

FDD03 SERIES

DC-DC CONVERTER 2 ~ 3W



FDD03 - 05 S 1

WATTAGE

05 : 5V OUT
12 : 12V OUT
15 : 15V OUT

1: 9~18V IN
2: 18~36V IN
3: 36~72V IN
4: 9~36V IN
5: 18~72V IN
*: 20~60V IN

S : SINGLE OUTPUT

D : DUAL OUTPUT

*=BLANK

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (MIN.)	CASE
Single Output Models						
FDD03 - 05S	20~60 VDC	2.5 WATTS	+ 5 VDC	500 mA	68%	FC
FDD03 - 12S	20~60 VDC	3 WATTS	+ 12 VDC	250 mA	70%	FC
FDD03 - 15S	20~60 VDC	3 WATTS	+ 15 VDC	200 mA	70%	FC
FDD03 - 05S1	9~18 VDC	2 WATTS	+ 5 VDC	400 mA	63%	FC
FDD03 - 12S1	9~18 VDC	2.4 WATTS	+ 12 VDC	200 mA	65%	FC
FDD03 - 15S1	9~18 VDC	2.2 WATTS	+ 15 VDC	150 mA	65%	FC
FDD03 - 05S2	18~36 VDC	2.5 WATTS	+ 5 VDC	500 mA	68%	FC
FDD03 - 12S2	18~36 VDC	3 WATTS	+ 12 VDC	250 mA	70%	FC
FDD03 - 15S2	18~36 VDC	3 WATTS	+ 15 VDC	200 mA	70%	FC
FDD03 - 05S3	36~72 VDC	2.5 WATTS	+ 5 VDC	500 mA	68%	FC
FDD03 - 12S3	36~72 VDC	3 WATTS	+ 12 VDC	250 mA	70%	FC
FDD03 - 15S3	36~72 VDC	3 WATTS	+ 15 VDC	200 mA	70%	FC
FDD03 - 05S4	9~36 VDC	2.5 WATTS	+ 5 VDC	500 mA	68%	FC
FDD03 - 12S4	9~36 VDC	3 WATTS	+ 12 VDC	250 mA	70%	FC
FDD03 - 15S4	9~36 VDC	3 WATTS	+ 15 VDC	200 mA	70%	FC
FDD03 - 05S5	18~72 VDC	2.5 WATTS	+ 5 VDC	500 mA	68%	FC
FDD03 - 12S5	18~72 VDC	3 WATTS	+ 12 VDC	250 mA	70%	FC
FDD03 - 15S5	18~72 VDC	3 WATTS	+ 15 VDC	200 mA	70%	FC



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MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (MIN.)	CASE
Dual Output Models						
FDD03 - 05D	20~60 VDC	2.5 WATTS	± 5 VDC	± 250 mA	70%	FC
FDD03 - 12D	20~60 VDC	3 WATTS	± 12 VDC	± 125 mA	72%	FC
FDD03 - 15D	20~60 VDC	3 WATTS	± 15 VDC	± 100 mA	73%	FC
FDD03 - 05D1	9~18 VDC	2 WATTS	± 5 VDC	± 200 mA	65%	FC
FDD03 - 12D1	9~18 VDC	2.4 WATTS	± 12 VDC	± 100 mA	67%	FC
FDD03 - 15D1	9~18 VDC	2.4 WATTS	± 15 VDC	± 80 mA	67%	FC
FDD03 - 05D2	18~36 VDC	2.5 WATTS	± 5 VDC	± 250 mA	70%	FC
FDD03 - 12D2	18~36 VDC	3 WATTS	± 12 VDC	± 125 mA	72%	FC
FDD03 - 15D2	18~36 VDC	3 WATTS	± 15 VDC	± 100 mA	73%	FC
FDD03 - 05D3	36~72 VDC	2.5 WATTS	± 5 VDC	± 250 mA	70%	FC
FDD03 - 12D3	36~72 VDC	3 WATTS	± 12 VDC	± 125 mA	72%	FC
FDD03 - 15D3	36~72 VDC	3 WATTS	± 15 VDC	± 100 mA	73%	FC
FDD03 - 05D4	9~36 VDC	2.5 WATTS	± 5 VDC	± 250 mA	70%	FC
FDD03 - 12D4	9~36 VDC	3 WATTS	± 12 VDC	± 125 mA	72%	FC
FDD03 - 15D4	9~36 VDC	3 WATTS	± 15 VDC	± 100 mA	73%	FC
FDD03 - 05D5	18~72 VDC	2.5 WATTS	± 5 VDC	± 250 mA	70%	FC
FDD03 - 12D5	18~72 VDC	3 WATTS	± 12 VDC	± 125 mA	72%	FC
FDD03 - 15D5	18~72 VDC	3 WATTS	± 15 VDC	± 100 mA	73%	FC

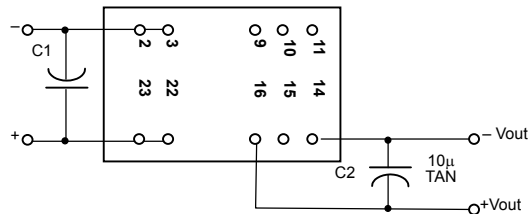


FDD03 SERIES

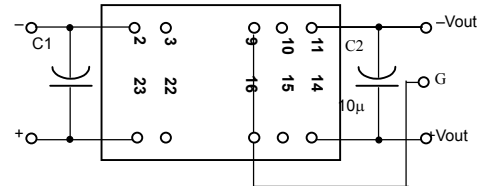
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APPLICATION CIRCUIT

a. SINGLE OUTPUT MODELS: (BOTTOM VIEW)



b. DUAL OUTPUT MODELS: (BOTTOM VIEW)



NOTE:

- a. $C1=4.7\mu F/100V$, $C2=10\mu F$
- b. C1 MUST BE ADDED WHEN APPLICATION
- c. C2 OPTIONAL TO MINIMIZED THE R&N <100mV
- d. LOAD 80% FL. (MAX.) WHEN INPUT VOLTAGE AT 9-11VDC (INPUT 9-36VDC MODELS) & 18-21VDC (INPUT 18-72VDC MODELS)

FEATURES

- * LOW COST
- * 4:1 & 3:1 & 2:1 WIDE INPUT RANGE
- * I/O ISOLATION
- * SHORT CIRCUIT PROTECTION
- * HIGH EFFICIENCY UP TO 73%

DESCRIPTION

THE FDD03 SERIES ARE 2 ~ 3 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 BE USED ON VARIABLE APPLICATIONS WITH VERY LOW COST. ALL THE MODELS ARE PACKAGED IN L x W x H = 1.25" x 0.8" x 0.5". 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: >50KHz
- * Isolation voltage: 1,500VDC
- * Isolation resistance: 1G Ω (min.)
- * Operating ambient temperature: -25 to +71°C
- * Storage temperature: -40 to +100°C
- * Max. Case temperature: 90°C
- * M.T.B.F.: 896,000Hrs at @ GF40, according to MIL-HDBK-217F
- * Cooling: Free air convection
- * Temperature coefficient: $\pm 0.02\%$ / °C
- * Dimension: 31.8 x 20.3 x 12.7mm

INPUT SPECIFICATIONS

- * No load input current: 9 ~ 18VDC for 12V
9 ~ 36VDC for 24V
18 ~ 36VDC for 24V
18 ~ 72VDC for 48V
20 ~ 60VDC for 48V
36 ~ 72VDC for 48V
- * Max. Input voltage: 18mA for 12V in
12mA for 24V in
8mA for 48V in
- * Input voltage range: 22VDC 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
 $\pm 20\%$ 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: $V_{out} \times \pm 2\%$ mV (max.)
- * Efficiency: Up to 73%, see model list
- * Derating: See table 1
- * Case material: Plastic

CONTROL AND PROTECTION

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

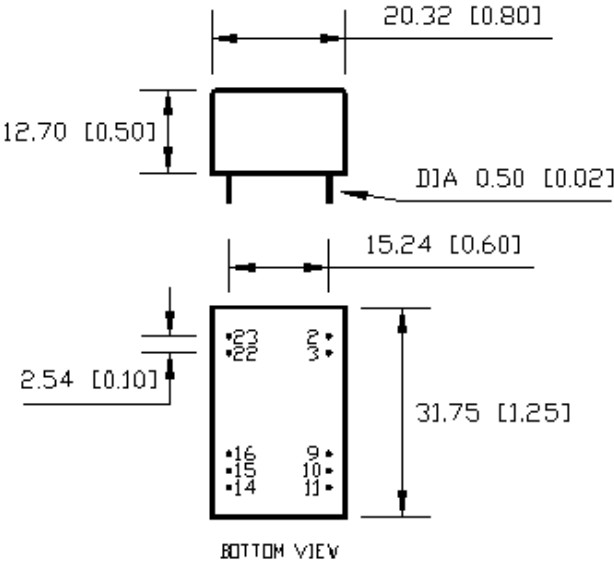
FDD03 SERIES

DC-DC CONVERTER

2 ~ 3W

MECHANISM & PIN CONFIGURATION

mm [inch]



PHYSICAL CHARACTERISTICS

CASE SIZE	31.8 x 20.3 x 12.7mm 1.25 x 0.8 x 0.5inches
CASE MATERIAL	Plastic
WEIGHT	15 g

PIN ASSIGNMENT

PIN NO.	2&3	9	10&15	11	14	16	22&23
SINGLE	Vi-	N.C.	N.C.	N.C.	Vo+	Vo-	Vi+
DUAL	Vi-	com	N.C.	Vo-	Vo+	com	Vi+

Derating:

[TABLE 1]

