

# FDD05 SERIES



DC - DC CONVERTER  
5 ~ 6W SINGLE & DUAL OUTPUT

## FEATURES

- LOW COST
- 4:1 & 3:1 & 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE

## MODEL LIST

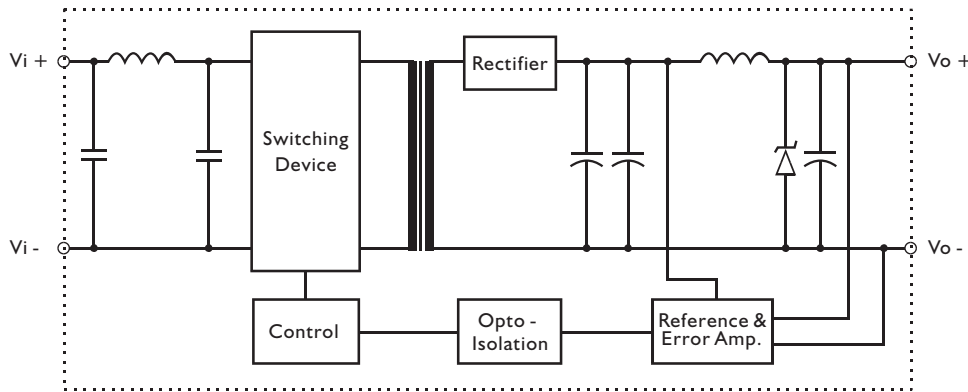
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)
Single Output Models					
FDD05 - 05S	20~60 VDC	5 WATTS	+ 5 VDC	1000 mA	72%
FDD05 - 12S	20~60 VDC	6 WATTS	+ 12 VDC	500 mA	72%
FDD05 - 15S	20~60 VDC	6 WATTS	+ 15 VDC	400 mA	72%
FDD05 - 05S1	9~18 VDC	5 WATTS	+ 5 VDC	1000 mA	63%
FDD05 - 12S1	9~18 VDC	6 WATTS	+ 12 VDC	500 mA	68%
FDD05 - 15S1	9~18 VDC	6 WATTS	+ 15 VDC	400 mA	68%
FDD05 - 05S2	18~36 VDC	5 WATTS	+ 5 VDC	1000 mA	72%
FDD05 - 12S2	18~36 VDC	6 WATTS	+ 12 VDC	500 mA	72%
FDD05 - 15S2	18~36 VDC	6 WATTS	+ 15 VDC	400 mA	72%
FDD05 - 05S3	36~72 VDC	5 WATTS	+ 5 VDC	1000 mA	72%
FDD05 - 12S3	36~72 VDC	6 WATTS	+ 12 VDC	500 mA	72%
FDD05 - 15S3	36~72 VDC	6 WATTS	+ 15 VDC	400 mA	72%
FDD05 - 05S4	9~36 VDC	5 WATTS	+ 5 VDC	1000 mA	72%
FDD05 - 12S4	9~36 VDC	6 WATTS	+ 12 VDC	500 mA	72%
FDD05 - 15S4	9~36 VDC	6 WATTS	+ 15 VDC	400 mA	72%
FDD05 - 05S5	18~72 VDC	5 WATTS	+ 5 VDC	1000 mA	72%
FDD05 - 12S5	18~72 VDC	6 WATTS	+ 12 VDC	500 mA	72%
FDD05 - 15S5	18~72 VDC	6 WATTS	+ 15 VDC	400 mA	72%

### MODEL LIST

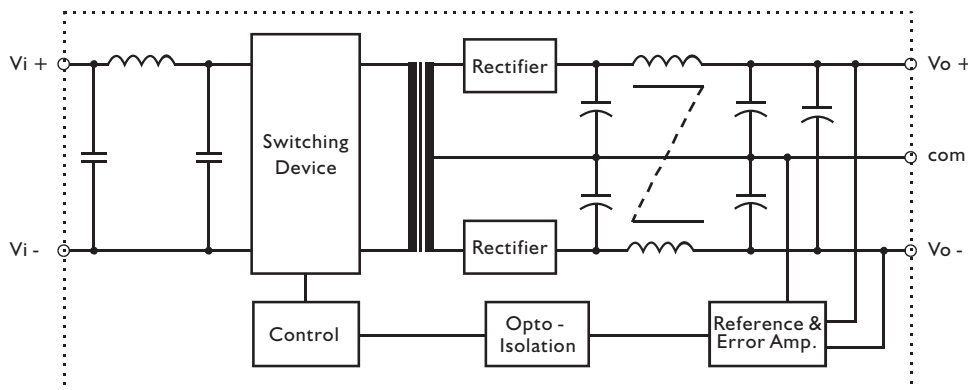
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)
<b>Dual Output Models</b>					
FDD05 - 05D	20~60 VDC	5 WATTS	± 5 VDC	± 500 mA	73%
FDD05 - 12D	20~60 VDC	6 WATTS	± 12 VDC	± 250 mA	75%
FDD05 - 15D	20~60 VDC	6 WATTS	± 15 VDC	± 200 mA	75%
FDD05 - 05D1	9~18 VDC	5 WATTS	± 5 VDC	± 500 mA	67%
FDD05 - 12D1	9~18 VDC	6 WATTS	± 12 VDC	± 250 mA	70%
FDD05 - 15D1	9~18 VDC	6 WATTS	± 15 VDC	± 200 mA	70%
FDD05 - 05D2	18~36 VDC	5 WATTS	± 5 VDC	± 500 mA	73%
FDD05 - 12D2	18~36 VDC	6 WATTS	± 12 VDC	± 250 mA	75%
FDD05 - 15D2	18~36 VDC	6 WATTS	± 15 VDC	± 200 mA	75%
FDD05 - 05D3	36~72 VDC	5 WATTS	± 5 VDC	± 500 mA	73%
FDD05 - 12D3	36~72 VDC	6 WATTS	± 12 VDC	± 250 mA	75%
FDD05 - 15D3	36~72 VDC	6 WATTS	± 15 VDC	± 200 mA	75%
FDD05 - 05D4	9~36 VDC	5 WATTS	± 5 VDC	± 500 mA	73%
FDD05 - 12D4	9~36 VDC	6 WATTS	± 12 VDC	± 250 mA	75%
FDD05 - 15D4	9~36 VDC	6 WATTS	± 15 VDC	± 200 mA	75%
FDD05 - 05D5	18~72 VDC	5 WATTS	± 5 VDC	± 500 mA	73%
FDD05 - 12D5	18~72 VDC	6 WATTS	± 12 VDC	± 250 mA	75%
FDD05 - 15D5	18~72 VDC	6 WATTS	± 15 VDC	± 200 mA	75%

### CIRCUIT SCHEMATIC

• Block diagram for FDD05 series with single output



• Block diagram for FDD05 series with dual output



### SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

#### GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom	80			KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	1G			Ω
Ambient temperature	Operating at Vi nom, Io nom	-25		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 90	°C
Derating	Vi nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L50.8 x W50.8 x H11.9				mm
Cooling	Free air convection				
Case material	Plastic				

#### INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit	
Input voltage range	Ta min... Ta max, Io nom	2:1 models	9	12	18	VDC
			18	24	36	VDC
			36	48	72	VDC
	3:1 models	20	48	60	VDC	
		4:1 models	9	24	36	VDC
			18	48	72	VDC
No load input current	Vi nom, Io = 0	12V models			40	mA
		24V models			25	mA
		48V models			15	mA
Input voltage w/o damage	Io nom	12V models			20	VDC
		24V models			40	VDC
		48V models			75	VDC
Input filter	Pi type					

#### OUTPUT SPECIFICATIONS

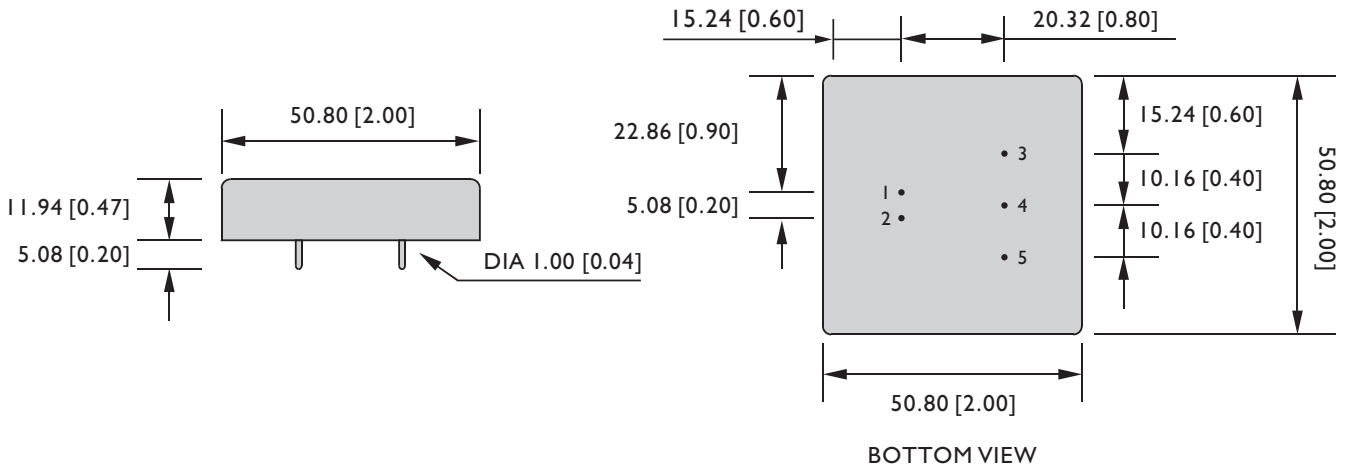
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom single output models	0			%
	dual output models (each output)	20			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom, Io 0 ... Io nom, single output models			± 2	%
	Vi nom, Io min ... Io nom, dual output models			± 5	%
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz			150	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 75%, See model list			

#### CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

### MECHANISM & PIN CONFIGURATION

mm [inch]



### PHYSICAL CHARACTERISTICS

CASE SIZE	50.8 x 50.8 x 11.9 mm 2 x 2 x 0.47 inches
CASE MATERIAL	Plastic
WEIGHT	45 g

### PIN ASSIGNMENT

GENERAL					
PIN NO.	1	2	3	4	5
SINGLE	Vi+	Vi-	Vo+	NO PIN	Vo-
DUAL	Vi+	Vi-	Vo+	com	Vo-

### DERATING

