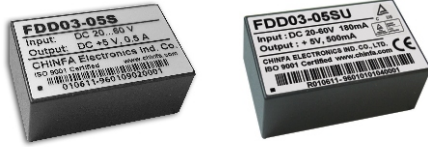


FDD03(U) SERIES

DC - DC CONVERTER
2 ~ 3W SINGLE & DUAL OUTPUT



FDD03 - 05S4 x

BLANK : w/o SAFETY APPROVALS
U : SAFETY APPROVALS

FEATURES

- EFFICIENCY UP TO 79%
- 4:1 & 3:1 & 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 3 YEARS WARRANTY



EN 60950-1

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | INPUT CURRENT | | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) | CAPACITOR LOAD (max.) |
|-----------|---------------|---------------|--------|----------------|----------------|----------------|-------------|-------------|-----------------------|
| | | (typ.) | (max.) | | | | | | |

Single Output Models

| | | | | | | | | | |
|-----------------|-----------|--------|--------|-----------|----------|--------|-----|-----|--------------|
| FDD03 - 05S(U) | 20~60 VDC | 70 mA | 180 mA | 2.5 WATTS | + 5 VDC | 500 mA | 72% | 74% | 1000 μ F |
| FDD03 - 12S(U) | 20~60 VDC | 80 mA | 200 mA | 3 WATTS | + 12 VDC | 250 mA | 77% | 79% | 470 μ F |
| FDD03 - 15S(U) | 20~60 VDC | 80 mA | 200 mA | 3 WATTS | + 15 VDC | 200 mA | 77% | 79% | 330 μ F |
| FDD03 - 05S1(U) | 9~18 VDC | 265 mA | 340 mA | 2 WATTS | + 5 VDC | 400 mA | 63% | 65% | 1000 μ F |
| FDD03 - 12S1(U) | 9~18 VDC | 310 mA | 380 mA | 2.4 WATTS | + 12 VDC | 200 mA | 65% | 67% | 470 μ F |
| FDD03 - 15S1(U) | 9~18 VDC | 285 mA | 380 mA | 2.4 WATTS | + 15 VDC | 160 mA | 65% | 67% | 330 μ F |
| FDD03 - 05S2(U) | 18~36 VDC | 155 mA | 200 mA | 2.5 WATTS | + 5 VDC | 500 mA | 67% | 69% | 1000 μ F |
| FDD03 - 12S2(U) | 18~36 VDC | 175 mA | 230 mA | 3 WATTS | + 12 VDC | 250 mA | 70% | 72% | 470 μ F |
| FDD03 - 15S2(U) | 18~36 VDC | 175 mA | 230 mA | 3 WATTS | + 15 VDC | 200 mA | 70% | 72% | 330 μ F |
| FDD03 - 05S3(U) | 36~72 VDC | 70 mA | 100 mA | 2.5 WATTS | + 5 VDC | 500 mA | 72% | 74% | 1000 μ F |
| FDD03 - 12S3(U) | 36~72 VDC | 80 mA | 110 mA | 3 WATTS | + 12 VDC | 250 mA | 77% | 79% | 470 μ F |
| FDD03 - 15S3(U) | 36~72 VDC | 80 mA | 110 mA | 3 WATTS | + 15 VDC | 200 mA | 77% | 79% | 330 μ F |
| FDD03 - 05S4(U) | 9~36 VDC | 155 mA | 440 mA | 2.5 WATTS | + 5 VDC | 500 mA | 67% | 69% | 1000 μ F |
| FDD03 - 12S4(U) | 9~36 VDC | 175 mA | 510 mA | 3 WATTS | + 12 VDC | 250 mA | 70% | 72% | 470 μ F |
| FDD03 - 15S4(U) | 9~36 VDC | 175 mA | 510 mA | 3 WATTS | + 15 VDC | 200 mA | 70% | 72% | 330 μ F |
| FDD03 - 05S5(U) | 18~72 VDC | 70 mA | 200 mA | 2.5 WATTS | + 5 VDC | 500 mA | 72% | 74% | 1000 μ F |
| FDD03 - 12S5(U) | 18~72 VDC | 80 mA | 225 mA | 3 WATTS | + 12 VDC | 250 mA | 77% | 79% | 470 μ F |
| FDD03 - 15S5(U) | 18~72 VDC | 80 mA | 225 mA | 3 WATTS | + 15 VDC | 200 mA | 77% | 79% | 330 μ F |

Dual Output Models

| | | | | | | | | | |
|-----------------|-----------|--------|--------|-----------|--------------|--------------|-----|-----|-------------------|
| FDD03 - 05D(U) | 20~60 VDC | 70 mA | 180 mA | 2.5 WATTS | \pm 5 VDC | \pm 250 mA | 73% | 75% | \pm 100 μ F |
| FDD03 - 12D(U) | 20~60 VDC | 80 mA | 200 mA | 3 WATTS | \pm 12 VDC | \pm 125 mA | 75% | 77% | \pm 47 μ F |
| FDD03 - 15D(U) | 20~60 VDC | 80 mA | 200 mA | 3 WATTS | \pm 15 VDC | \pm 100 mA | 75% | 77% | \pm 22 μ F |
| FDD03 - 05D1(U) | 9~18 VDC | 265 mA | 340 mA | 2 WATTS | \pm 5 VDC | \pm 200 mA | 63% | 65% | \pm 100 μ F |
| FDD03 - 12D1(U) | 9~18 VDC | 310 mA | 380 mA | 2.4 WATTS | \pm 12 VDC | \pm 100 mA | 65% | 67% | \pm 47 μ F |
| FDD03 - 15D1(U) | 9~18 VDC | 310 mA | 380 mA | 2.4 WATTS | \pm 15 VDC | \pm 80 mA | 65% | 67% | \pm 22 μ F |
| FDD03 - 05D2(U) | 18~36 VDC | 155 mA | 200 mA | 2.5 WATTS | \pm 5 VDC | \pm 250 mA | 66% | 68% | \pm 100 μ F |
| FDD03 - 12D2(U) | 18~36 VDC | 180 mA | 230 mA | 3 WATTS | \pm 12 VDC | \pm 125 mA | 68% | 70% | \pm 47 μ F |

FDD03(U) SERIES

SINGLE & DUAL OUTPUT

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | INPUT CURRENT | | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) | CAPACITOR LOAD (max.) |
|---------------------------|---------------|---------------|--------|----------------|----------------|----------------|-------------|-------------|-----------------------|
| | | (typ.) | (max.) | | | | | | |
| Dual Output Models | | | | | | | | | |
| FDD03 - 15D2(U) | 18~36 VDC | 180 mA | 230 mA | 3 WATTS | ± 15 VDC | ± 100 mA | 68% | 70% | ± 22 μ F |
| FDD03 - 05D3(U) | 36~72 VDC | 70 mA | 100 mA | 2.5 WATTS | ± 5 VDC | ± 250 mA | 73% | 75% | ± 100 μ F |
| FDD03 - 12D3(U) | 36~72 VDC | 80 mA | 110 mA | 3 WATTS | ± 12 VDC | ± 125 mA | 75% | 77% | ± 47 μ F |
| FDD03 - 15D3(U) | 36~72 VDC | 80 mA | 110 mA | 3 WATTS | ± 15 VDC | ± 100 mA | 75% | 77% | ± 22 μ F |
| FDD03 - 05D4(U) | 9~36 VDC | 155 mA | 440 mA | 2.5 WATTS | ± 5 VDC | ± 250 mA | 66% | 68% | ± 100 μ F |
| FDD03 - 12D4(U) | 9~36 VDC | 180 mA | 510 mA | 3 WATTS | ± 12 VDC | ± 125 mA | 68% | 70% | ± 47 μ F |
| FDD03 - 15D4(U) | 9~36 VDC | 180 mA | 510 mA | 3 WATTS | ± 15 VDC | ± 100 mA | 68% | 70% | ± 22 μ F |
| FDD03 - 05D5(U) | 18~72 VDC | 70 mA | 200 mA | 2.5 WATTS | ± 5 VDC | ± 250 mA | 73% | 75% | ± 100 μ F |
| FDD03 - 12D5(U) | 18~72 VDC | 80 mA | 225 mA | 3 WATTS | ± 12 VDC | ± 125 mA | 75% | 77% | ± 47 μ F |
| FDD03 - 15D5(U) | 18~72 VDC | 80 mA | 225 mA | 3 WATTS | ± 15 VDC | ± 100 mA | 75% | 77% | ± 22 μ F |

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 | | 100 | | | M Ω |
| Ambient temperature | Operating at Vi nom, Io nom | | -40 | | + 71 | °C |
| Case temperature | Operating at Vi nom, Io nom | | | | + 90 | °C |
| Derating | Vi nom | | See derating curve | | | |
| Storage temperature | Non operational | | -40 | | + 100 | °C |
| Relative humidity | Vi nom, Io nom | | 20 | | 95 | % RH |
| Temperature coefficient | Vi nom, Io min | | | | ± 0.02 | % / °C |
| Dimension | | | L31.8 x W20.3 x H12.7 | | | mm |
| MTBF | Bellcore issue 6@40°C, GB | | | 1,640,000 | | Hours |
| Cooling | Free air convection | | | | | |
| INPUT SPECIFICATIONS | | | | | | |
| Characteristics | Conditions | | min. | typ. | max. | unit |
| Input voltage range | Ta min ... Ta max, Io nom | 2 : 1 | 9 | 12 | 18 | VDC |
| | | | 18 | 24 | 36 | VDC |
| | | | 36 | 48 | 72 | VDC |
| | | 3 : 1 | 20 | 48 | 60 | VDC |
| | | 4 : 1 | 9 | 24 | 36 | VDC |
| | | | 18 | 48 | 72 | VDC |
| No load input current | Vi nom, Io = 0 | 12V | | | 18 | mA |
| | | 24V | | | 15 | mA |
| | | 48V | | | 8 | mA |
| Input voltage w/o damage | Io nom | 12V | | | 20 | VDC |
| | | 24V | | | 40 | VDC |
| | | 48V | | | 75 | VDC |
| Startup voltage | Io nom | 12V | | 7.2 | | VDC |
| | | 24V | | 7.2 | | VDC |
| | | 48V | | 16.1 | | 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 | | | % |

SPECIFICATION

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

OUTPUT SPECIFICATIONS

| Characteristics | Conditions | min. | typ. | max. | unit |
|-------------------------------|--|--|------|------|------|
| 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 | % |
| Cross regulation (Dual model) | Aymmetrical load 20% - 100% FL | | | ± 10 | % |
| Startup time | Vi nom, Io nom | | | 30 | ms |
| Transient recovery time | Vi nom, I ~0.5 Io nom | | | 3 | ms |
| Ripple & noise | Vi nom, Io nom, BW = 20MHz | | | 300 | mV |
| Efficiency | Vi nom, Io nom, Po / Pi | Up to 79%, See model list and efficiency curve | | | |

CONTROL AND PROTECTION

| | |
|----------------------|--|
| Input reversed | External shunt diode, external fuse recommended (12Vin : 0.75A, 24Vin : 0.75A, 48Vin : 0.5A) |
| Output short circuit | Current limited (Auto-recovery) |

APPROVALS AND STANDARD

| | |
|-----------|---|
| cTUVus | UL 60950-1 |
| TUV | EN 60950-1 |
| CE I) | EN 61204-3, EN 55032 Class B, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6, EN 61000-4-8 |
| Vibration | meet IEC 60068-2-6 (10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis) |

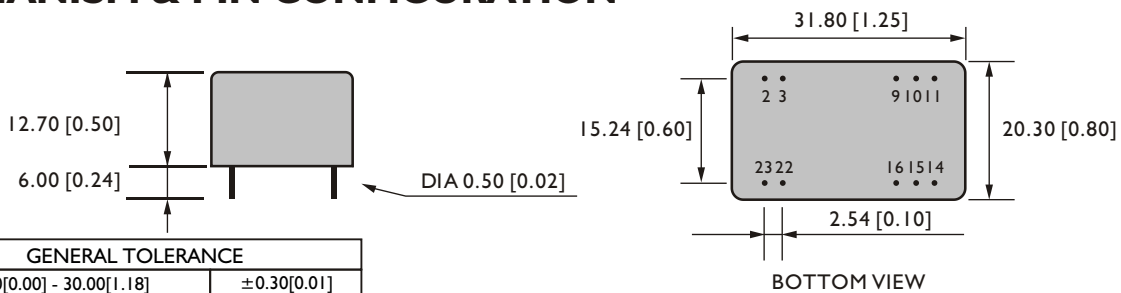
NOTE 1 : Pls refer to recommended circuit .

PHYSICAL CHARACTERISTICS

| | |
|------------------|---|
| Case size | 31.8 x 20.3 x 12.7 mm (1.25 x 0.8 x 0.5 inches) |
| Case material | Plastic |
| Weight | 15 g |
| Potting material | Epoxy |

MECHANISM & PIN CONFIGURATION

mm [inch]



| GENERAL TOLERANCE | |
|----------------------------|-------------|
| 0.00[0.00] - 30.00[1.18] | ±0.30[0.01] |
| 30.00[1.18] - 120.00[4.72] | ±0.50[0.02] |

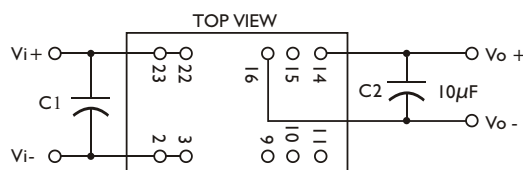
PIN ASSIGNMENT

GENERAL

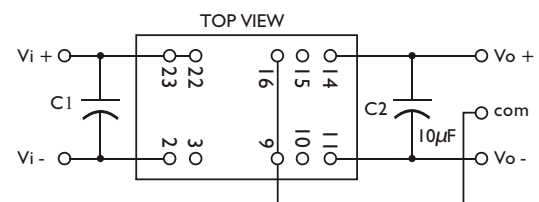
| PIN NO. | 2&3 | 9 | 10&15 | 11 | 14 | 16 | 22&23 |
|---------|------|-------|-------|-------|------|------|-------|
| SINGLE | Vi - | N. C. | N. C. | N. C. | Vo + | Vo - | Vi + |
| DUAL | Vi - | com | N. C. | Vo - | Vo + | com | Vi + |

APPLICATION CIRCUIT

a. SINGLE OUTPUT MODELS :



b. DUAL OUTPUT MODELS :



NOTE:

a. C1 = 4.7μF / 100V, C2 = 10μF

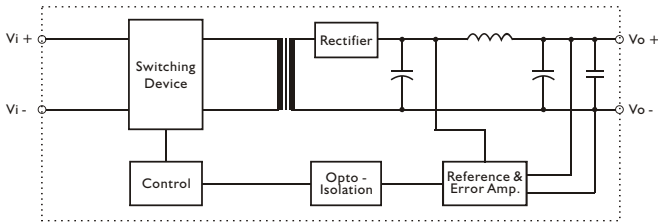
b. C1 MUST BE ADDED WHEN APPLICATION .

c. C2 OPTIONAL TO MINIMIZE THE R & N < 100mV .

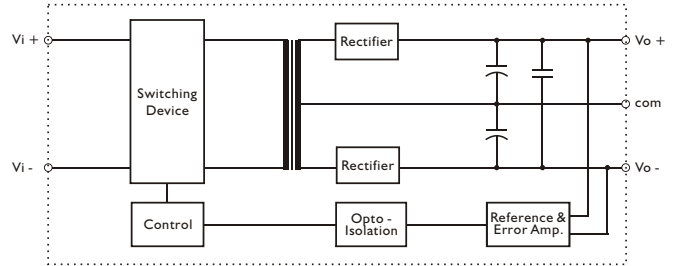
d. MAX. 80% LOAD WHEN INPUT VOLTAGE AT 9-11VDC FOR 9-36VDC INPUT MODELS & 18-21VDC FOR 18-72VDC INPUT MODELS .

CIRCUIT SCHEMATIC

• Block diagram for FDD03(U) series with single output



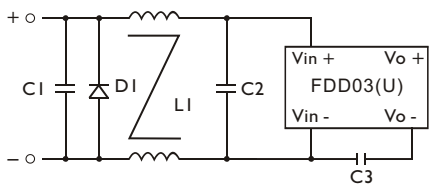
• Block diagram for FDD03(U) series with dual output



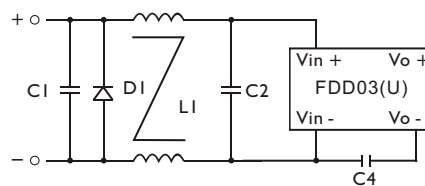
RECOMMENDED CIRCUIT

• Recommended filter for EN 55032 Class B compliance

SINGLE OUTPUT MODELS



DUAL OUTPUT MODELS

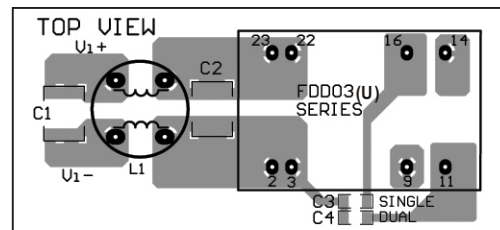


Note: D1 - Reverse Diode (1A/100V)

• The components used in the above figure, together with the manufacturer part numbers for these components, are as follows.

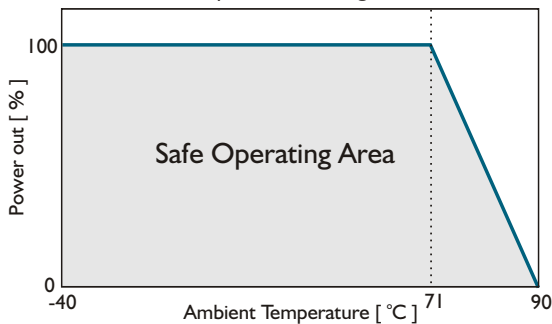
| | C1 | C2 | C3 | C4 | L1 |
|-------------------|----------------------------|----------------------------|-----------------|-----------------|------------------------|
| FDD03- XXSX(U) | 6.8 μ F / 100V MLCC | 4.7 μ F / 100V MLCC | InF/2KV MLCC | | 3mH Common Choke |
| FDD03- XXDX(U) | 6.8 μ F / 100V MLCC | 4.7 μ F / 100V MLCC | | InF/2KV MLCC | 3mH Common Choke |

• Recommended EN 55032 Class B filter circuit layout.

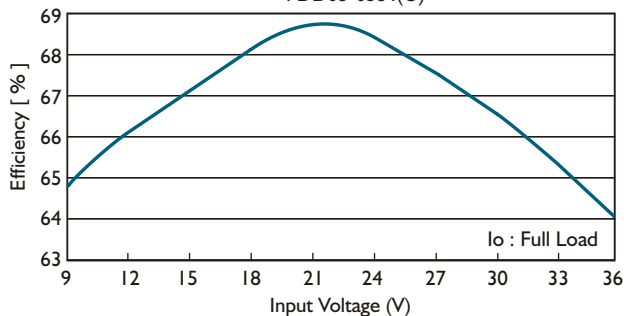


DERATING AND EFFICIENCY CURVE

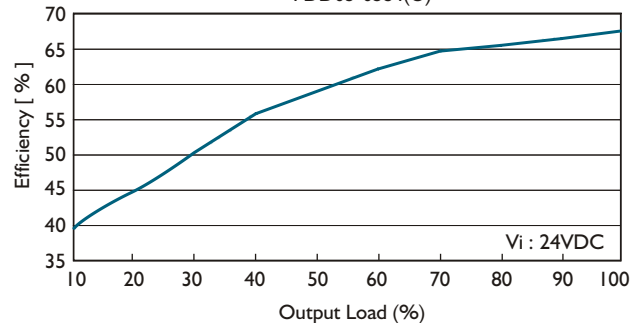
Temperature derating curve



Efficiency Vs Input Voltage
FDD03-05S4(U)



Efficiency Vs Output Load
FDD03-05S4(U)



FDD03A(U) SERIES

DC - DC CONVERTER

2.5 ~ 3W SINGLE & DUAL OUTPUT



FDD03 - 05S4A x

BLANK : w/o SAFETY APPROVALS
U : SAFETY APPROVALS

FEATURES

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



EN 60950-1

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | INPUT CURRENT (typ.) (max.) | | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) | CAPACITOR LOAD (max.) |
|-----------------------------|---------------|-------------------------------|--------|----------------|----------------|----------------|-------------|-------------|-----------------------|
| Single Output Models | | | | | | | | | |
| FDD03 - 05S4A(U) | 9~36 VDC | 160 mA | 440 mA | 2.5 WATTS | + 5 VDC | 500 mA | 65% | 67% | 1000 μ F |
| FDD03 - 12S4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | + 12 VDC | 250 mA | 68% | 70% | 470 μ F |
| FDD03 - 15S4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | + 15 VDC | 200 mA | 68% | 70% | 330 μ F |
| FDD03 - 05S5A(U) | 18~72 VDC | 75 mA | 205 mA | 2.5 WATTS | + 5 VDC | 500 mA | 70% | 72% | 1000 μ F |
| FDD03 - 12S5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | + 12 VDC | 250 mA | 75% | 77% | 470 μ F |
| FDD03 - 15S5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | + 15 VDC | 200 mA | 75% | 77% | 330 μ F |
| Dual Output Models | | | | | | | | | |
| FDD03 - 05D4A(U) | 9~36 VDC | 155 mA | 440 mA | 2.5 WATTS | \pm 5 VDC | \pm 250 mA | 66% | 68% | \pm 100 μ F |
| FDD03 - 12D4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | \pm 12 VDC | \pm 125 mA | 68% | 70% | \pm 47 μ F |
| FDD03 - 15D4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | \pm 15 VDC | \pm 100 mA | 68% | 70% | \pm 22 μ F |
| FDD03 - 05D5A(U) | 18~72 VDC | 70 mA | 205 mA | 2.5 WATTS | \pm 5 VDC | \pm 250 mA | 72% | 74% | \pm 100 μ F |
| FDD03 - 12D5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | \pm 12 VDC | \pm 125 mA | 75% | 77% | \pm 47 μ F |
| FDD03 - 15D5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | \pm 15 VDC | \pm 100 mA | 75% | 77% | \pm 22 μ F |
| Double Output Models | | | | | | | | | |
| FDD03 - 0505D4A(U) | 9~36 VDC | 160 mA | 440 mA | 2.5 WATTS | 5 / 5 VDC | 250 / 250 mA | 66% | 68% | 100 μ F |
| FDD03 - 1212D4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | 12 / 12 VDC | 125 / 125 mA | 68% | 70% | 47 μ F |
| FDD03 - 1515D4A(U) | 9~36 VDC | 180 mA | 530 mA | 3 WATTS | 15 / 15 VDC | 100 / 100 mA | 68% | 70% | 22 μ F |
| FDD03 - 0505D5A(U) | 18~72 VDC | 70 mA | 205 mA | 2.5 WATTS | 5 / 5 VDC | 250 / 250 mA | 72% | 74% | 100 μ F |
| FDD03 - 1212D5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | 12 / 12 VDC | 125 / 125 mA | 75% | 77% | 47 μ F |
| FDD03 - 1515D5A(U) | 18~72 VDC | 80 mA | 235 mA | 3 WATTS | 15 / 15 VDC | 100 / 100 mA | 75% | 77% | 22 μ F |

NOTE :

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



FDD03A(U) SERIES

SINGLE & 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 | 50 | | | KHz |
| Isolation voltage | Input - Output | 1,500 | | | VDC |
| Isolation resistance | Input - Output, @ 500VDC | 100 | | | MΩ |
| Ambient temperature | Operating at Vi nom, Io nom | -40 | | + 71 | °C |
| Case temperature | Operating at Vi nom, Io nom | | | +90 | °C |
| Derating | Vi nom | See derating curve | | | |
| Storage temperature | Non operational | -40 | | + 100 | °C |
| Relative humidity | Vi nom, Io nom | 20 | | 95 | % RH |
| Temperature coefficient | Vi nom, Io min | | | ± 0.02 | % / °C |
| Dimension | | L31.8 x W20.3 x H12.7 | | | mm |
| MTBF | Bellcore issue 6@40°C, GB | | 1,640,000 | | Hours |
| Cooling | Free air convection | | | | |

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 | Vi nom, Io = 0 | 24V | | 15 | mA |
| | | 48V | | 8 | mA |
| Input voltage w/o damage | Io nom | 24V | | 40 | VDC |
| | | 48V | | 75 | VDC |
| Startup voltage | Io nom | 24V | 7.2 | | VDC |
| | | 48V | 16.1 | | 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 | | | % |
| | Vi nom 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 | % |
| Cross regulation (Dual model) | Aymmetrical load 20% - 100% FL | | | ± 10 | % |
| Startup time | Vi nom, Io nom | | | 30 | ms |
| Transient recovery time | Vi nom, I ~ 0.5 Io nom | | | 3 | ms |
| Ripple & noise | Vi nom, Io nom, BW = 20MHz | | | 150 | mV |
| Efficiency | Vi nom, Io nom, Po / Pi | Up to 77%, See model list and efficiency curve | | | |

CONTROL AND PROTECTION

| | |
|----------------------|---|
| Remote ON / OFF | ON: opened or 5~10 VDC applied, reference to input GND OFF: -0.3~2 VDC applied, reference to input GND |
| Input reversed | External shunt diode, external fuse recommended (24Vin : 0.75A, 48Vin : 0.5A) |
| Output short circuit | Current limited (Auto-recovery) |

APPROVALS AND STANDARD

| | |
|-----------|---|
| cTUVus | UL 60950-1 |
| TUV | EN 60950-1 |
| CE I) | EN 61204-3, EN 55032 Class B, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6, EN 61000-4-8 |
| Vibration | meet IEC 60068-2-6 (10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis) |

NOTE 1 : Pls refer to recommended circuit .

FDD03A(U) SERIES

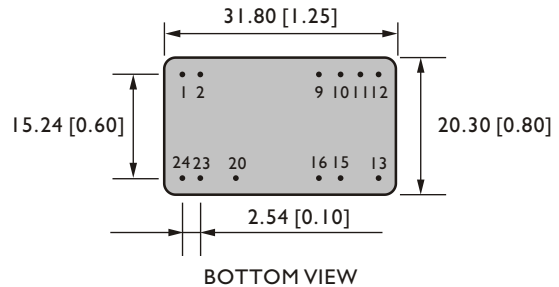
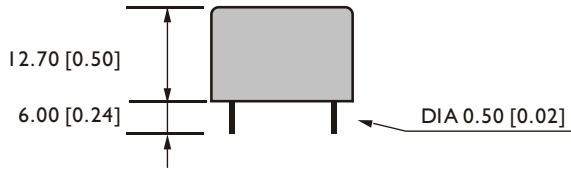
SINGLE & DUAL OUTPUT

PHYSICAL CHARACTERISTICS

| | |
|------------------|---|
| Case size | 31.8 × 20.3 × 12.7 mm (1.25 × 0.8 × 0.5 inches) |
| Case material | Plastic |
| Weight | 15 g |
| Potting material | Epoxy |

MECHANISM & PIN CONFIGURATION

mm [inch]



| GENERAL TOLERANCE | |
|----------------------------|-------------|
| 0.00[0.00] - 30.00[1.18] | ±0.30[0.01] |
| 30.00[1.18] - 120.00[4.72] | ±0.50[0.02] |

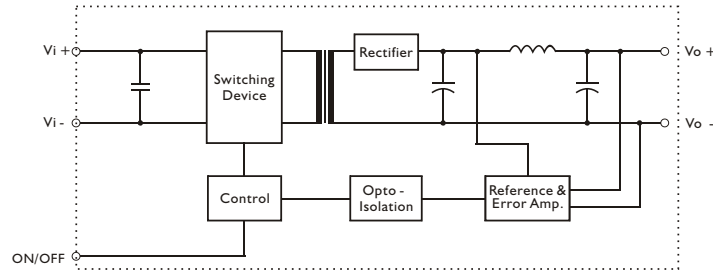
PIN ASSIGNMENT

GENERAL

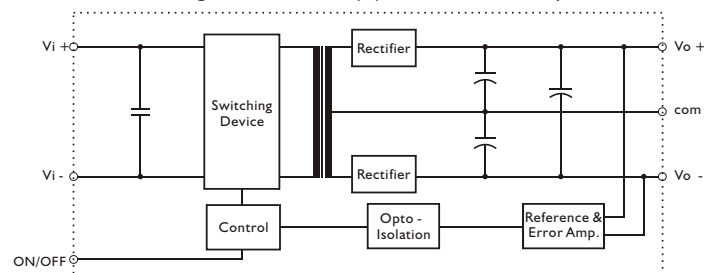
| PIN NO. | 1&2 | 9 | 10&11 | 12 | 13 | 15 | 16 | 20 | 23&24 |
|---------|-----|--------|--------|--------|------|--------|--------|--------|-------|
| SINGLE | Vi+ | NO PIN | NO PIN | Vo- | Vo+ | NO PIN | NO PIN | ON/OFF | Vi- |
| DUAL | Vi+ | NO PIN | com | NO PIN | Vo- | Vo+ | NO PIN | ON/OFF | Vi-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

CIRCUIT SCHEMATIC

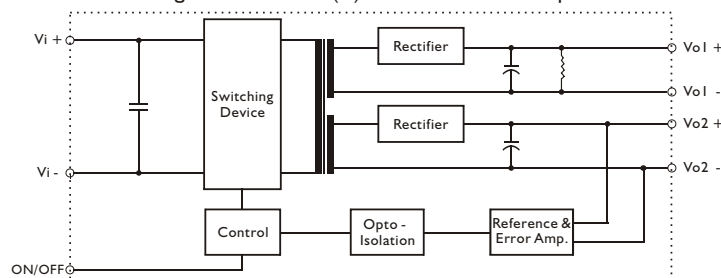
• Block diagram for FDD03A(U) series with single output



• Block diagram for FDD03A(U) series with dual output

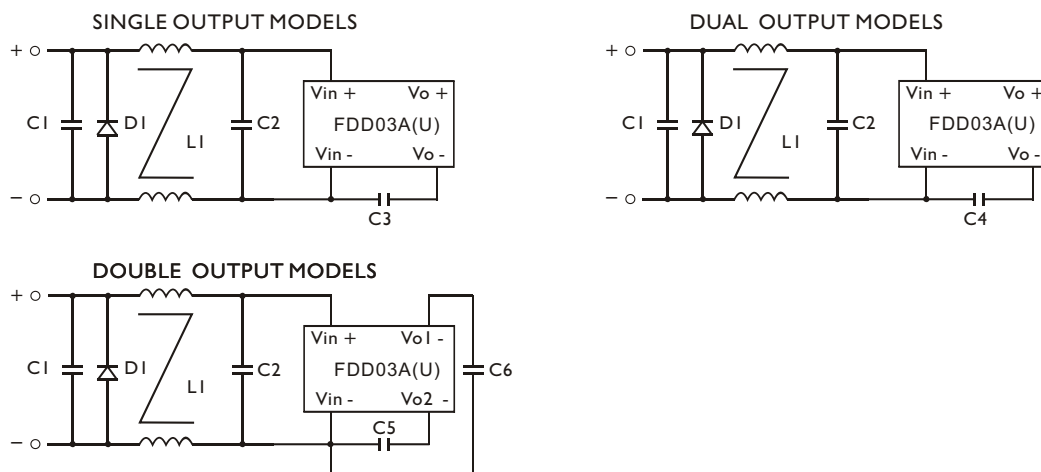


• Block diagram for FDD03A(U) series with double output



RECOMMENDED CIRCUIT

- Recommended filter for EN 55032 Class B compliance

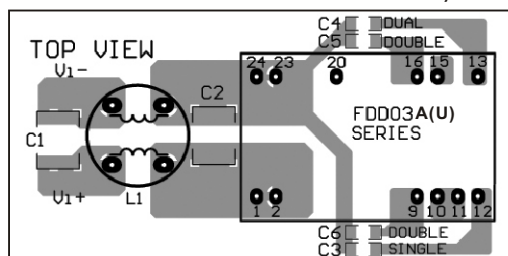


Note: D1 - Reverse Diode (1A / 100V)

- The components used in the above figure, together with the manufacturer part numbers for these components, are as follows.

| | C1 | C2 | C3 | C4 | C5 | C6 | L1 |
|-----------------|-------------------------|-------------------------|--------------|--------------|--------------|--------------|------------------|
| FDD03-XXSXA(U) | 6.8 μ F / 100V MLCC | 4.7 μ F / 100V MLCC | InF/2KV MLCC | / | / | / | 3mH Common Choke |
| FDD03-XXDXA(U) | 6.8 μ F / 100V MLCC | 4.7 μ F / 100V MLCC | / | InF/2KV MLCC | / | / | 3mH Common Choke |
| FDD03-XXXXXA(U) | 6.8 μ F / 100V MLCC | 4.7 μ F / 100V MLCC | / | / | InF/2KV MLCC | InF/2KV MLCC | 3mH Common Choke |

- Recommended EN 55032 Class B filter circuit layout.



DERATING AND EFFICIENCY CURVE

