

# NON-ISOLATED DC/DC CONVERTERS

8.3 Vdc - 14 Vdc Input

0.75 Vdc - 5.0 Vdc/10 A Output

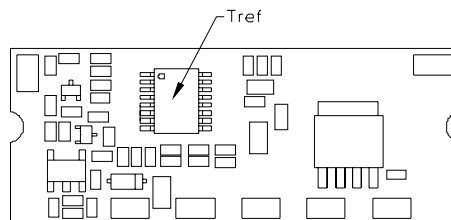


## General Specifications

| Parameter                              | Min                  | Typ     | Max     | Notes  |
|--|----------------------|---------|---------|--|
| Efficiency                             |                      |         |         | Measured at Vin=12 V, full load  |
| Vo=5.0 V                               | -                    | 95%     | -       |  |
| Vo=3.3 V                               | -                    | 93%     | -       |  |
| Vo=2.5 V                               | -                    | 92%     | -       |  |
| Vo=1.8 V                               | -                    | 90%     | -       |  |
| Vo=1.5 V                               | -                    | 89%     | -       |  |
| Vo=1.2 V                               | -                    | 87.5%   | -       |  |
| Vo=0.75 V                              | -                    | 81%     | -       |  |
| Switching Frequency                    | 265 kHz              | 300 kHz | 335 kHz |  |
| Over Temperature Shutdown <sup>1</sup> | -                    | 130 °C  | -       |  |
| Output Voltage Trim Range              | 0.7525 V             | -       | 5.0 V   |  |
| Remote Sense Compensation              | -                    | -       | 0.5 V   |  |
| MTBF                                   | 4,982,651 hours      |         |         | Calculated Per Bell Core SR-332 (Io = 80% load; Vo=5 V; Vin=12 V; Ta = 25°C) |
| Dimensions                             |                      |         |         |  |
| Inches (L x W x H)                     | 1.3 x 0.53 x 0.315   |         |         |  |
| Millimeters (L x W x H)                | 33.02 x 13.46 x 8.00 |         |         |  |
| Weight                                 | -                    | 8 g     | -       |  |

**Notes:** All specifications are typical at 25 °C unless otherwise stated.

1. The Tref temperature measurement location:



## Control Specifications

| Parameter                       | Min    | Typ    | Max      | Notes  |
|---------------------------------|--------|--------|----------|--|
| <b>Remote On/Off</b>            |        |        |          |  |
| Signal Low (Unit Off)           | -0.2 V | -      | 0.3 V    | SRBC-10A2A0; Remote On/Off pin open, Unit on.            |
| Signal High (Unit On)           | -      | -      | Vin, max |  |
| Signal Low (Unit On)            | -0.2 V | -      | 0.3 V    | SRBC-10A2AL; Remote On/Off pin open, Unit on.            |
| Signal High (Unit Off)          | 2.5 V  | -      | Vin, max |  |
| <b>Voltage Sequencing</b>       |        |        |          |  |
| Sequencing Delay Time           | 10 mS  | -      | -        | Delay from Vin, min to application of voltage on SEQ pin |
| Sequencing Slew Rate Capability | -      | -      | 2 V/mS   | Vinmin to Vinmax; Iomin to Iomax; Vseq<Vo                |
| Tracking Accuracy               |        |        |          |  |
| Power-Up                        | -      | 100 mV | 200 mV   |  |
| Power-Down                      | -      | 300 mV | 500 mV   |  |

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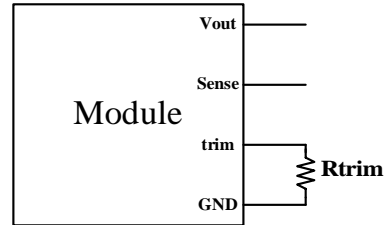
0.75 Vdc - 5.0 Vdc/10 A Output



## Output Trim Equations

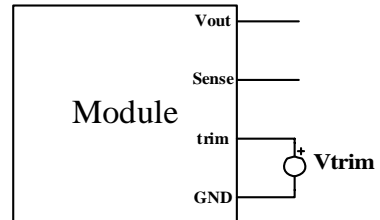
Equation for calculating the trim resistor (in  $\Omega$ ) given the desired adjusted voltage ( $V_{adj}$ ) is shown below. The Trim Up resistor should be connected between the Trim pin and Ground.

$$R_{trimup} = \frac{10500}{V_{adj} - 0.7525} - 1000$$

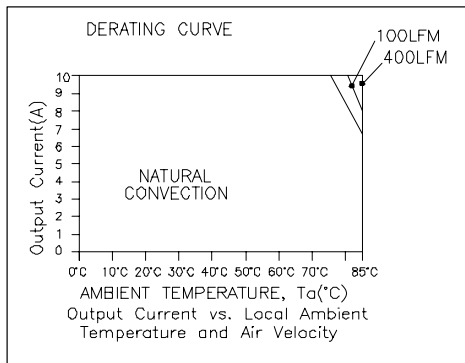


Equation for calculating the trim voltage (in V) given the desired adjusted voltage ( $V_{adj}$ ) is shown below. The Trim Up voltage should be connected between the Trim pin and Ground.

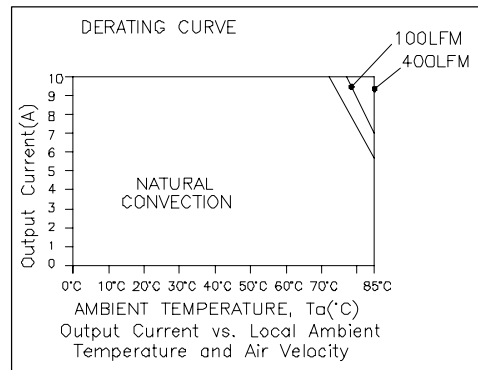
$$V_{trimup} = 0.7 - 0.0667 \times (V_{adj} - 0.7525)$$



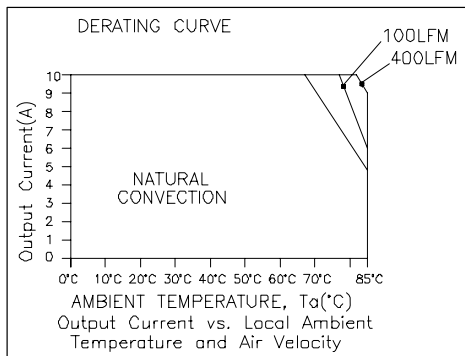
## Thermal Derating Curves



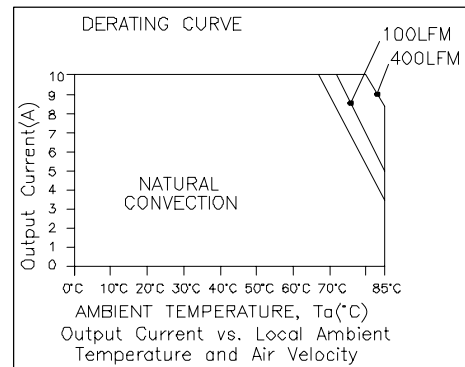
$V_o=0.75$  V



$V_o=1.8$  V



$V_o=3.3$  V



$V_o=5.0$  V