

## ERM Series

10 Watts

### Data Sheet

**Total Power:** 10 Watts  
**Input Voltage:** 12 V, 24 V, 48 V,  
 72 V or 110 V  
**# of Outputs:** Single, Dual

### SPECIAL FEATURES

- Encapsulated
- Wide 4:1 input range
- 1" x 2" DIP package
- 3000 Vac rms I/O isolation
- Single and dual output
- OCP, OVP, OTP protection
- Remote On/Off
- High efficiency: 88%
- Fire protection meets EN45545-2
- Railway EMC standard EN50121-3-2

### SAFETY

- UL/cUL 62368-1 (60950-1)
- IEC/EN 62368-1 (60950-1)
- IEC/EN 50155 (IEC60571)



### Electrical Specifications

| Input                    |  |
|--------------------------|--|
| Input range              | 9 to 36 Vdc; 18 to 75 Vdc; 40 to 160 Vdc |
| Efficiency <sup>2</sup>  | 88% @ 24 Vo                              |
| Output                   |  |
| Voltage tolerance        | ±1.0%                                    |
| Line regulation          | ±0.2%                                    |
| Load regulation          | Single output: ±0.5%; Dual output ±1.0%  |
| Noise/ripple             | 150 mV                                   |
| OCP and S/C protection   | Hiccup                                   |
| Overvoltage protection   | Latched                                  |
| Switching frequency      | 320 KHz                                  |
| Temperature co-efficient | ±0.02 /°C                                |
| Isolation                |  |
| I/O isolation            | 3000 Vac rms min.                        |
| Insulation resistance    | 1000 Mohm                                |
| Insulation capacitance   | 1500 pF                                  |

### Environmental Specifications

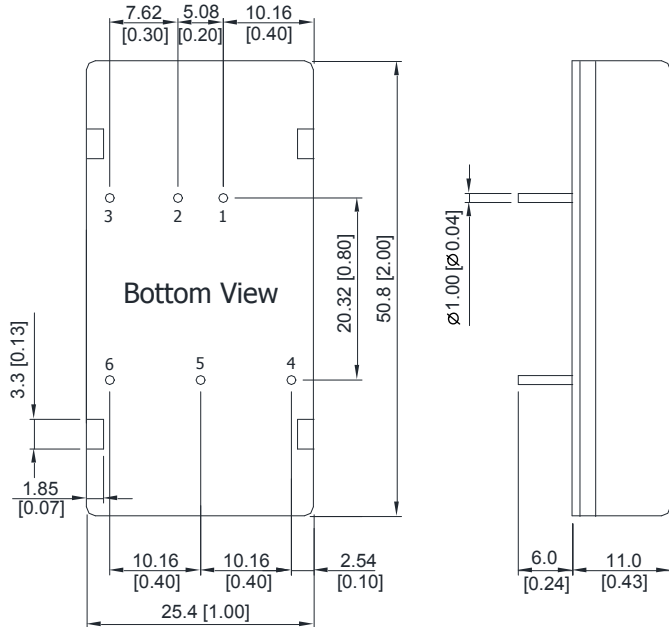
|                                     |                                  |
|-------------------------------------|----------------------------------|
| Operating ambient temperature range | -40 °C to +85 °C (with derating) |
| Storage temperature                 | -50 °C to +125 °C                |
| Humidity                            | 5% to 95% (non-condensing)       |

## Ordering Information

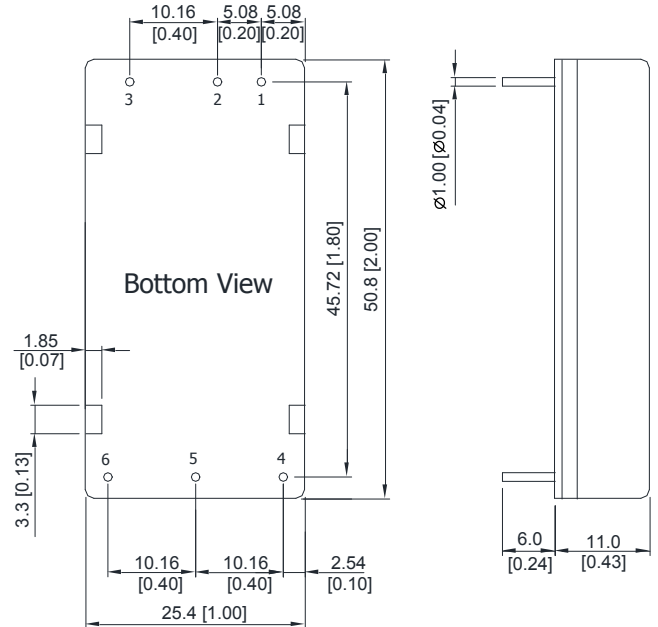
| Model Number | Input Voltage | Output           | Efficiency @ Max Load | Max Power |
|--------------|---------------|------------------|-----------------------|-----------|
| ERM02A18     | 9 - 36 Vin    | 5 V @ 2 A        | 84%                   | 10 W      |
| ERM00B18     | 9 - 36 Vin    | 12 V @ 0.835 A   | 86%                   | 10 W      |
| ERM00C18     | 9 - 36 Vin    | 15 V @ 0.67 A    | 87%                   | 10 W      |
| ERM00H18     | 9 - 36 Vin    | 24 V @ 0.417 A   | 88%                   | 10 W      |
| ERM00BB18    | 9 - 36 Vin    | ± 12 V @ 0.417 A | 86%                   | 10 W      |
| ERM00CC18    | 9 - 36 Vin    | ± 15 V @ 0.335 A | 87%                   | 10 W      |
| ERM02A36     | 18 - 75 Vin   | 5 V @ 2 A        | 85%                   | 10 W      |
| ERM00B36     | 18 - 75 Vin   | 12 V @ 0.83 A    | 87%                   | 10 W      |
| ERM00C36     | 18 - 75 Vin   | 15 V @ 0.67 A    | 87%                   | 10 W      |
| ERM00H36     | 18 - 75 Vin   | 24 V @ 0.41 A    | 86%                   | 10 W      |
| ERM00BB36    | 18 - 75 Vin   | ± 12 V @ 0.417 A | 89%                   | 10 W      |
| ERM00CC36    | 18 - 75 Vin   | ± 15 V @ 0.335 A | 88%                   | 10 W      |
| ERM02A110    | 40 - 160 Vin  | 5 V @ 2 A        | 82%                   | 10 W      |
| ERM00B110    | 40 - 160 Vin  | 12 V @ 0.83 A    | 85%                   | 10 W      |
| ERM00C110    | 40 - 160 Vin  | 15 V @ 0.67 A    | 85%                   | 10 W      |
| ERM00H110    | 40 - 160 Vin  | 24 V @ 0.41 A    | 85%                   | 10 W      |
| ERM00BB110   | 40 - 160 Vin  | ± 12 V @ 0.417 A | 86%                   | 10 W      |
| ERM00CC110   | 40 - 160 Vin  | ± 15 V @ 0.335 A | 86%                   | 10 W      |
| ERM02A18B    | 9 - 36 Vin    | 5 V @ 2 A        | 84%                   | 10 W      |
| ERM00B18B    | 9 - 36 Vin    | 12 V @ 0.83 A    | 86%                   | 10 W      |
| ERM00C18B    | 9 - 36 Vin    | 15 V @ 0.67 A    | 87%                   | 10 W      |
| ERM00H18B    | 9 - 36 Vin    | 24 V @ 0.41 A    | 88%                   | 10 W      |
| ERM00BB18B   | 9 - 36 Vin    | ± 12 V @ 0.417 A | 86%                   | 10 W      |
| ERM00CC18B   | 9 - 36 Vin    | ± 15 V @ 0.335 A | 87%                   | 10 W      |
| ERM02A36B    | 18 - 75 Vin   | 5 V @ 2 A        | 85%                   | 10 W      |
| ERM00B36B    | 18 - 75 Vin   | 12 V @ 0.83 A    | 87%                   | 10 W      |
| ERM00C36B    | 18 - 75 Vin   | 15 V @ 0.67 A    | 87%                   | 10 W      |
| ERM00H36B    | 18 - 75 Vin   | 24 V @ 0.41 A    | 86%                   | 10 W      |
| ERM00BB36B   | 18 - 75 Vin   | ± 12 V @ 0.417 A | 89%                   | 10 W      |
| ERM00CC36B   | 18 - 75 Vin   | ± 15 V @ 0.335 A | 88%                   | 10 W      |
| ERM02A110B   | 40 - 160 Vin  | 5 V @ 2 A        | 82%                   | 10 W      |
| ERM00B110B   | 40 - 160 Vin  | 12 V @ 0.83 A    | 85%                   | 10 W      |
| ERM00C110B   | 40 - 160 Vin  | 15 V @ 0.67 A    | 85%                   | 10 W      |
| ERM00H110B   | 40 - 160 Vin  | 24 V @ 0.41 A    | 85%                   | 10 W      |
| ERM00BB110B  | 40 - 160 Vin  | ± 12 V @ 0.417 A | 86%                   | 10 W      |
| ERM00CC110B  | 40 - 160 Vin  | ± 15 V @ 0.335 A | 86%                   | 10 W      |

Mechanical Drawings

ERMxxxxx Models



ERMxxxxxB Models



Pin Connectors - ERMxxxxx Models

| Pin No. | Single Output | Dual Output   |
|---------|---------------|---------------|
| 1       | +Vin          | +Vin          |
| 2       | -Vin          | -Vin          |
| 3       | Remote On/Off | Remote On/Off |
| 4       | +Vout         | +Vout         |
| 5       | Trim          | Common        |
| 6       | -Vout         | -Vout         |

Pin Connectors - ERMxxxxxB Models

| Pin No. | Single Output | Dual Output   |
|---------|---------------|---------------|
| 1       | +Vin          | +Vin          |
| 2       | -Vin          | -Vin          |
| 3       | Remote On/Off | Remote On/Off |
| 4       | +Vout         | +Vout         |
| 5       | -Vout         | Common        |
| 6       | Trim          | -Vout         |

T: 11.0 mm (0.43 inch) for 24 V Output Models  
 T: 10.2 mm (0.40 inch) for Other Output Models

- All dimensions in mm (inches)
- Tolerance: X.X±0.75 (X.XX±0.03)  
 X.XX±0.25 (X.XXX±0.01)
- Pin diameter  $\varnothing 1.0 \pm 0.05$  ( $0.04 \pm 0.002$ )

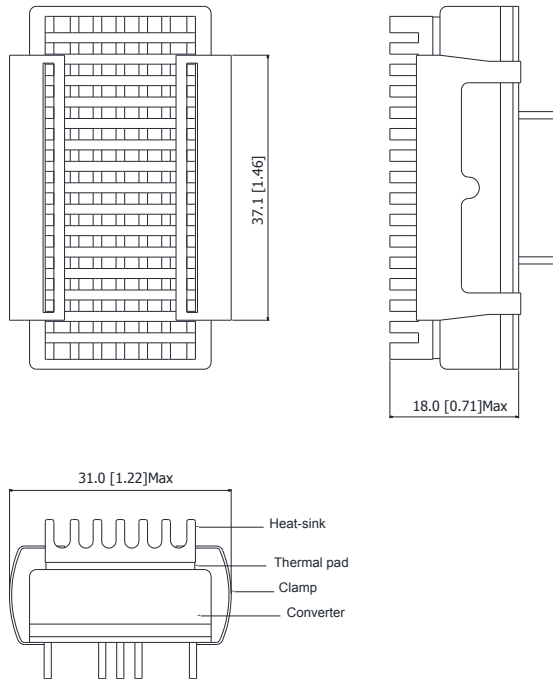
Physical Characteristics

|                                 |   |
|---------------------------------|---|
| <b>Case Size</b>                | 50.8 x 25.4 x 11 mm (2.0 x 1.0 x 0.43 inches)                 |
| <b>Case Material</b>            | Red copper, powder coating                                    |
| <b>Base Material</b>            | FR4 PCB (flammability to UL 94V-0 rated)                      |
| <b>Insulated Frame Material</b> | Non-conductive black plastic (flammability to UL 94V-0 rated) |
| <b>Pin Material</b>             | Tinned copper   |
| <b>Potting Material</b>         | Epoxy (flammability to UL 94V-0 rated)                        |
| <b>Weight</b>                   | 40.5 g  |

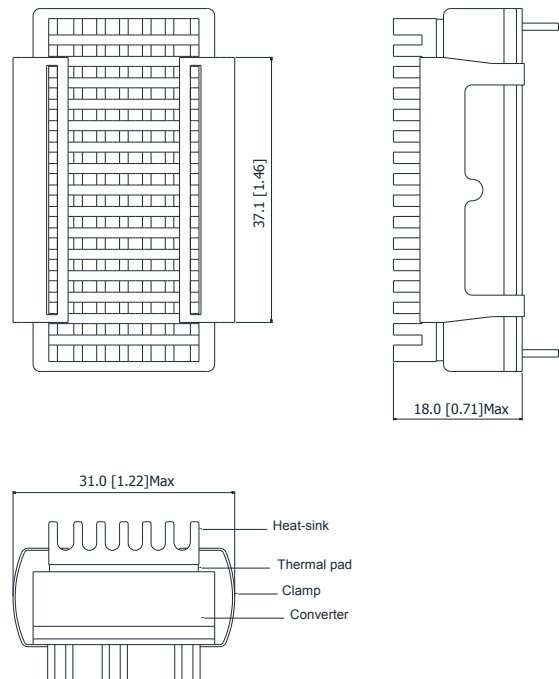
To order the converter with heatsink, please add a suffix -HS (ERM00B110-HS) to order code.

Mechanical Drawings

Heatsink for ERMxxxx Models (Option - HS)



Heatsink for ERMxxxxB Models (Option - HS)



The advantages of adding a heatsink are:

1. To help heat dissipation and increase the stability and reliability of DC/DC converters at high operating temperature atmosphere.
2. To upgrade the operating temperature of DC/DC converters, please refer to Derating Curve.

Physical Characteristics

|                   |                        |
|-------------------|------------------------|
| Heatsink Material | Aluminum               |
| Finish            | Black Anodized Coating |
| Weight            | 9 g                    |

Notes:

1. All specifications are subject to change without notice. Mechanical drawings are for reference only.
2. Warranty: 3 years
3. Label and logo appearance may vary from what is shown on mechanical drawings.

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