

# ERM Series

20 Watts

## Data Sheet

**Total Power:** 20 Watts  
**Input Voltage:** 12 V, 24 V, 48 V,  
 72 V or 110 V  
**# of Outputs:** Single

### SPECIAL FEATURES

- Encapsulated
- Wide 4:1 input range
- 1" x 2" DIP package
- 2250 Vdc I/O isolation
- Single output
- OCP, OVP, OTP Protection
- Remote On/Off
- High efficiency - 86%
- Railway Standard IEC/EN50155

### SAFETY

- UL/cUL 60950-1
- IEC/EN 60950-1
- IEC/EN 50155



### Electrical Specifications

Input	
Input range:	9 to 36 Vdc; 18 to 75 Vdc; 40 to 160 Vdc
Efficiency <sup>2</sup> :	86% @ 12 Vo
Output	
Voltage tolerance:	±1.0%
Line regulation:	±0.2%
Load regulation:	Single output: ±0.5%
Noise/ripple:	150 mV
OCP and S/C protection:	Hiccup
Over voltage protection:	Latched
OTP protection:	Latched
Switching frequency:	320 KHz
Temperature coefficient:	±0.02 /°C
Isolation	
I/O isolation:	2250 Vdc min.
Insulation resistance:	1000 Mohm
Insulation capacitance:	3000 pF

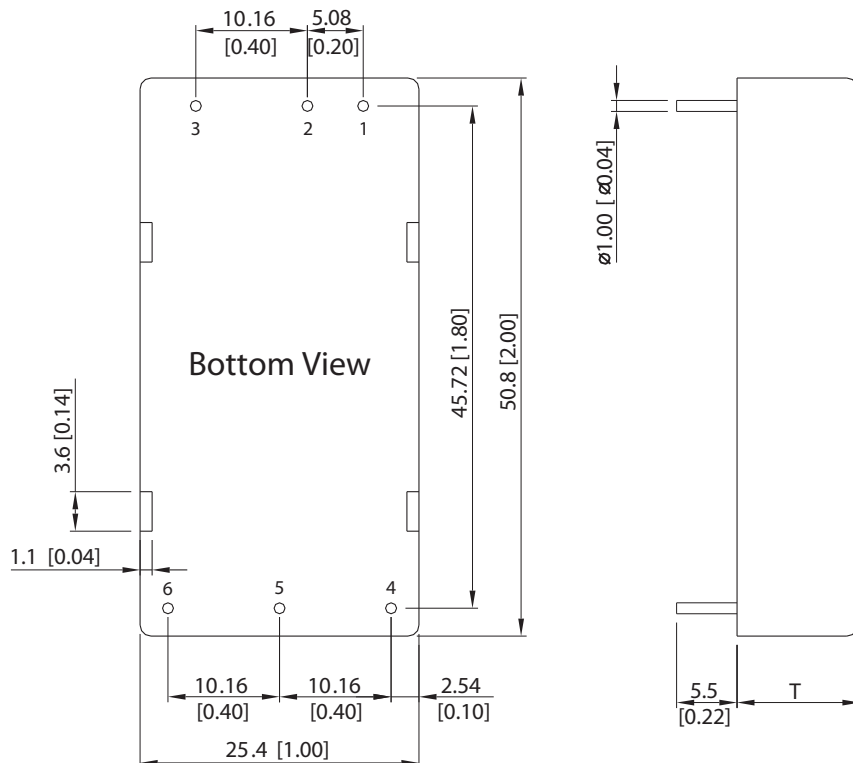
### Environmental Specifications

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

## Ordering Information

Input Voltage	Output	Efficiency @ Max Load	Max Power	Model Number
9 - 36 Vin	5 V @ 4 A	85%	20 W	ERM04A18
9 - 36 Vin	12 V @ 1.67 A	87%	20 W	ERM01B18
9 - 36 Vin	15 V @ 1.33 A	87%	20 W	ERM01C18
9 - 36 Vin	24 V @ 0.833 A	86%	20 W	ERM01H18
18 - 75 Vin	5 V @ 4 A	85%	20 W	ERM04A36
18 - 75 Vin	12 V @ 1.67 A	87%	20 W	ERM01B36
18 - 75 Vin	15 V @ 1.33 A	87%	20 W	ERM01C36
18 - 75 Vin	24 V @ 0.833 A	86%	20 W	ERM01H36
40 - 160 Vin	5 V @ 4 A	83%	20 W	ERM04A110
40 - 160 Vin	12 V @ 1.67 A	86%	20 W	ERM01B110
40 - 160 Vin	15 V @ 1.33 A	86%	20 W	ERM01C110
40 - 160 Vin	24 V @ 0.833 A	85%	20 W	ERM01H110

## Mechanical Drawings



### Pin Connectors

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

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±0.25 (X.XX±0.01)  
X.XX±0.13 (X.XXX±0.005)
- Pin diameter  $\varnothing 1.0 \pm 0.05$  (0.04±0.002)

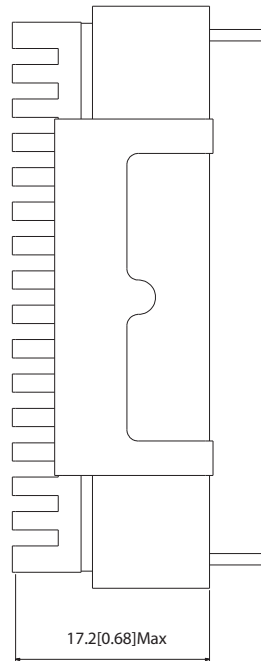
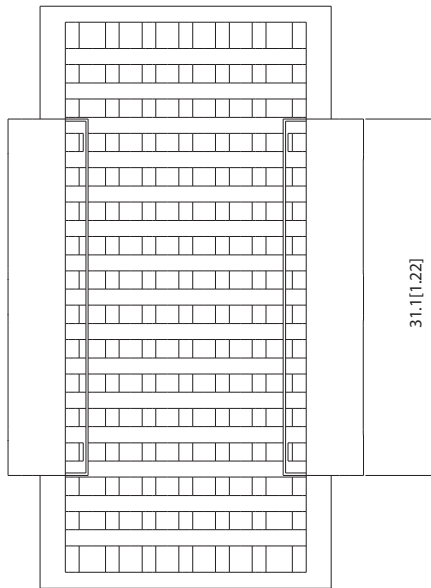
## Physical Characteristics

Case Size:	50.8 x 25.4 x 11 mm (2.0 x 1.0 x 0.43 inches)
Case Material:	Aluminium Alloy, Black Anodized Coating
Base Material:	FR4 PCB (flammability to UL 94V-0 rated)
Pin Material:	Copper Alloy with Gold Plate Over Nickel Subplate
Weight:	

To order the converter with heatsink, please add a suffix -HS (ERM04A110-HS) to order code.

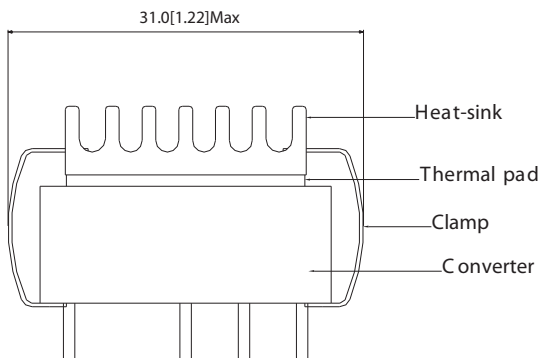
## Mechanical Drawings

### Heatsink (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.