

KDD40 SERIES



DC - DC CONVERTER

33 ~ 48W SINGLE & DUAL & TRIPLE OUTPUT

FEATURES

- 2:1 INPUT RANGE
- ISOLATION INPUT AND OUTPUT 1.5KV DC
- HIGH PERFORMANCE UP TO 84%
- SHORT CIRCUIT PROTECTION
- 2 YEARS WARRANTY

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) |
|-----------------------------|---------------|----------------|----------------|-----------------|-------------|
| Single Output Models | | | | | |
| KDD40 - 12S01 | 9~18 VDC | 40 WATTS | + 5 VDC | 8000 mA | 75% |
| KDD40 - 12S02 | 9~18 VDC | 42 WATTS | + 12 VDC | 3500 mA | 78% |
| KDD40 - 12S03 | 9~18 VDC | 45 WATTS | + 15 VDC | 3000 mA | 79% |
| KDD40 - 12S04 | 9~18 VDC | 48 WATTS | + 24 VDC | 2000 mA | 80% |
| KDD40 - 12S05 | 9~18 VDC | 33 WATTS | +3.3 VDC | 10000 mA | 73% |
| KDD40 - 24S01 | 18~36 VDC | 40 WATTS | + 5 VDC | 8000 mA | 79% |
| KDD40 - 24S02 | 18~36 VDC | 42 WATTS | + 12 VDC | 3500 mA | 81% |
| KDD40 - 24S03 | 18~36 VDC | 45 WATTS | + 15 VDC | 3000 mA | 81% |
| KDD40 - 24S04 | 18~36 VDC | 48 WATTS | + 24 VDC | 2000 mA | 81% |
| KDD40 - 24S05 | 18~36 VDC | 33 WATTS | +3.3 VDC | 10000 mA | 77% |
| KDD40 - 48S01 | 36~72 VDC | 40 WATTS | + 5 VDC | 8000 mA | 79% |
| KDD40 - 48S02 | 36~72 VDC | 42 WATTS | + 12 VDC | 3500 mA | 81% |
| KDD40 - 48S03 | 36~72 VDC | 45 WATTS | + 15 VDC | 3000 mA | 82% |
| KDD40 - 48S04 | 36~72 VDC | 48 WATTS | + 24 VDC | 2000 mA | 84% |
| KDD40 - 48S05 | 36~72 VDC | 33 WATTS | +3.3 VDC | 10000 mA | 77% |
| Dual Output Models | | | | | |
| KDD40 - 12D01 | 9~18 VDC | 37.5 WATTS | ± 5 VDC | +7000 / -500 mA | 75% |
| KDD40 - 12D02 | 9~18 VDC | 42 WATTS | ± 12 VDC | +3000 / -500 mA | 78% |
| KDD40 - 12D03 | 9~18 VDC | 37.5 WATTS | ± 15 VDC | +2000 / -500 mA | 79% |
| KDD40 - 24D01 | 18~36 VDC | 42.5 WATTS | ± 5 VDC | +8000 / -500 mA | 77% |
| KDD40 - 24D02 | 18~36 VDC | 42 WATTS | ± 12 VDC | +3000 / -500 mA | 78% |
| KDD40 - 24D03 | 18~36 VDC | 37.5 WATTS | ± 15 VDC | +2000 / -500 mA | 80% |
| KDD40 - 48D01 | 36~72 VDC | 42.5 WATTS | ± 5 VDC | +8000 / -500 mA | 79% |
| KDD40 - 48D02 | 36~72 VDC | 42 WATTS | ± 12 VDC | +3000 / -500 mA | 81% |
| KDD40 - 48D03 | 36~72 VDC | 37.5 WATTS | ± 15 VDC | +2000 / -500 mA | 82% |



MODEL LIST

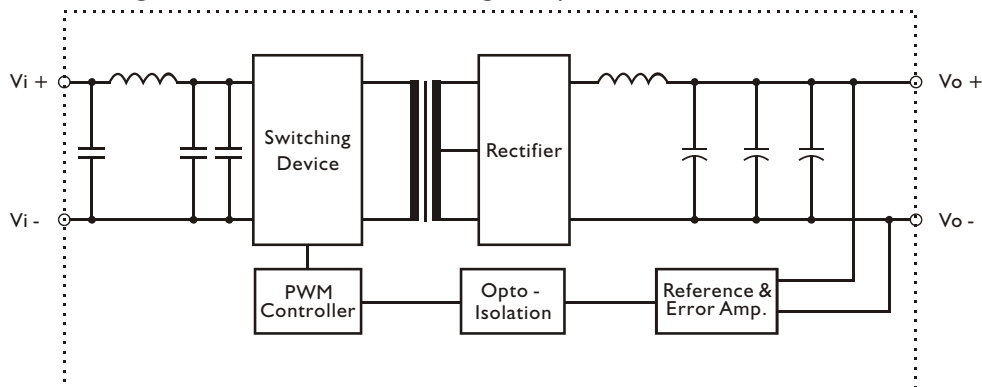
| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) |
|-----------|---------------|----------------|----------------|----------------|-------------|
|-----------|---------------|----------------|----------------|----------------|-------------|

Triple Output Models

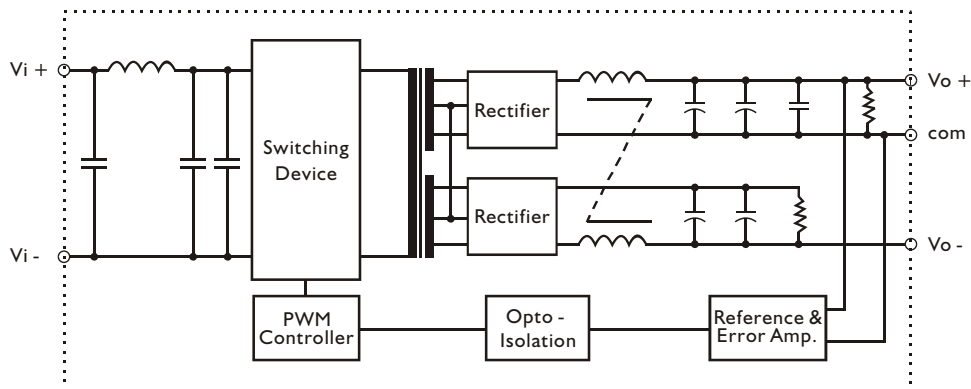
| | | | | | |
|---------------|-----------|------------|------------------|----------------------|-----|
| KDD40 - 12T01 | 9~18 VDC | 42 WATTS | +5V / $\pm 12V$ | +6000 / ± 500 mA | 76% |
| KDD40 - 12T02 | 9~18 VDC | 45 WATTS | +5V / $\pm 15V$ | +6000 / ± 500 mA | 77% |
| KDD40 - 24T01 | 18~36 VDC | 42 WATTS | +5V / $\pm 12V$ | +6000 / ± 500 mA | 77% |
| KDD40 - 24T02 | 18~36 VDC | 45 WATTS | +5V / $\pm 15V$ | +6000 / ± 500 mA | 78% |
| KDD40 - 24T03 | 18~36 VDC | 38.5 WATTS | +5V / +12V / -5V | +6A / +0.5A / -0.5A | 78% |
| KDD40 - 48T01 | 36~72 VDC | 42 WATTS | +5V / $\pm 12V$ | +6000 / ± 500 mA | 78% |
| KDD40 - 48T02 | 36~72 VDC | 45 WATTS | +5V / $\pm 15V$ | +6000 / ± 500 mA | 79% |
| KDD40 - 48T03 | 36~72 VDC | 38.5 WATTS | +5V / +12V / -5V | +6A / +0.5A / -0.5A | 79% |

CIRCUIT SCHEMATIC

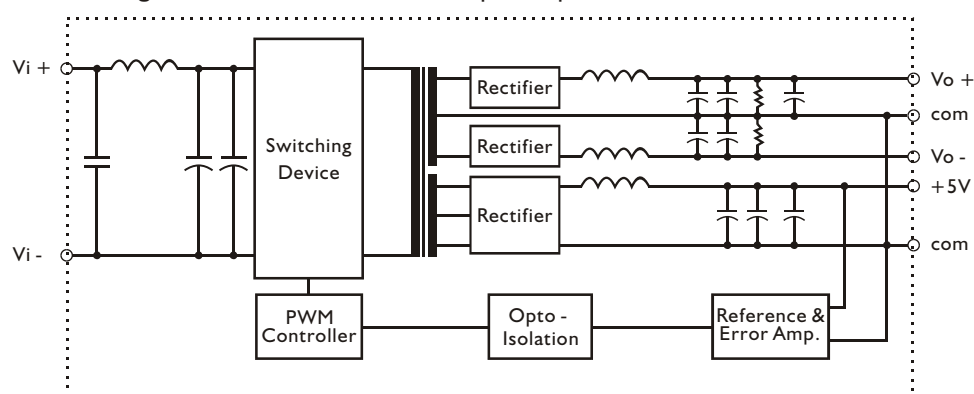
• Block diagram for KDD40 series with single output



• Block diagram for KDD40 series with dual output



• Block diagram for KDD40 series with triple 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 | | + 90 | °C |
| M.T.B.F. | According to MIL-HDBK-217F, GF40 | | 389,000 | | Hrs |
| Dimension | L70 x W100 x H23 | | | | mm |
| Cooling | Free air convection | | | | |
| Case material | Metal | | | | |

INPUT SPECIFICATIONS

| Characteristics | Conditions | min. | typ. | max. | unit |
|--------------------------|---------------------------|------------|------|------|------|
| Input voltage range | Ta min ... Ta max, Io nom | 9 | 12 | 18 | VDC |
| | | 18 | 24 | 36 | VDC |
| | | 36 | 48 | 72 | VDC |
| No load input current | Vi nom, Io=0 | 12V models | | 35 | mA |
| | | 24V models | | 30 | mA |
| | | 48V models | | 25 | mA |
| Input voltage w/o damage | Io nom | 12V models | | 21 | 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 | single output models | | ± 1 | % |
| | | dual & triple output models | | ± 2 | % |
| | | -5V of triple output | | ± 3 | % |
| Minimum load | Vi nom | single output models | 0 | | % |
| | | dual & triple (each output) | 20 | | % |
| Line regulation | Io nom, Vi min ... Vi max | | | ± 1 | % |
| Load regulation | Vi nom Io min ... Io max | single output models | | ± 2 | % |
| | | Vo+ of dual output models | | ± 2 | % |
| | | Vo- of dual output models | | ± 5 | % |
| | | +5V of triple output | | ± 2 | % |
| | | slave of triple output | | ± 5 | % |
| Transient recovery time | 25% load, step changed | | 500 | | μS |
| Temperature coefficient | Vi nom, Io nom | | | ± 0.02 | % / °C |
| Ripple & noise | Vi nom, Io nom, BW = 20MHz | | | Vout x ± 1% | mV |
| | -5V of triple output | | | 150 | mV |
| Efficiency | Vi nom, Io nom, Po / Pi | Up to 84%, See model list | | | |

SPECIFICATION

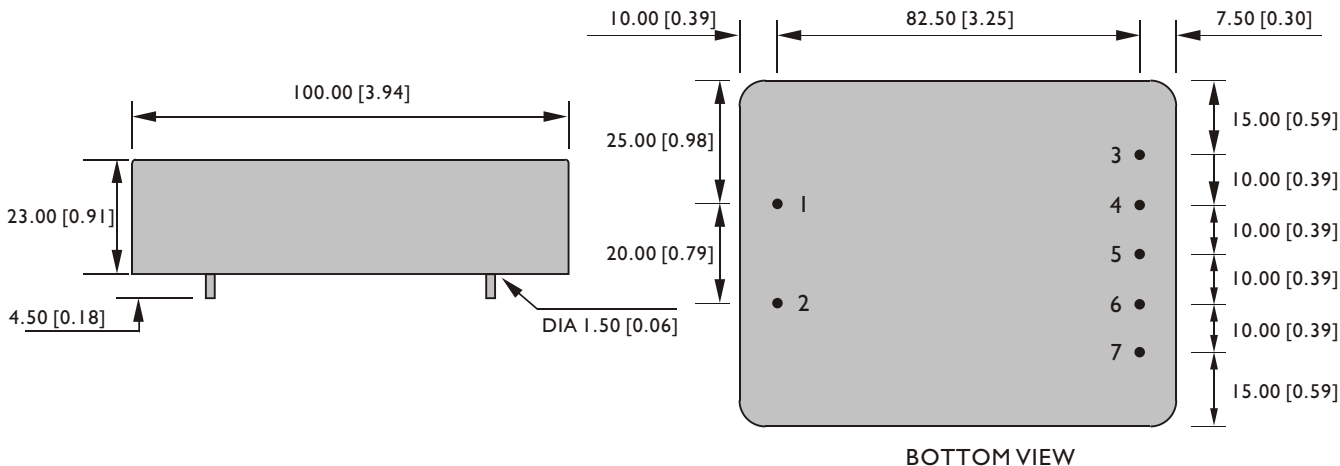
All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

CONTROL AND PROTECTION

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

MECHANISM & PIN CONFIGURATION

mm [inch]



BOTTOM VIEW

PHYSICAL CHARACTERISTICS

| | |
|---------------|--|
| CASE SIZE | 70 x 100 x 23 mm 2.76 x 3.94 x 0.91 inches |
| CASE MATERIAL | Metal |
| WEIGHT | 270 g |

PIN ASSIGNMENT

GENERAL

| PIN NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------|-----|-----|---------|-----|-----|-----|-------|
| SINGLE | Vi+ | Vi- | Vo+ | Vo+ | Vo- | Vo- | N. C. |
| DUAL | Vi+ | Vi- | Vo+ | Vo+ | com | com | Vo- |
| TRIPLE | Vi+ | Vi- | +5V OUT | com | Vo+ | com | Vo- |

DERATING

