

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 ² | 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

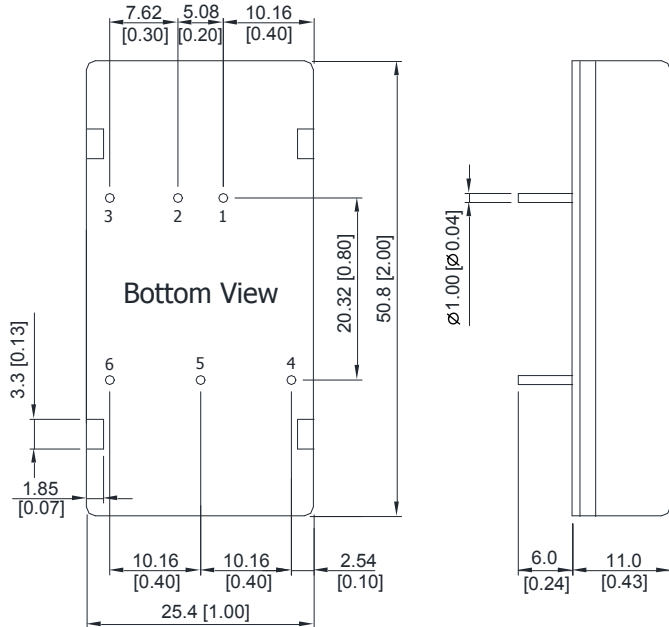
| | |
|-------------------------------------|----------------------------------|
| Operating ambient temperature range | -40 °C to +85 °C (with derating) |
| Storage temperature | -50 °C to +125 °C |
| Humidity | 5% to 95% (non-condensing) |

Ordering Information

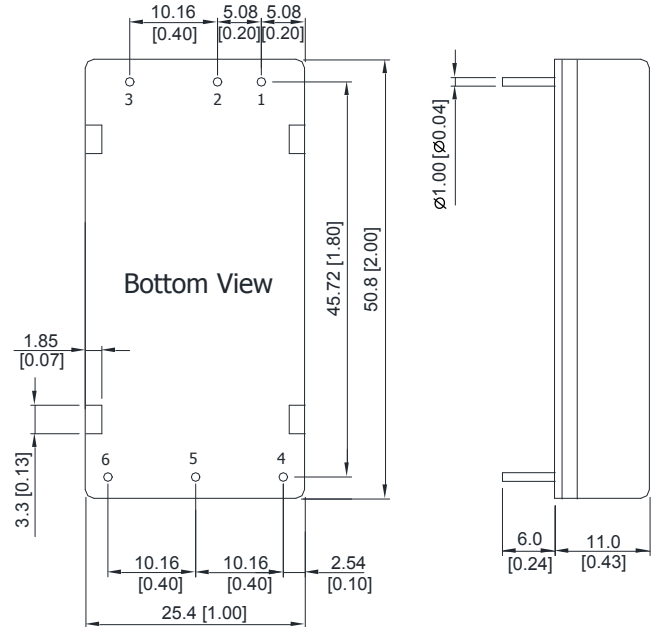
| Model Number | Input Voltage | Output | Efficiency @ Max Load | Max Power |
|--------------|---------------|------------------|-----------------------|-----------|
| ERM02A18 | 9 - 36 Vin | 5 V @ 2 A | 84% | 10 W |
| ERM00B18 | 9 - 36 Vin | 12 V @ 0.835 A | 86% | 10 W |
| ERM00C18 | 9 - 36 Vin | 15 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 \pm 0.75 (X.XX \pm 0.03)
 X.XX \pm 0.25 (X.XXX \pm 0.01)
- Pin diameter \varnothing 1.0 \pm 0.05 (0.04 \pm 0.002)

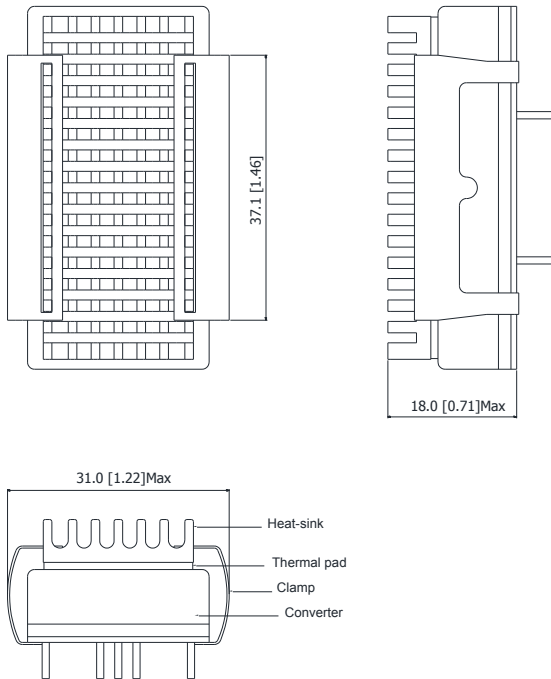
Physical Characteristics

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

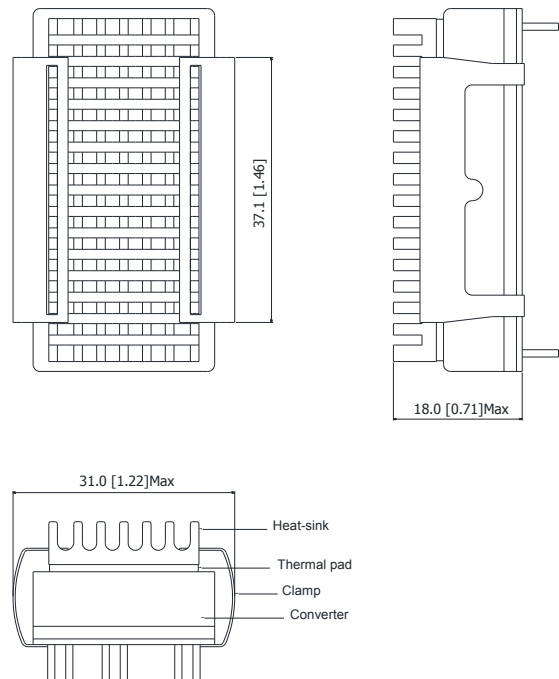
To order the converter with heatsink, please add a suffix -HS (ERM00B110-HS) to order code.

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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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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