HS Aluminium-housed Power Resistors

Overview

The HS series comprises highly stable, high-quality wirewound resistors manufactured from premium materials for optimum reliability and stability. They dissipate high power in a limited space while maintaining a relatively low surface temperature. The aluminium housing rapidly transfers heat to the specified heatsink. Applications include power generation, traction and drives.

This edition adds bolt-terminal HS75, HS100 and HS150 models and HS types rated 350W~500W, giving the series one of the widest power ranges on the market. INLANX can advise on pulse applications and high-voltage selection, and provide custom modifications and testing. Low resistance, special mounting arrangements and special terminals are also available.



Features

• Proven product with over 50 years of design and manufacturing experience and long-established reliability.

• 5W~500W: the widest power range on the market.

• An industry benchmark used across many sectors.

• Custom designs, windings, terminals and mounting arrangements available.

• Low-resistance, low-inductance and higher-voltage versions available.

Typical Applications

• Braking resistors

• Voltage-sharing / balancing resistors

• Capacitor charging and discharging circuits

• Crowbar protection circuits

• Filters

• General motor and electrical equipment applications

Electrical Specifications • HS 5W–75W

Parameter	HS5	HS10	HS25	HS50	HS75
Power with heatsink at 25°C (W)	10	16	25	50	75
Power without heatsink (W)	5.5	8	12.5	20	45
Minimum resistance (Ω)	R01	R01	R01	R01	R05
Maximum resistance (Ω)	10K	15K	36K	100K	50K
Operating temperature range	-55 ~ 200°C				
Maximum working voltage (DC / AC RMS) (V)	150	250	500	1250	1400
Isolation voltage (DC / AC peak) (V)	1400	1400	2500	2500	3500
Dielectric withstand (AC peak) (V)	1400	1400	2500	2500	5000
Stability (resistance change after 1000h) (%)	1	1	1	1	2
Standard heatsink area (mm²)	41500	41500	53500	53500	99500
Heatsink thickness (mm)	1	1	1	1	3
Number of mounting holes	2 holes	2 holes	2 holes	2 holes	4 holes

Electrical Specifications • HS 100W–500W

Parameter	HS100	HS150	HS200	HS250	HS300	HS500
Power with heatsink at 25°C (W)	100	150	200	250	300	500
Power without heatsink (W)	50	55	50	60	75	125
Minimum resistance (Ω)	R05	R10	R10	R10	R10	1R0
Maximum resistance (Ω)	100K	100K	50K	68K	82K	100K
Operating temperature range	-55 ~ 200°C					
Maximum working voltage (DC / AC RMS) (V)	1900	2500	1900	2200	2500	2500
Isolation voltage (DC / AC peak) (V)	3500	3500	3600	3600	3600	3600
Dielectric withstand (AC peak) (V)	5000	5000	5600	5600	5600	5000
Stability (resistance change after 1000h) (%)	2	2	3	3	3	3
Standard heatsink area (mm²)	99500	99500	375000	476500	578000	578000
Heatsink thickness (mm)	3	3	3	3	3	3
Number of mounting holes	4 holes	4 holes	6 holes	6 holes	6 holes	6 holes

General Characteristics

Item	Specification
Long-term stability	For ΔR≤50% of nominal: dissipation ≤70% of rated power; for ΔR≤25% of nominal: dissipation ≤50% of rated power.
Insulation resistance	Dry: minimum 10,000 MΩ; after humidity testing: minimum 1000 MΩ.
Heat dissipation	A lower-thermal-resistance heatsink may be used, but increasing the power rating is not recommended. Thermal grease is recommended (required above 200W).
Resistance tolerance	Standard ±5%; others on request.
Temperature coefficient	≤100Ω: ±50ppm/°C; >100Ω: ±25ppm/°C. Tolerances of 10%/3%/2%/0.5%/0.25% are also available.
Shelf life	24 months in original packaging, away from chemical contamination.

Mounting Holes

- HS5 – HS10: 2 × 2.4mm
- HS25 – HS50: 2 × 3.3mm
- HS75 – HS150: 4 × 4.4mm
- HS200 – HS250: 2 × 2.4mm
- HS300, HS350 – HS500: 2 × 3.3mm

Derating & Performance Charts

Derating plots show power versus permitted heatsink temperature, not actual temperature rise or ambient temperature.

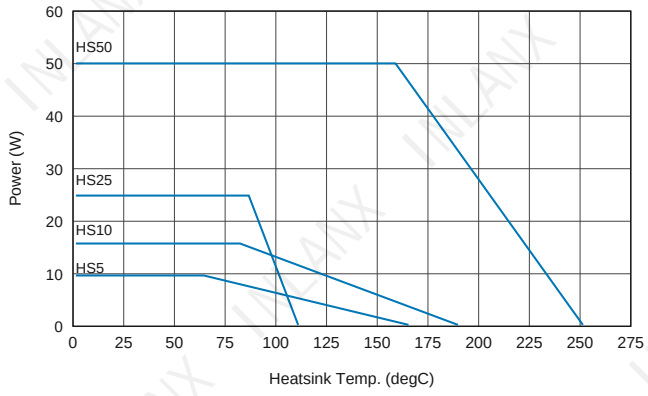


Fig. 1 · HS5–HS50 derating

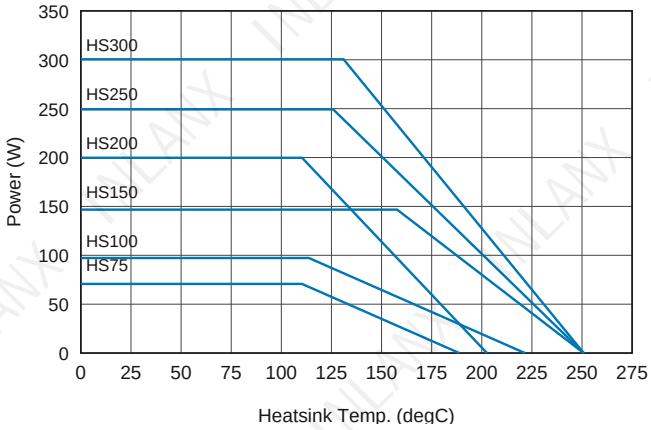


Fig. 2 · HS75–HS300 derating

Performance Charts • continued

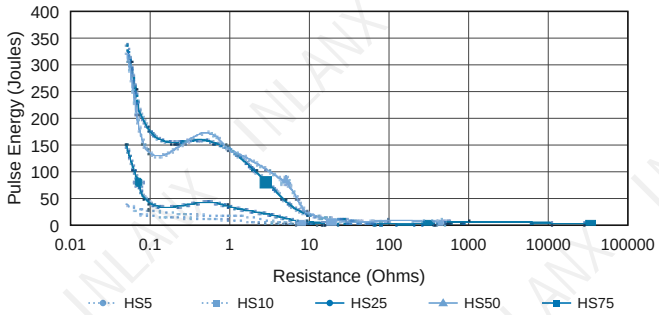


Fig. 3 · HS5–HS75 · 200ms pulse

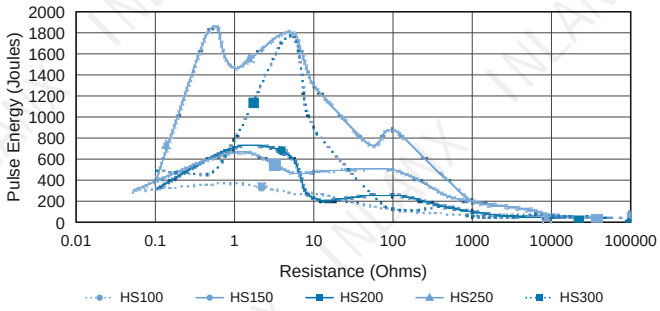


Fig. 4 · HS100–HS300 · 200ms pulse

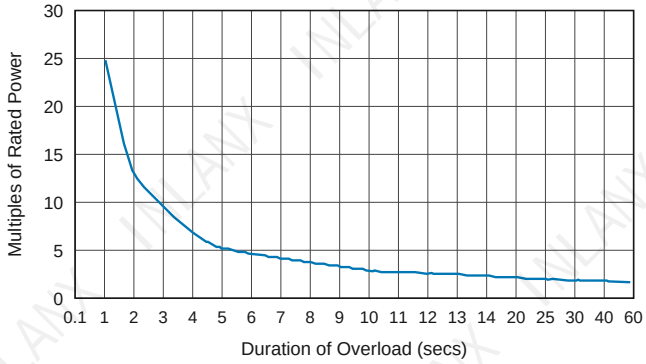


Fig. 5 · Overload (seconds / rated multiple)

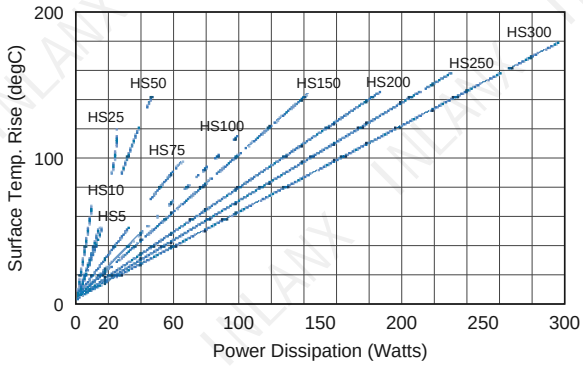
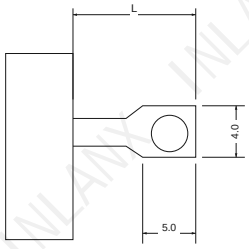
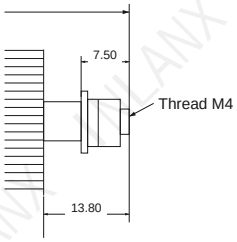


Fig. 6 · Surface rise (W / °C)

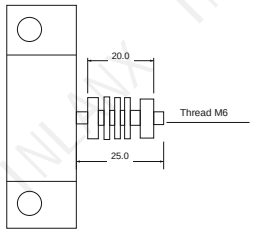
Terminal Specifications • mm



Flat terminal (4.0mm wide)



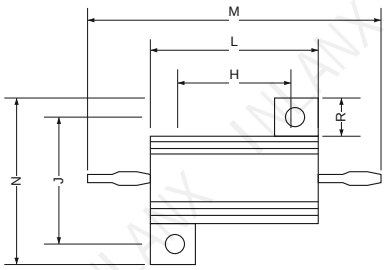
M4 bolt terminal



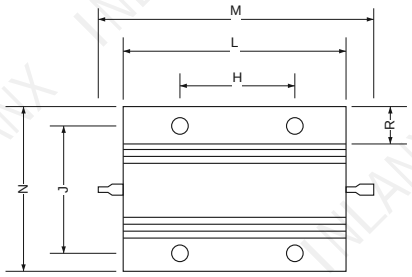
M6 bolt terminal

Standard models	Terminal length L (mm)
HS5, HS10	7
HS25, HS50	10
HS75, HS100, HS150	8

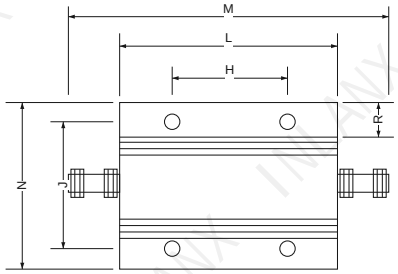
Outline Engineering Drawings • mm



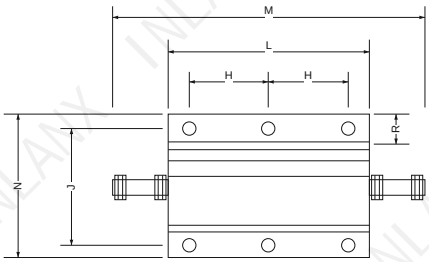
HS5–HS50



HS75–HS150

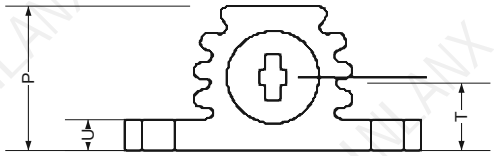


HS75S–HS150S (bolt terminals)



HS200–HS300 / HS series

End View • All Models • mm



Dimensional Data • mm

Model	H ±0.3	J ±0.3	L max	M max	N max	P max	R min	T ±0.5	U max
HS5	11.3	12.4	17.0	30.0	17.0	9.0	1.9	4.3	2.5
HS10	14.3	15.9	21.0	36.5	21.0	11.0	1.9	5.2	3.2
HS25	18.3	19.8	29.0	51.0	28.0	15.0	2.8	7.2	3.2
HS50	39.7	21.4	51.0	72.5	30.0	17.0	2.8	8.2	3.2
HS75	29.0	37.0	49.0	71.0	48.0	24.0	5.0	11.5	3.5
HS100	35.0	37.0	66.0	87.5	48.0	24.0	5.0	11.5	3.5
HS150	58.0	37.0	98.0	122.0	48.0	24.0	5.0	11.5	3.5
HS200	35.0	57.2	90.0	143.0	73.0	42.0	5.6	20.25	5.3
HS250	44.5	57.2	109.0	163.0	73.0	42.0	5.6	20.25	5.3
HS300	52.0	59.0	128.0	180.0	73.0	42.0	5.6	20.25	5.3
HS500	90.0	59.0	204.0	253.0	73	42.0	5.6	20.25	5.3