

FDD03 SERIES



DC - DC CONVERTER

2.5 ~ 3W WITH REMOTE FUNCTION

FEATURES

- 4:1 WIDE INPUT RANGE
- DIP24 PACKAGE
- I/O, O/O ISOLATION
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 2 YEARS WARRANTY

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) |
|-----------|---------------|----------------|----------------|----------------|-------------|
|-----------|---------------|----------------|----------------|----------------|-------------|

Single Output Models

| | | | | | |
|---------------|-----------|-----------|----------|--------|-----|
| FDD03 - 05S4A | 9~36 VDC | 2.5 WATTS | + 5 VDC | 500 mA | 67% |
| FDD03 - 12S4A | 9~36 VDC | 3 WATTS | + 12 VDC | 250 mA | 68% |
| FDD03 - 15S4A | 9~36 VDC | 3 WATTS | + 15 VDC | 200 mA | 68% |
| FDD03 - 05S5A | 18~72 VDC | 2.5 WATTS | + 5 VDC | 500 mA | 68% |
| FDD03 - 12S5A | 18~72 VDC | 3 WATTS | + 12 VDC | 250 mA | 73% |
| FDD03 - 15S5A | 18~72 VDC | 3 WATTS | + 15 VDC | 200 mA | 73% |

Dual Output Models

| | | | | | |
|---------------|-----------|-----------|----------|----------|-----|
| FDD03 - 05D4A | 9~36 VDC | 2.5 WATTS | ± 5 VDC | ± 250 mA | 66% |
| FDD03 - 12D4A | 9~36 VDC | 3 WATTS | ± 12 VDC | ± 125 mA | 68% |
| FDD03 - 15D4A | 9~36 VDC | 3 WATTS | ± 15 VDC | ± 100 mA | 68% |
| FDD03 - 05D5A | 18~72 VDC | 2.5 WATTS | ± 5 VDC | ± 250 mA | 72% |
| FDD03 - 12D5A | 18~72 VDC | 3 WATTS | ± 12 VDC | ± 125 mA | 72% |
| FDD03 - 15D5A | 18~72 VDC | 3 WATTS | ± 15 VDC | ± 100 mA | 75% |

Double Output Models

| | | | | | |
|-----------------|-----------|-----------|-------------|--------------|-----|
| FDD03 - 0505D4A | 9~36 VDC | 2.5 WATTS | 5 / 5 VDC | 250 / 250 mA | 66% |
| FDD03 - 1212D4A | 9~36 VDC | 3 WATTS | 12 / 12 VDC | 125 / 125 mA | 68% |
| FDD03 - 1515D4A | 9~36 VDC | 3 WATTS | 15 / 15 VDC | 100 / 100 mA | 68% |
| FDD03 - 0505D5A | 18~72 VDC | 2.5 WATTS | 5 / 5 VDC | 250 / 250 mA | 72% |
| FDD03 - 1212D5A | 18~72 VDC | 3 WATTS | 12 / 12 VDC | 125 / 125 mA | 72% |
| FDD03 - 1515D5A | 18~72 VDC | 3 WATTS | 15 / 15 VDC | 100 / 100 mA | 75% |

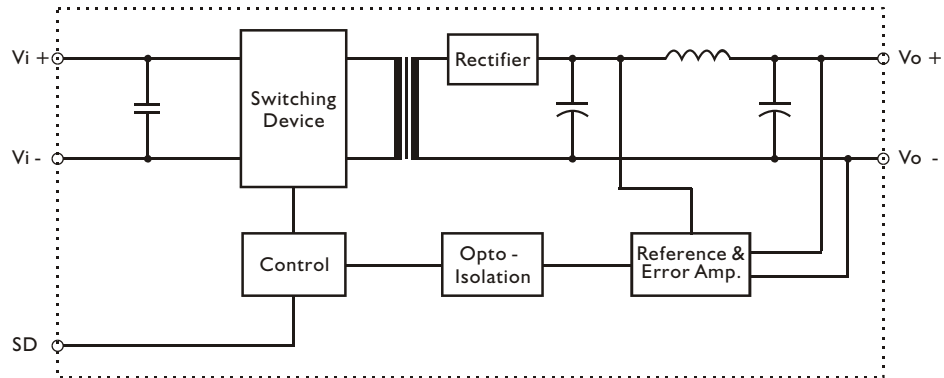
NOTE :

MAX. 80% LOAD WHEN INPUT VOLTAGE AT 9-11VDC FOR 9-36VDC INPUT MODELS & 18-21VDC FOR 18-72VDC INPUT MODELS.

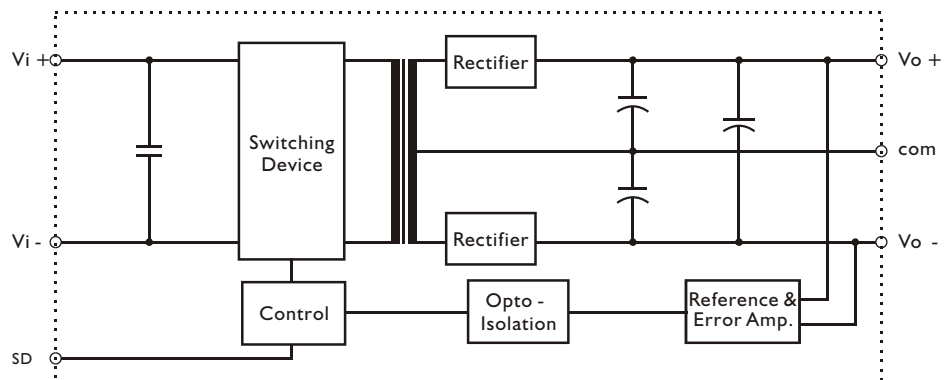


CIRCUIT SCHEMATIC

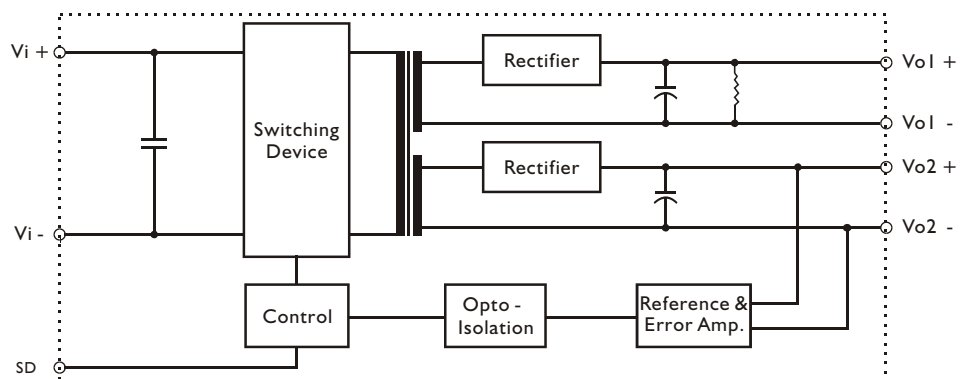
- Block diagram for FDD03A series with single output



- Block diagram for FDD03A series with dual output



- Block diagram for FDD03A series with double 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 | 50 | | | 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 |
| M.T.B.F. | According to MIL-HDBK-217F, GF40 | | 715,000 | | Hrs |
| Dimension | L20.3 x W31.8 x H12.7 | | | | 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 | | 9 | 24 | 36 | VDC |
| | | | 18 | 48 | 72 | VDC |
| No load input current | Io = 0 | 24V models | | | 12 | mA |
| | | 48V models | | | 8 | mA |
| Input voltage w/o damage | Io nom | 24V models | | | 40 | VDC |
| | | 48V models | | | 75 | VDC |

OUTPUT SPECIFICATIONS

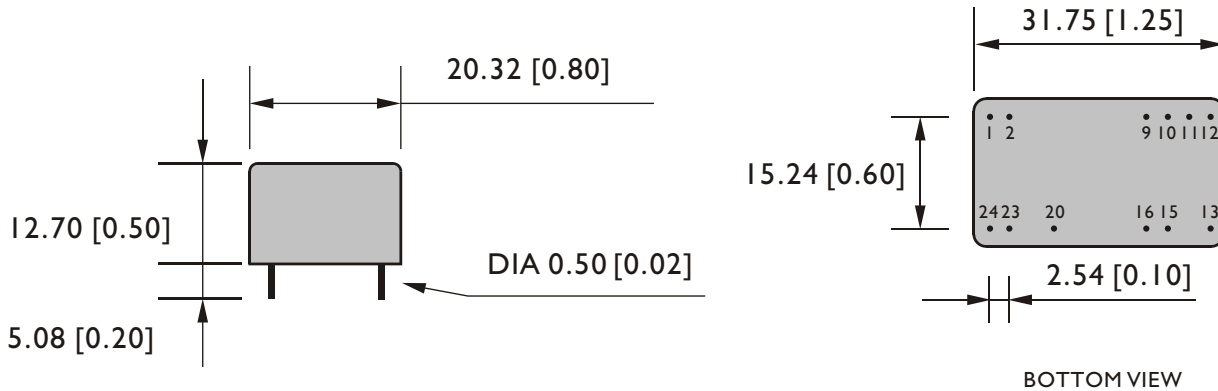
| Characteristics | Conditions | | min. | typ. | max. | unit |
|-------------------------|--|----------------------------------|---------------------------|------|--------|--------|
| Output voltage accuracy | Vi nom, Io nom | | | | ± 2 | % |
| Minimum load | Vi nom | single output models | 0 | | | % |
| | | 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

| | |
|----------------------|---|
| Remote ON / OFF | ON: opened or 5 ~ 10VDC applied, reference to input GND |
| | OFF: -0.3 ~ 2VDC applied, reference to input GND |
| Input reversed | Shunt diode built in, external fuse recommended |
| Output short circuit | Continuous |

MECHANISM & PIN CONFIGURATION

mm [inch]



PHYSICAL CHARACTERISTICS

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

PIN ASSIGNMENT

GENERAL

| PIN NO. | 1&2 | 9 | 10&11 | 12 | 13 | 15 | 16 | 20 | 23&24 |
|---------|-----|--------|--------|--------|------|--------|--------|-------|-------|
| SINGLE | Vi+ | NO PIN | NO PIN | com | Vo+ | NO PIN | NO PIN | S. D. | Vi- |
| DUAL | Vi+ | NO PIN | com | NO PIN | Vo- | Vo+ | NO PIN | S. D. | Vi- |
| DOUBLE | Vi+ | Vo1- | NO PIN | Vo1+ | Vo2+ | NO PIN | Vo2- | S. D. | Vi- |

S.D. : REMOTE ON/OFF

DERATING

