

# KDD25 SERIES



DC - DC CONVERTER  
21.5 ~ 25W SINGLE & DUAL OUTPUT

## FEATURES

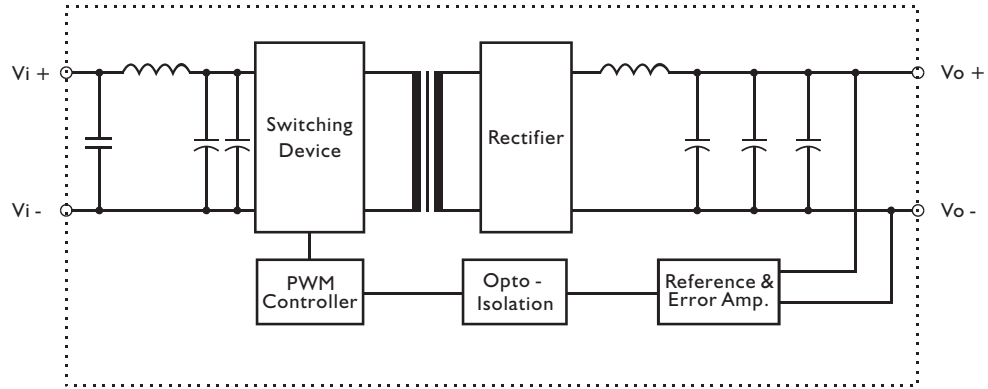
- 2:1 INPUT RANGE
- ISOLATION INPUT AND OUTPUT 1.5KV DC
- HIGH PERFORMANCE UP TO 84%
- SHORT CIRCUIT PROTECTION
- 2 YEARS WARRANTY

## MODEL LIST

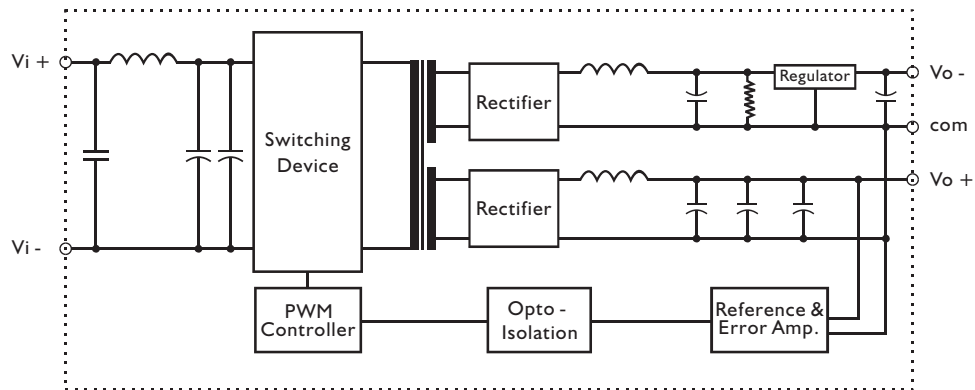
| MODEL NO.                   | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) |
|-----------------------------|---------------|----------------|----------------|----------------|-------------|
| <b>Single Output Models</b> |               |                |                |                |             |
| KDD25 - 12S01               | 9~18 VDC      | 25 WATTS       | + 5 VDC        | 5000 mA        | 77%         |
| KDD25 - 12S02               | 9~18 VDC      | 25 WATTS       | + 12 VDC       | 2100 mA        | 80%         |
| KDD25 - 12S03               | 9~18 VDC      | 25 WATTS       | + 15 VDC       | 1700 mA        | 80%         |
| KDD25 - 12S05               | 9~18 VDC      | 21.5 WATTS     | +3.3 VDC       | 6500 mA        | 75%         |
| KDD25 - 24S01               | 18~36 VDC     | 25 WATTS       | + 5 VDC        | 5000 mA        | 79%         |
| KDD25 - 24S02               | 18~36 VDC     | 25 WATTS       | + 12 VDC       | 2100 mA        | 81%         |
| KDD25 - 24S03               | 18~36 VDC     | 25 WATTS       | + 15 VDC       | 1700 mA        | 81%         |
| KDD25 - 24S05               | 18~36 VDC     | 21.5 WATTS     | +3.3 VDC       | 6500 mA        | 77%         |
| KDD25 - 48S01               | 36~72 VDC     | 25 WATTS       | + 5 VDC        | 5000 mA        | 80%         |
| KDD25 - 48S02               | 36~72 VDC     | 25 WATTS       | + 12 VDC       | 2100 mA        | 83%         |
| KDD25 - 48S03               | 36~72 VDC     | 25 WATTS       | + 15 VDC       | 1700 mA        | 83%         |
| KDD25 - 48S05               | 36~72 VDC     | 21.5 WATTS     | +3.3 VDC       | 6500 mA        | 78%         |
| <b>Dual Output Models</b>   |               |                |                |                |             |
| KDD25 - 12D01               | 9~18 VDC      | 25 WATTS       | ± 5 VDC        | +4700/-300 mA  | 77%         |
| KDD25 - 12D02               | 9~18 VDC      | 25 WATTS       | ± 12 VDC       | +1800/-300 mA  | 80%         |
| KDD25 - 12D03               | 9~18 VDC      | 25 WATTS       | ± 15 VDC       | +1400/-300 mA  | 80%         |
| KDD25 - 24D01               | 18~36 VDC     | 25 WATTS       | ± 5 VDC        | +4700/-300 mA  | 79%         |
| KDD25 - 24D02               | 18~36 VDC     | 25 WATTS       | ± 12 VDC       | +1800/-300 mA  | 81%         |
| KDD25 - 24D03               | 18~36 VDC     | 25 WATTS       | ± 15 VDC       | +1400/-300 mA  | 81%         |
| KDD25 - 48D01               | 36~72 VDC     | 25 WATTS       | ± 5 VDC        | +4700/-300 mA  | 80%         |
| KDD25 - 48D02               | 36~72 VDC     | 25 WATTS       | ± 12 VDC       | +1800/-300 mA  | 83%         |
| KDD25 - 48D03               | 36~72 VDC     | 25 WATTS       | ± 15 VDC       | +1400/-300 mA  | 83%         |

### CIRCUIT SCHEMATIC

- Block diagram for KDD25 series with single output



- Block diagram for KDD25 series with 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              |                    | 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                |      | + 100 | °C     |
| Dimension            | L70 x W70 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 | 19         | 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 |      | 20   | VDC  |
|                          |                           | 24V models |      | 40   | VDC  |
|                          |                           | 48V models |      | 75   | VDC  |
| Input filter             | Pi type                   |            |      |      |      |

#### OUTPUT SPECIFICATIONS

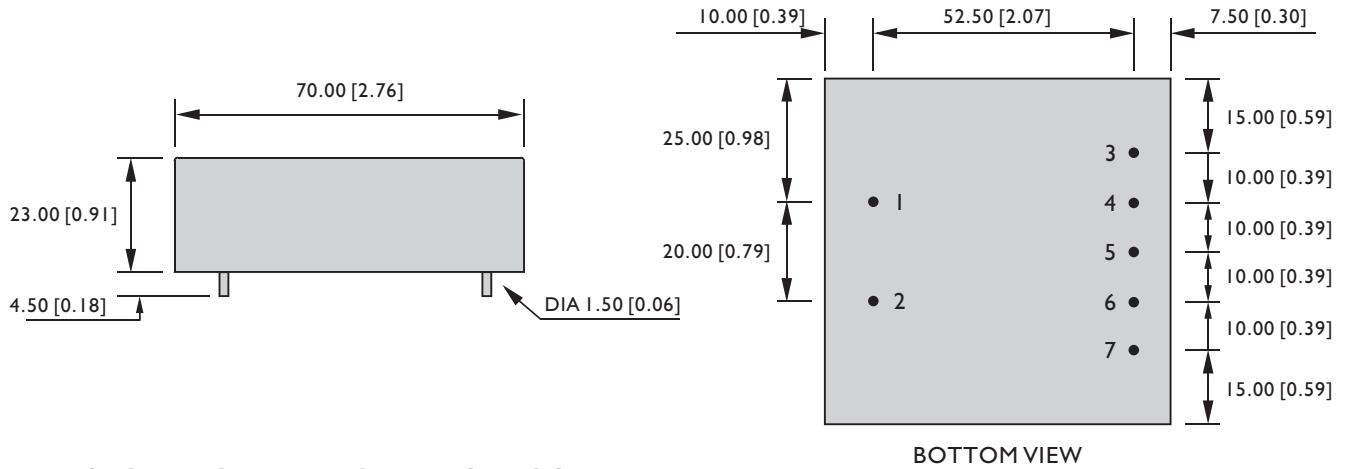
| Characteristics         | Conditions                                    | min.                      | typ. | max.        | unit   |
|-------------------------|---|---------------------------|------|-------------|--------|
| Output voltage accuracy | Vi nom, Io nom                                |                           |      | ± 1         | %      |
| Minimum load            | Vi nom  | 0                         |      |             | %      |
|                         | single output models                          |                           |      |             |        |
|                         | 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         | %      |
| 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 ± 2% | mV     |
| Efficiency              | Vi nom, Io nom, Po / Pi                       | Up to 83%, See model list |      |             |        |

#### CONTROL AND PROTECTION

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

### MECHANISM & PIN CONFIGURATION

mm [inch]



### PHYSICAL CHARACTERISTICS

|               |   |
|---------------|---|
| CASE SIZE     | 70 x 70 x 23 mm 2.76 x 2.76 x 0.91 inches |
| CASE MATERIAL | Metal                                     |
| WEIGHT        | 180 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-   |

### DERATING

