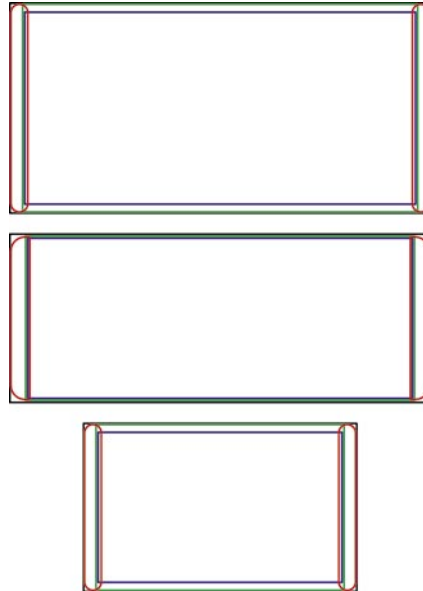


PULSE THICKFILM RESISTORS



Specification	
Nominal Resistance	Customer Specification
Resistor Range	1 R ... 2 M ± 20% ... ± 1%
Maximum Voltage	Customer Specification (Currently Manufactured: 80 kV)
Maximum Power Dissipation	Depending on Application
Pulse Energy	Depending on Application
Temperature Coefficient	±300 ppm / °C
Operational Temperature Range	-40 °C ... 125 °C - Depending on Application
Termination	Customer Specification - Conductor Pads, Axial Wires, Radial Wires, Standard Leadframe
Protection	Screen Printed Blue Polymer

Custom pulse resistors for use in various high voltage applications, primarily in medical equipment, power supplies. Above diagrams are examples of some current manufacture configurations at HIPAS. These resistors are normally immersed in temperature controlled transformer oil to ensure maximum electrical performance.

Customers are requested to supply specifications with as much information as possible to allow us to better understand requirements, and information should incorporate nominal resistor value, tolerance, TCR, operational voltage as well as maximum peak voltage, any dimensional constraints and required termination type as well as length of wires / pins.

HIPAS currently have three main resistor designs in current manufacture - HCR 0133, HCR 0392 and HCR 0455 - Which all are used in various high voltage pulse applications to protect expensive high voltage electronics.

Examples of known operational characteristics are shown for each resistor design below ;

HCR 0133 This resistor is 100 mm x 40 mm on a 1 mm thick ceramic substrate and has predominantly been used in high voltage loadbanks up to 140 kV where multiple resistors are connected in series and / or parallel to withstand the power requirements - 25 kW applications are in use, with each resistor subject to 200 W to 300 W.

These characteristics were achieved with the resistor immersed in mineral oil on 70 °C temperature control through use of heat exchangers.

HCR 0392 This resistor is 100 mm x 50 mm on a 1 mm thick ceramic substrate and has predominantly been used in high voltage loadbanks up to 140 kV where multiple resistors are connected in series and / or parallel to withstand the power requirements - 25 kW applications are in use, with each resistor subject to 200 W to 450 W.

These characteristics were achieved with the resistor immersed in mineral oil on 70 °C temperature control through use of heat exchangers, and is the most commonly used of our high power / pulse resistor.

HCR 0455 This resistor is 65 mm x 40 mm on a 1 mm thick ceramic substrate and has been used in applications with energy pulse on the resistor of 1.2 Joules @ 60 kV, with IMAX 60 A and PMAX 3600 kW and pulse t 0.25 µs.

These characteristics were achieved with the resistor immersed in High Voltage Silicone.

Maximum ceramic substrate area: 177 mm x 127 mm