

POWER THICK FILM RESISTOR

LPS1100



High-Power Thick Film Resistor Heatsink Mounting



KEY BENEFITS

- High power up to 1100 W at 25 °C on heatsink
- Small size and low profile, 57 mm x 60 mm
- Non inductive: < 0.1 μ H
- High dielectric strength up to 12 kV_{RMS}
- Low weight: 79 g
- High temperature up to 200 °C
- Compliant to RoHS Directive 2011/65/EU

APPLICATIONS

- Industrial (windmills)
- Transportation (trains)
- Medical (x-ray tables)
- HEV/EV (battery management)

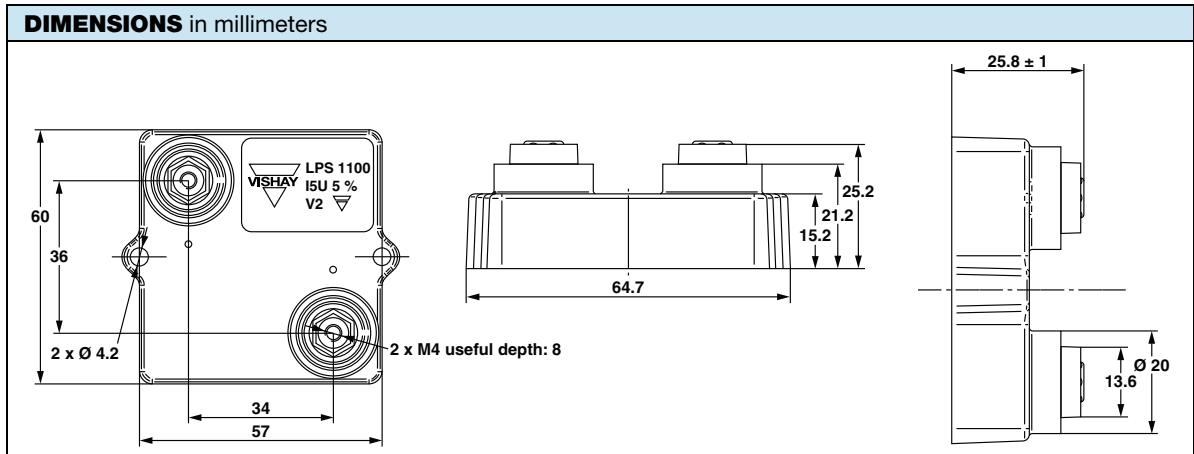
RESOURCES

- Datasheet: LPS1100 - <http://www.vishay.com/doc?50059>
- Application Note - <http://www.vishay.com/doc?52025>
- For technical questions contact sfer@vishay.com

Resistors - High Power up to 1100 W



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Notes

- Tolerances unless stated: ± 0.2 mm
- Power dissipation is 1100 W by using a water cooled heatsink at $T_{\text{water}} = 15$ °C of $R_{\text{th}} = 0.059$ °C/W (25 °C to the nearest point of the resistor onto heatsink) and R_{th} contact estimated at 0.07 °C/W.

MECHANICAL SPECIFICATIONS

Mechanical Protection	Insulated case and resin for potting UL 94 V-0
Resistive Element	Thick film
End Connections	Screws M4
Tightening Torque Connections	2 Nm
Tightening Torque Heatsink	2 Nm
Maximum Torque	2.5 Nm
Weight	79 g ± 10 %

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to + 200 °C
Climatic Category	55/200/56

ELECTRICAL SPECIFICATIONS

Resistance Range	1 Ω to 1.3 k Ω
Tolerances	± 1 % to ± 10 %
Power Rating and Thermal Resistance	1100 W at + 25 °C On heatsink $R_{\text{th}(f-c)}$: 0.039 °C/W
Temperature Coefficient (- 55 °C to + 200 °C), IEC 60115-1	± 150 ppm/°C
Dielectric Strength IEC 60115-1, 1 min, 10 mA max.	7 kV _{RMS} or 12 kV _{RMS}
Insulation	$\geq 10^4$ M Ω
Inductance	≤ 0.1 μ H

PERFORMANCE		
TESTS	CONDITIONS	REQUIREMENTS
Momentary Overload	IEC 60115-1: 2 x Pr/10 s for heatsink with $R_{\text{th}(h-a)} \geq 0.26$ °C/W (maximum power: 700 W) 1.6 x Pr/1 s for heatsink with 0.26 °C/W > $R_{\text{th}(h-a)} \geq 0.059$ °C/W (maximum power: 1800 W)	$\pm (0.25$ % + 0.05 $\Omega)$
Rapid Temperature Change	AEC-Q200 conditions: IEC 60115-1/IEC 60068-2-14, Test Na 50 cycles (- 55 °C to + 200 °C)	$\pm (0.5$ % + 0.05 $\Omega)$ for all the ohmic values
	1000 cycles (- 55 °C to + 200 °C)	$\pm (5$ % + 0.05 $\Omega)$ for R < 38 U $\pm (0.5$ % + 0.05 $\Omega)$ for R ≥ 38 U
Load Life	AEC-Q200 conditions: IEC 60115-1 1000 h (90/30) Pr	$\pm (5$ % + 0.05 $\Omega)$ for R < 38 U $\pm (0.5$ % + 0.05 $\Omega)$ for R ≥ 38 U
Humidity (Steady State)	AEC-Q200 conditions: IEC 60115-1, 1000 h RH 85 %/85 °C	$\pm (0.5$ % + 0.05 $\Omega)$
Mechanical Shock	AEC-Q200 conditions: MIL-STD-202 method 213 condition D (100 g's/6 ms 3.75 m/s)	$\pm (1$ % + 0.05 $\Omega)$
Vibration	AEC-Q200 conditions: MIL-STD-202 method 204 condition D (5 g, 20 min 10/2000 Hz)	$\pm (1$ % + 0.05 $\Omega)$
Climatic Sequence	AEC-Q200 conditions: IEC 60115-1 (55/200/56)	$\pm (1$ % + 0.05 $\Omega)$

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