

# Providing 650 W of Continuous Power, Thick Film Power Resistors Deliver Increased Power Density to Save Space and Simplify Designs, Offer Customizable Cabling and Optional NTC Temperature Sensor Integration

## Product Benefits:

- High power of 650 W at an 85 °C bottom case temperature
- Compact, low profile package
- Customizable cabling
- Optional temperature sensing integration
- “Cold system” baseplate design
- Cooled by external heatsink (not supplied)
- Easy-mount design with self-calibrating pressure
- High temperature operation to +155 °C
- Wide range of resistance values from 6.2  $\Omega$  to 1 M $\Omega$
- Maximum operating voltage up to 6000 V<sub>DC</sub>
- Dielectric strength to 7000 V<sub>RMS</sub>
- Typical self-inductance of  $\leq 40$  nH
- Support repetitive operation up to 3.5 J per pulse for 50  $\mu$ s pulses
- AEC-Q200 qualified (pending)
- RoHS-compliant



## Market Applications:

- Precharge, discharge, active discharge, power conversion, and snubber functionality for automotive, energy, industrial, medical, and avionics systems used in harsh environments

## The News:

Vishay Intertechnology introduces a new series of thick film power resistors that deliver an industry-leading 650 W of continuous power in a low profile package. Offering customizable cabling and optional temperature sensing integration, Vishay MCB RPWA 650 series devices reduce component counts, saving space while simplifying designs and assembly.

- The high power capabilities and compact package of the devices allow designers to achieve higher power density, reducing the number of parallel resistors required
- The resistors’ “cold system” baseplate design enables efficient heat transfer to an external heatsink (not supplied), maintaining stable operation over a wide temperature range from -55 °C to +155 °C
- To further streamline designs, RPWA 650 series devices integrate a power resistor and optional embedded NTC temperature sensor in a single housing
- Customizable cabling and an easy-mount design with self-calibrating pressure eliminate the need for board-level soldering, reduce wiring and assembly complexity, and enable faster plug and play integration in power modules and assemblies



- For high voltage and fast-switching circuits, the resistors' combination of high operating voltage, high dielectric strength, and low self-inductance enables accurate energy dissipation and minimizes transient overshoot

### The Key Specifications:

- Resistance range: 6.2  $\Omega$  to 1 M $\Omega$
- Tolerance:  $\pm 5\%$ ,  $\pm 10\%$
- Max. rated power: 650 W
- Temperature coefficient:  $\pm 150$  ppm/ $^{\circ}\text{C}$
- Operating temperature range:  $-55^{\circ}\text{C}$  to  $+155^{\circ}\text{C}$
- Max. operating voltage: up to 6000 V<sub>DC</sub>
- Dielectric strength: up to 7000 V<sub>RMS</sub>
- Typical self-inductance:  $\leq 40$  nH

### Availability:

Samples and production quantities of the RPWA 650 series are available now, with lead times of 8 to 12 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?32650> (RPWA 650)

### Contact Information:

#### THE AMERICAS

Edgardo Menendez  
[edgardo.menendez@vishay.com](mailto:edgardo.menendez@vishay.com)

#### EUROPE

Emmanuel Tarot  
[emmanuel.tarot@vishay.com](mailto:emmanuel.tarot@vishay.com)

#### ASIA/PACIFIC

Kevin Guo  
[kevin.guo@vishay.com](mailto:kevin.guo@vishay.com)

Darin Tomita  
[darin.tomita@vishay.com](mailto:darin.tomita@vishay.com)