HPK400-D01 High Power Non-inductive Module Resistor

Product overview

Thick-film non-inductive power module resistor for generation, HVDC transmission, inverters, variable-speed drives, electric locomotives and ship drives.



Features

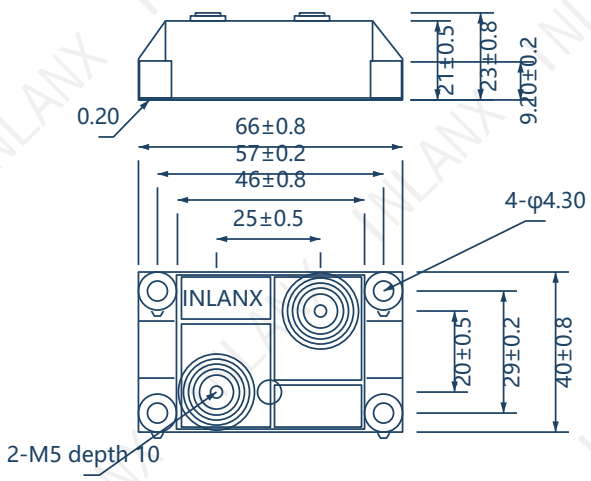
- 400 W rating at 85°C base-plate center.
- 4 × M4 screws for heatsink mounting; attachment force 120–160 N.
- Non-inductive thick-film design for power and pulse operation.
- High-insulation structure with large creepage and clearance.
- The source states UL94-V0 material performance.

Electrical specifications

Item	Specification
Rated power / condition	400 W at base-plate center 85°C
Resistance range	1 Ω–1 MΩ
Tolerance	±2%(G), ±3%(F), ±5%(J), ±10%(K)
TCR / specified range	±150 ppm/°C; 25–105°C; other requirements by agreement
Maximum working voltage	5000 VDC
Peak current	≤1500 A under low-resistance, narrow-pulse conditions
Insulation withstand voltage	6 kVrms, 50 Hz, 1 min; 12 kVrms for 1 min by agreement
Partial discharge	4 kVrms, <10 pC; 7 kVrms, <10 pC by agreement
Insulation resistance	≥10 GΩ at 500 V
Creepage distance	≥42 mm
Clearance	≥14 mm
Inductance	≤80 nH
Capacitance to case	≤110 pF
Parallel capacitance	≤40 pF
Operating temperature	-55°C to +155°C
Terminal installation	M5/M4 screws; maximum torque 2.0 N·m

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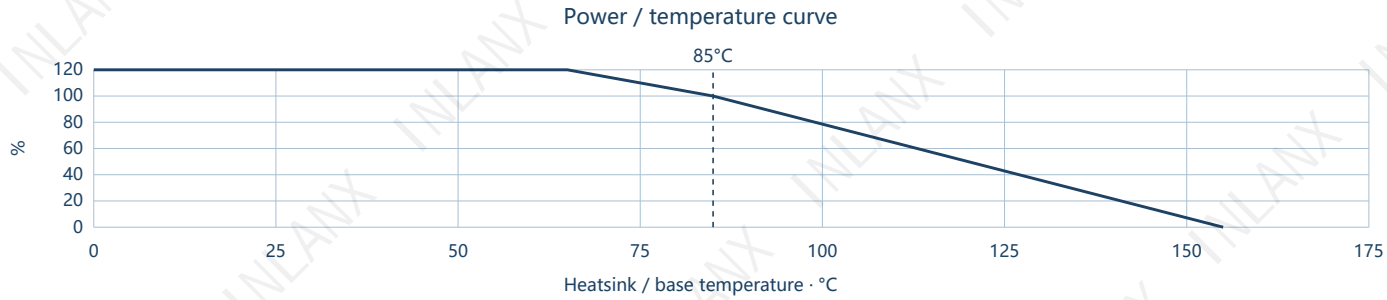
Construction and dimensions • mm



Characteristics and tests

Test item	Conditions	Requirement
Short-time overload	700 W; 70°C; 10 s	ΔR ≤ ±(0.4%R + 0.001 Ω)
Moisture resistance	56 days; 40°C; RH ≥95%	ΔR ≤ ±(0.25%R + 0.001 Ω)
Temperature cycling	-55/+125°C, 0.5 h each; 5 cycles	ΔR ≤ ±(0.2%R + 0.001 Ω)
High-frequency vibration	MIL-Std-202, Method 204, Condition D	ΔR ≤ ±(0.2%R + 0.001 Ω)
Power endurance	Rated power, 1000 h; base plate 85°C	ΔR ≤ ±(0.4%R + 0.001 Ω)

R is nominal resistance; ΔR is resistance change after testing. Terminal screws and mounting-hole structures follow the source. Maximum terminal installation torque: 2.0 N·m.



Source thermal notation: 5.71 kW/K (0.18 K/W). Both are retained; the unit relationship requires confirmation.

Ordering example

Model–Resistance–Tolerance–Terminal structure–Terminal nut.
HPK400-440R-2%-(1/2)-M5

Source test reference: Q/HLF02-2023.