

# FDD05 SERIES

# DC-DC CONVERTER

## 5 ~ 6W



FDD05 - 05 S 1

- WATTAGE
- 03 : 3.3V OUT
  - 05 : 5V OUT
  - 12 : 12V OUT
  - 15 : 15V OUT
- S : SINGLE OUTPUT  
D : DUAL OUTPUT
- 1: 9~18V IN
  - 2: 18~36V IN
  - 3: 36~72V IN
  - 4: 9~36V IN
  - 5: 18~72V IN
  - \*: 20~60V IN
- \*=BLANK

## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (MIN.)	CASE
<b>Single Output Models</b>						
FDD05 - 05S	20~60 VDC	5 WATTS	+ 5 VDC	1000 mA	72%	FA
FDD05 - 12S	20~60 VDC	6 WATTS	+ 12 VDC	500 mA	72%	FA
FDD05 - 15S	20~60 VDC	6 WATTS	+ 15 VDC	400 mA	72%	FA
FDD05 - 05S1	9~18 VDC	5 WATTS	+ 5 VDC	1000 mA	63%	FA
FDD05 - 12S1	9~18 VDC	6 WATTS	+ 12 VDC	500 mA	68%	FA
FDD05 - 15S1	9~18 VDC	6 WATTS	+ 15 VDC	400 mA	68%	FA
FDD05 - 05S2	18~36 VDC	5 WATTS	+ 5 VDC	1000 mA	72%	FA
FDD05 - 12S2	18~36 VDC	6 WATTS	+ 12 VDC	500 mA	72%	FA
FDD05 - 15S2	18~36 VDC	6 WATTS	+ 15 VDC	400 mA	72%	FA
FDD05 - 05S3	36~72 VDC	5 WATTS	+ 5 VDC	1000 mA	72%	FA
FDD05 - 12S3	36~72 VDC	6 WATTS	+ 12 VDC	500 mA	72%	FA
FDD05 - 15S3	36~72 VDC	6 WATTS	+ 15 VDC	400 mA	72%	FA
FDD05 - 03S4	9~36 VDC	5 WATTS	+3.3 VDC	1500 mA	70%	FA
FDD05 - 05S4	9~36 VDC	5 WATTS	+ 5 VDC	1000 mA	72%	FA
FDD05 - 12S4	9~36 VDC	6 WATTS	+ 12 VDC	500 mA	72%	FA
FDD05 - 15S4	9~36 VDC	6 WATTS	+ 15 VDC	400 mA	72%	FA
FDD05 - 03S5	18~72 VDC	5 WATTS	+3.3 VDC	1500 mA	70%	FA
FDD05 - 05S5	18~72 VDC	5 WATTS	+ 5 VDC	1000 mA	72%	FA
FDD05 - 12S5	18~72 VDC	6 WATTS	+ 12 VDC	500 mA	72%	FA
FDD05 - 15S5	18~72 VDC	6 WATTS	+ 15 VDC	400 mA	72%	FA



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

### FEATURES

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

### DESCRIPTION

THE FDD05 SERIES ARE 5WATTS & 6W WATTS SINGLE & DUAL OUTPUT DC/DC CONVERTERS. 4:1 & 3:1 & 2:1 WIDE INPUT RANGE WITH I/O ISOLATION AND SHORT CIRCUIT PROTECT FEATURES MAKE IT SUITABLE TO APPLICATION ON VARIABLE APPLICATIONS WITH LOW COST. ALL THE MODELS ARE PACKAGED IN L x W x H = 2" x 2" x 0.47". CONFIGURATION, AND PCB MOUNTABLE DIRECTLY.



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### SPECIFICATION

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

#### GENERAL SPECIFICATION

- \* Switching frequency: ..... >80KHz
- \* Isolation voltage: ..... 1,500VDC
- \* Isolation resistance: ..... 1G  $\Omega$ (min.)
- \* Operating ambient temperature: ..... -25 to +71°C
- \* Storage temperature: ..... -40 to +100°C
- \* Max. Case temperature: ..... 90°C
- \* M.T.B.F.: ..... 661,000Hrs at @ GF40, according to MIL-HDBK-217F
- \* Cooling: ..... Free air convection
- \* Temperature coefficient: .....  $\pm 0.02\%$  / °C
- \* Dimension: ..... 50.8 x 50.8 x 12mm

#### INPUT SPECIFICATIONS

- \* Input voltage range: ..... 9 ~ 18VDC for 12V  
9 ~ 36VDC for 24V  
18 ~ 36VDC for 24V  
18 ~ 72VDC for 48V  
20 ~ 60VDC for 48V  
36 ~ 72VDC for 48V
- \* Input filter: ..... Pi type
- \* No load input current: ..... 40mA for 12V in  
25mA for 24V in  
15mA for 48V in
- \* Max. Input voltage: ..... 20VDC for 12V in  
40VDC for 24V in  
75VDC for 48V in

#### OUTPUT SPECIFICATIONS

- \* Output voltage accuracy: .....  $\pm 2\%$  at  $V_{o\_nom}$
- \* Minimum load: ..... No load for single output models  
 $\pm 2\%$  at  $V_{o\_nom}$  for dual output models
- \* Line regulation: .....  $\pm 1\%$  at  $V_{o\_nom}$
- \* Load regulation: .....  $\pm 2\%$  at  $V_{o\_nom}$  for single output models  
 $\pm 5\%$  at  $V_{o\_nom}$  for dual output models
- \* Ripple & noise: ..... 150mV (max.)
- \* Efficiency: ..... Up to 75%, see model list
- \* Derating: ..... See table 1
- \* Case material: ..... Plastic

#### CONTROL AND PROTECTION

- \* Input reversed: ..... Shunt diode use external fuse
- \* Output short circuit: ..... Continuous

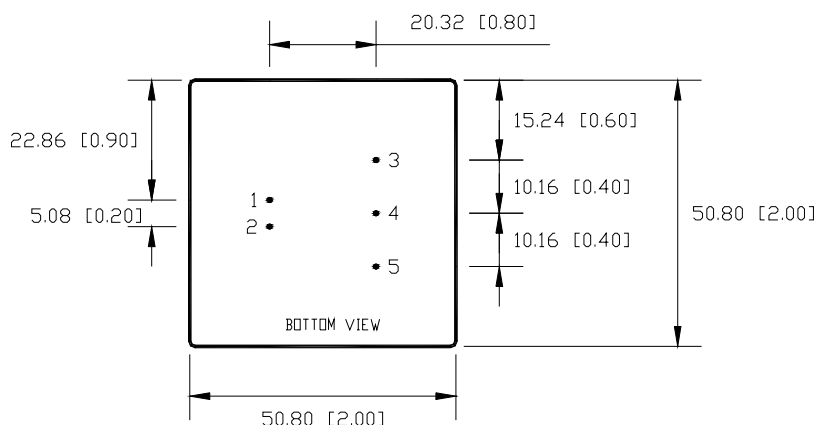
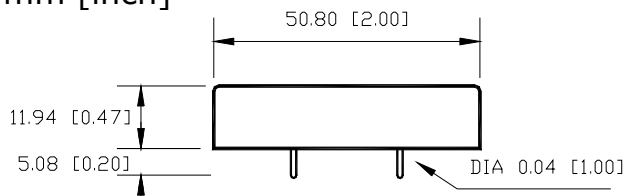


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## MECHANISM & PIN CONFIGURATION

mm [inch]



## PHYSICAL CHARACTERISTICS

CASE SIZE	50.8 x 50.8 x 12mm 2 x 2 x 0.47inches
CASE MATERIAL	Plastic
WEIGHT	45 g

## PIN ASSIGMENT

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

## Derating:

[TABLE 1]

