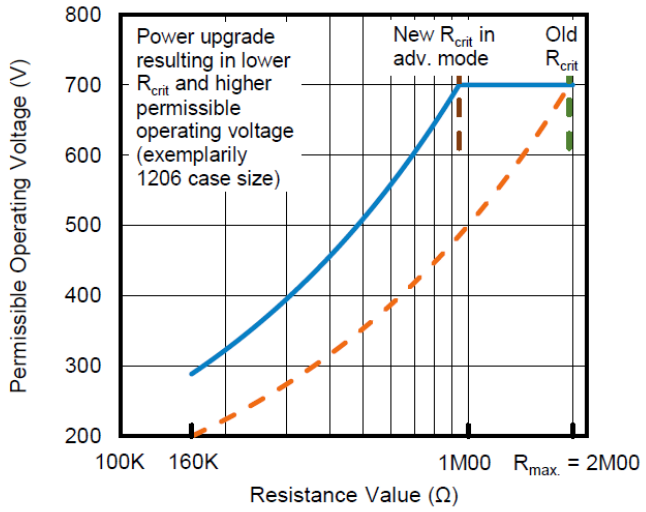
TNPV e3 Precision High Voltage Thin Film Chip Resistor Series Now Offers Defined Operating Modes

Modern industrial and automotive systems such as battery management systems, inverters, and test and measurement equipment require thin film resistors that combine high operating voltage, stability, and excellent lifetime behavior.

To meet defined power and stability requirements, Vishay Draloric has expanded its TNPV e3 series of high voltage thin film chip resistors with three defined operating modes derived from the proven TNPW e3 concept — General, Power, and Advanced. These modes allow designers to apply maximum operating voltage at lower resistance values than before, while maintaining clearly specified limits for temperature, dissipation, and long-term drift.

This product enhancement is based on qualification against new power limits only — there is no change in resistor design or production process — ensuring full continuity in performance and reliability without part number changes.



Key Advantages

- Power upgrade with defined operating modes — General, Power, and Advanced — for the same component
- Reduced critical resistance (R_{crit}) enables higher operating voltage at lower resistance values
- High operating voltage capability up to 1000 V, depending on case size and mode
- Defined long term stability depends on operation mode
- No design or production process change
- AEC-Q200 qualified and Vishay Automotive Grade
- Sulfur-resistant up to FOS105, PFAS-free and GREEN
- Failure rate $FIT_{observed}$: ≤ 0.10 x 10^{-9} /h

Typical Applications

- Industrial and automotive inverters
- Battery management and voltage sensing systems
- High voltage equipment for test and measurement applications

Useful Links

- Datasheet
- Product Page
- Free Samples via Vishay's Sample Service Portal
- Infographic: HIGH VOLTAGE SMD RESISTORS
- White Paper on Clearance and Creepage
- Sample Kit SMD Resistor Solutions for High Voltage Measurement Circuits

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