Triple Output Isolated DC-DC Converters

Industrial Test COMM Broadcast

The 40 and 60W rated board mounted PXF DC-DC converters feature 4:1 or 2:1 input ranges in a 2 x 2" (50.8 x 50.8mm) industry standard package. The series is certified to the IEC/UL/CSA/EN 62368-1 safety standards and have six-sided, shielded metal cases for reduced radiated noise. The output voltage on the single and dual models can be adjusted by +/-10%. All converters in the PXF series have remote on/off.

Features	Benefits
• IEC/UL/CSA/EN 62368-1 Certification	• Easier System Compliance
• Wide Range Input	• Less Parts to Inventory
• Six Sided Shielding	• Reduced Radiated Noise
• Epoxy Encapsulated	• Improved Shock and Vibration Performance

PXF-	40	-24	S	05	-N

40	40W Output Power
60	60W Output Power

-12	9 - 18V input
-24	18 - 36V input
-48	36 - 75V input
-24W	9 - 36V input
-48W	18 - 75V input

S	Single Output
D	Dual Output
T	Triple Output

Single Output	
3P3	3.3V Output Voltage
05	5V Output Voltage
Single and Dual Output	
12	12V Output Voltage
15	15V Output Voltage
Triple Output	
3312	3.3V, ±12V Output Voltage
0512	5V, ±12V Output Voltage
0515	5V, ±15V Output Voltage

Blank	Positive Logic Remote On/Off
-N	Negative Logic Remote On/Off*

Preferred model

*PXF40 Wide Range and PXF60 Only

Related Products

Type	Part Number(s)	Description
Accessory	7G0026A	PXF heatsink with adhesive pad (5.58mm high)

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	No Load Input Current (mA)	Ripple &Noise (mV_{pk-pk})	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXF40-12S3P3	9 - 18	3.3	8	175	50	84	21,000
PXF40-24WS3P3	9 - 36	3.3	10	75	50	86	25,750
PXF40-24S3P3	18 - 36	3.3	8	60	50	87	21,000
PXF40-48WS3P3	18 - 75	3.3	10	55	50	86	25,750
PXF60-24S3P3	18 - 36	3.3	14	100	75	89	36,000
PXF40-48S3P3	36 - 75	3.3	8	35	50	88	21,000
PXF60-48S3P3	36 - 75	3.3	14	80	75	89	36,000
PXF40-12S05	9 - 18	5	8	225	50	86	13,600
PXF40-24WS05	9 - 36	5	8	95	50	87	13,600
PXF40-24S05	18 - 36	5	8	80	50	89	13,600
PXF40-48WS05	18 - 75	5	8	60	50	88	13,600
PXF40-48S05	36 - 75	5	8	40	50	90	13,600
PXF60-24S05	18 - 36	5	12	130	75	90	20,400
PXF60-48S05	36 - 75	5	12	90	75	90	20,400
PXF40-12S12	9 - 18	12	3.333	255	75	86	2,360
PXF40-24WS12	9 - 36	12	3.333	50	75	87	2,360
PXF40-24S12	18 - 36	12	3.333	70	75	88	2,360
PXF40-48WS12	18 - 75	12	3.333	30	75	87	2,360
PXF40-48S12	36 - 75	12	3.333	50	75	89	2,360
PXF60-24S12	18 - 36	12	5	50	100	90	3,550
PXF60-48S12	36 - 75	12	5	30	100	90	3,550
PXF40-12S15	9 - 18	15	2.666	310	75	87	1,510
PXF40-24WS15	9 - 36	15	2.666	50	75	87	1,510
PXF40-24S15	18 - 36	15	2.666	85	75	89	1,510
PXF40-48WS15	18 - 75	15	2.666	25	75	87	1,510
PXF40-48S15	36 - 75	15	2.666	50	75	89	1,510
PXF60-24S15	18 - 36	15	4	50	100	90	2,300
PXF60-48S15	36 - 75	15	4	30	100	90	2,300
Dual Outputs							
PXF40-24WD12	9 - 36	±12	±1.667	60	120	86	±1,200
PXF40-12D12	9 - 18	±12	±1.8	30	120	85	±1,200
PXF40-24D12	18 - 36	±12	±1.8	20	120	87	±1,200
PXF40-48WD12	18 - 75	±12	±1.667	30	120	86	±1,200
PXF40-48D12	36 - 75	±12	±1.8	15	120	87	±1,200
PXF40-24WD15	9 - 36	±15	±1.333	70	150	86	±750
PXF40-12D15	9 - 18	±15	±1.4	35	150	85	±750
PXF40-24D15	18 - 36	±15	±1.4	20	150	87	±750
PXF40-48WD15	18 - 75	±15	±1.333	30	150	86	±750
PXF40-48D15	36 - 75	±15	±1.4	15	150	87	±750
Triple Outputs							
PXF40-12T3312	9 - 18	3.3V, ±12V	6.0, ±0.4	215	50 / 75	83	13,000, ±330
PXF40-24T3312	18 - 36	3.3V, ±12V	6.0, ±0.4	65	50 / 75	85	13,000, ±330
PXF40-48T3312	36 - 75	3.3V, ±12V	6.0, ±0.4	35	50 / 75	86	13,000, ±330
PXF40-12T0512	9 - 18	5V, ±12V	6.0, ±0.4	280	50 / 75	85	6,800, ±330
PXF40-24T0512	18 - 36	5V, ±12V	6.0, ±0.4	60	50 / 75	87	6,800, ±330
PXF40-48T0512	36 - 75	5V, ±12V	6.0, ±0.4	30	50 / 75	88	6,800, ±330
PXF40-12T0515	9 - 18	5V, ±15V	6.0, ±0.3	255	50 / 75	86	6,800, ±110
PXF40-24T0515	18 - 36	5V, ±15V	6.0, ±0.3	75	50 / 75	87	6,800, ±110
PXF40-48T0515	36 - 75	5V, ±15V	6.0, ±0.3	40	50 / 75	88	6,800, ±110

Specifications

Model		PXF40	PXF60
Input			
Input Voltage Range	-	See Model Selector Table	
Input Surge Voltage	Vdc	12V input: 36, 24V input: 50, 48V input: 100 (100ms maximum)	
Start-up Time	ms	25 (20 for PXF40W Models)	20
No Load Input Current	-	See Model Selector Table	
Efficiency	-	See Model Selector Table	
Conducted & Radiated EMI	-	EN55032-A (Class B - See installation diagrams for external circuitry)	
Immunity	-	See Immunity Section	
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark	

Immunity

Test	Standard	Test Level	Criteria	Notes See application notes on website for recommended external components
ESD	EN61000-4-2	3	A / B	Air ± 8kV and Contact ± 6kV (Criteria B for PXF40 Models)
Radiated Susceptibility	EN61000-4-3	3	A	10V/m
Electrical Fast Transient Burst (1)	EN61000-4-4	3 (±2kV)	A / B	Criteria A for PXF60 Models
Surge (1)	EN61000-4-5	2 (±1kV)	A / B	Criteria B for PXF40 Models (Narrow Range Input Only)
Conducted Susceptibility	EN61000-4-6	3	A	10Vrms
Magnetic Fields	EN61000-4-8	5	A	100A/m continuous; 1000A/m 1s

Specifications

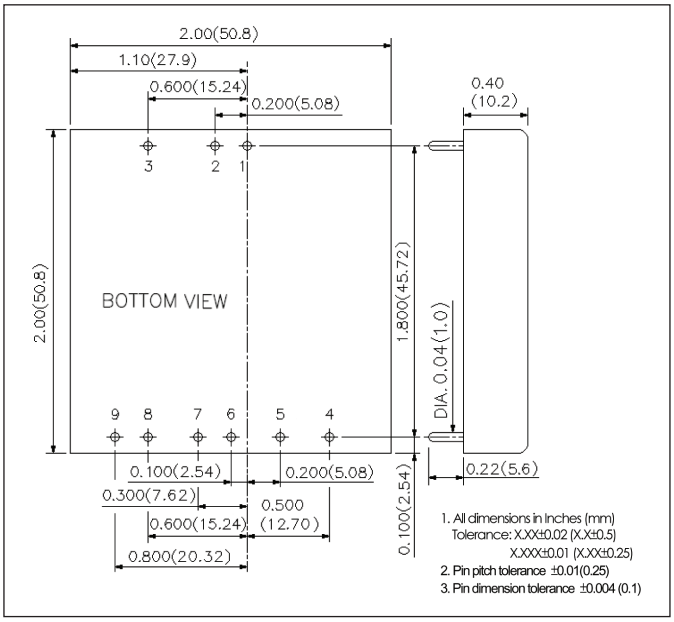
Model		PXF40	PXF60
Output			
Output Voltage Accuracy	%	Single / Dual Output: ±1 Triple Output (3.3 / 5Vdc): ±1 Triple Output (12 / 15Vdc): ±5	±1
Output Voltage Adjustment (2)	%	±10 (Single / Dual Output Only)	
Switching Frequency	kHz	270 - 330 (Fixed)	
Line Regulation	%	Single / Dual ±0.5%, Triple (main) ±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%	
External Load Capacitance	-	See Model Selector Table	
Ripple & Noise (5)	-	See Model Selector Table	
Temperature Coefficient	%/°C	±0.02	
Minimum Load (6)	%	Single Output: 0, Dual and Triple: 10	
Transient Response (25% step load)	µs	250	
Overcurrent Protection	%	150 (Hiccup Mode with Auto-Recovery)	
Overvoltage Protection (Zener Diode Clamp)	V	3.3V: 3.9, 5V: 6.2, 12V: 15, 15V: 18	3.3V: 3.7-5.4, 5V: 5.6-7.0, 12V: 13.8-17.5, 15V: 16.8-20.5
Overtemperature Protection	°C	115 (110 for PXF40W Models)	120
Short Circuit Protection	-	Hiccup Mode with Auto-Recovery	
Remote Sense (7)	-	Yes	
Remote On/Off	-	Positive Logic (-P): ON: Open or 3.5-12V, OFF Short or 0-1.2V (PXF40W Only) Negative Logic (-N): ON: Short or 0-1.2V, OFF Open or 3-12V	Positive Logic (-P): ON: Open or 3-12V, OFF Short or 0-1.2V Negative Logic (-N): ON: Short or 0-1.2V, OFF Open or 3-12V

Specifications

Model		PXF40	PXF60
Environment			
Operating Temperature	°C	-40 to +100 (See Derating Curves below)	-40 to +110 (See Derating Curves below)
Maximum Case Temperature	°C	100 (105 for PXF40W Models)	110
Thermal Impedance	°C/W	9.2	10.5
Storage Temperature	°C	-55 to +125	
Humidity (non condensing)	%RH	5 - 95 (Operating & Storage)	
Cooling	-	Convection	
Withstand Voltage (For 1 minute)	Vdc	Input to Output, Input to Case, Output to Case: 1,600	
Isolation Resistance	Ω	10^9	
Isolation Capacitance	pF	1,000 (2,500 for PXF40W Models)	1,000
Vibration (Operating)	-	MIL-STD-810F	
Thermal Shock	-	MIL-STD-810F	
Other			
Weight (Typ)	g	60	
Size (LxWxH)	mm	50.8 x 50.8 x 10.1	
Size (LxWxH)	Inches	2 x 2 x 0.4	
Case Material	-	Nickel-coated Copper	
Base Material	-	FR4 PCB	
Potting Material	-	Epoxy (UL94 V-0)	
MTBF - MIL-HDBK-217F, Full Load	Hours	922,400 (661,700 for PXF40W Models)	408,900
Warranty	yrs	3	

Notes
See website for detailed specifications, test methods and installation manual
(1) With an input filter capacitor (Nippon chemi-con KY series, 220µF/100V)
(2) Maximum output deviation is 10% inclusive of remote sense and trim
(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) Measured with a 20MHz bandwidth oscilloscope across a 0.1uF/50V MLCC
(6) 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
(7) If remote sense is not being used, the +Sense and - Sense should be connected to their corresponding outputs; +output, -output

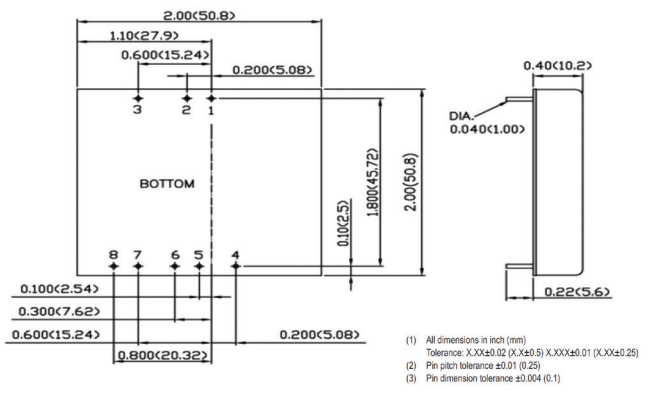
PXF40 Outline Drawing (Narrow Range Input)



PXF40 Pinout

Pin	Single O/P	Dual O/P
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	N/C	No Pin
5	-Sense (Note 7)	+Vout
6	+Sense (Note 7)	Common
7	+Vout	Common
8	-Vout	-Vout
9	Trim	Trim

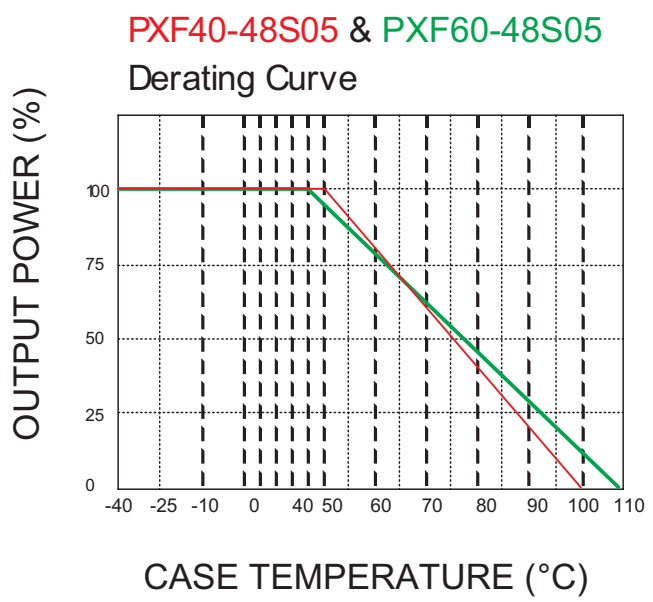
PXF40W/60W Outline Drawing (Wide Range Input)



PXF40W/60W Pinout

Pin	Single O/P	Dual O/P
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	-Sense (Note 7)	+Vout
5	+Sense (Note 7)	Common
6	+Vout	Common
7	-Vout	-Vout
8	Trim	Trim

PXF Derating Curve



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