

DC - DC Converters



Features:

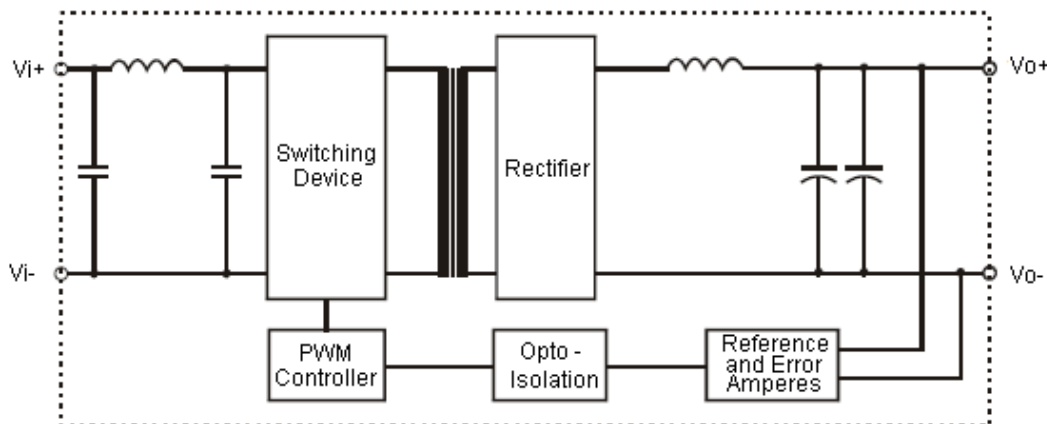
- Low Cost
- 4 : 1 wide input range
- I / O Isolation
- Input Pi Filter
- Short Circuit Protection
- High Performance
- 2 Years Warranty

Model List

Model No.	Input Voltage	Output Wattage	Output Voltage	Output Current	EFF. (Minimum)
Single Output Models					
FDD12-05S4	10 to 36 V dc	12 W	+5 V dc	2,400 mA	77%
FDD12-12D4			±12 V dc	±500 mA	

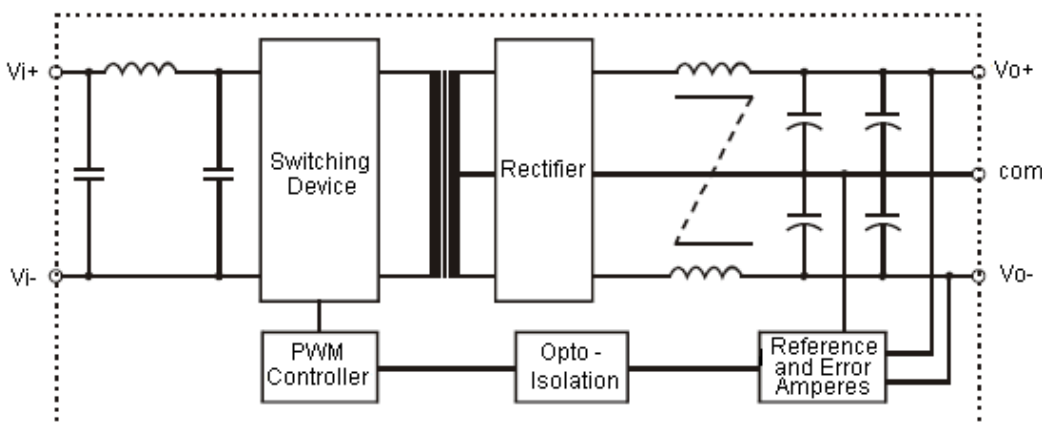
Circuit Schematic

Block diagram for FDD12 series with single output



Model No.	Input Voltage	Output Wattage	Output Voltage	Output Current	EFF. (Minimum)
Dual Output Model					
FDD12-12S4	10 to 36 V dc	12 W	+12 V dc	1,000 mA	77%

Block diagram for FDD12 series with dual output



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Specifications

All specifications typical at nominal line, full load, 25°C unless otherwise noticed

General					
Characteristics	Conditions	Minimum	Typical	Maximum	Unit
Switching Frequency	Vi nom, Io nom	-	200	-	KHz
Isolation Voltage	Input / Output	1,500	-	-	V dc
Isolation Resistance	Input / Output, at 500 V dc	100	-	-	MΩ
Ambient Temperature	Operating at Vi nom, Io nom	-25	-	+71	°C
Case Temperature	Operating at Vi nom, Io nom	-	-	+100	
Derating	Vi nom	See derating curve			% / °C
Storage Temperature	Non operational	-40	-	+100	°C
M.T.B.F.	According to MIL-HDBK-217F, GF40	-	661,000	-	Hours
Dimension	L50.8 × W50.8 × H11.9				mm
Cooling	Free air convection				
Case Material	Metal				

Input Specifications

Characteristics	Conditions	Minimum	Typical	Maximum	Unit
Input Voltage Range	Ta minimum to Ta maximum, Io nom	10	24	36	V dc
		18	48	72	
No Load Input Current	Vi nom, Io = 0	24 V Models	-	20	mA
		48 V Models	-	15	
Input Voltage w/o Damage	Io nom	24 V Models	-	40	V dc
		48 V Models	-	75	
Input Filter	Pi type				

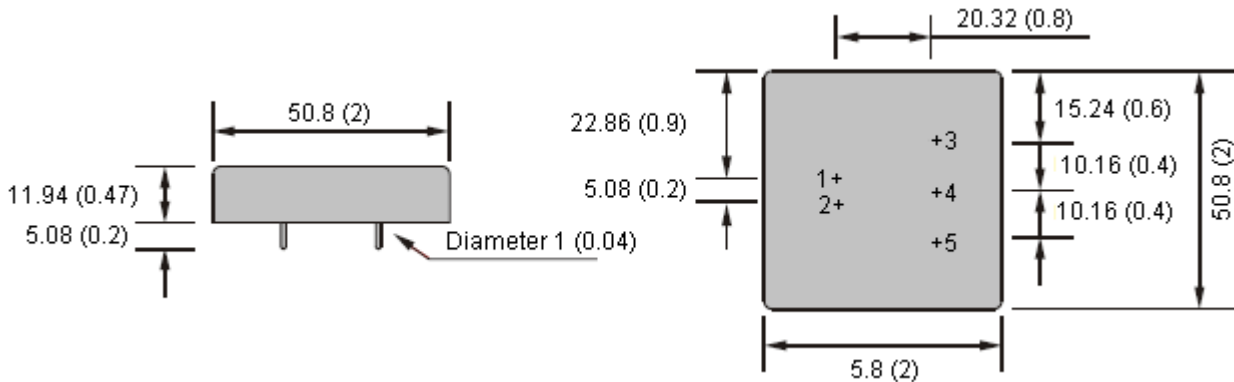
Output Specifications

Characteristics	Conditions	Minimum	Typical	Maximum	Unit	
Output Voltage Accuracy	Vi nom, Io nom	-	-	±2	%	
Minimum load	Vi nom	Single output model	0	-		
		Dual output model (each output)	20	-		
Line Regulation	Io nom, Vi minimum to Vi maximum	-	-	±1		
Load Regulation	Vi nom, Io 0 to Io nom, single output models	-	-	±2		
	Vi nom, Io minimum to Io nom, dual output models	-	-	±5		
Transient Recovery Time	Vi nom, Io nom to 1/2 Io nom	-	500	-	µs	
Temperature Coefficient	Vi nom, Io nom	-	-	±0.02	% / °C	
Ripple and Noise	Vi nom, Io nom, BW = 20 MHz	3.3 V model 5 V, 12 V and dual	-	-	100	mV
			-	-	Vout × 1%	
Efficiency	Vi nom, Io nom, Po / Pi	Up to 77%, see model list				

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Control and Protection	
Input Reversed	Shunt diode built in, external fuse recommended
Output Short Circuit	Continuous

Mechanism and Pin Configuration



Physical Characteristics

Case Size	50.8 × 50.8 × 11.9 mm 2 × 2 × 0.47 inches
Case Material	Metal
Weight	65 g (type)

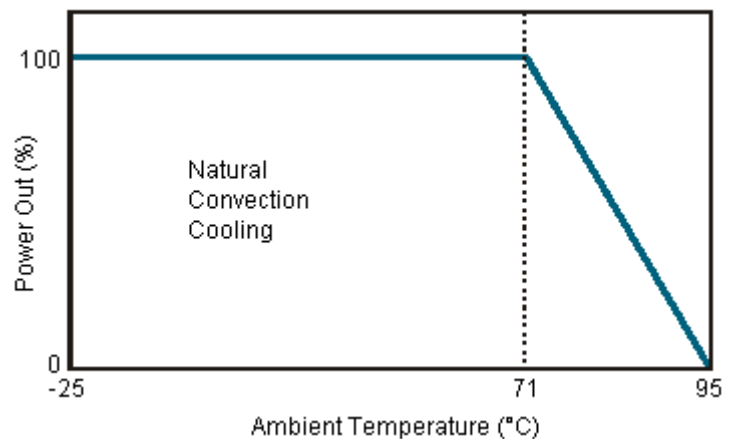
Bottom View

Dimensions : Millimetres (Inches)

Pin Assignment

General		
Pin No.	Single	Dual
1	Vi+	Vi+
2	Vi-	Vi-
3	Vo+	Vo+
4	NO PIN	com
5	Vo-	Vo-

Derating



Part Number Table

Description	Part Number
Converter, DC / DC, 12 W, 5 V	FDD12-05S4
Converter, DC / DC, 12 W, ±12 V	FDD12-12D4
Converter, DC / DC, 12 W, 12 V	FDD12-12S4

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