



T51 Series Automotive Grade vPolyTan™ Polymer Tantalum Chip Capacitors Combine Low ESR Down to 40 mΩ With High Volumetric Efficiency and High Temperature Operation to +125 °C in Compact D and V Case Sizes

Product Benefits:

- AEC-Q200 qualified
- Available in the compact D and V case sizes
- Wide capacitance range from 6.8 μF to 330 μF, with a ± 20 % capacitance tolerance
- Voltage ratings from 2.5 V to 35 V
- Ultra low ESR from 120 mΩ down to 40 mΩ
- High temperature operation to +125 °C, with voltage derating above +105 °C
- High temperature load time to 2000 hours
- High ripple current to 2.37 A
- Lead (Pb)-free terminations
- RoHS-compliant, halogen-free, and [Vishay Green](#)



Market Applications:

- Decoupling, smoothing, and filtering in switch mode and point of load (POL) power supplies for automotive ADAS, infotainment, and other in-vehicle electronic systems

The News:

Vishay Intertechnology today introduced a new Automotive Grade series of vPolyTan™ surface-mount polymer tantalum molded chip capacitors. Designed to deliver improved performance in high temperature, high humidity operating conditions, the AEC-Q200 qualified Vishay Polytech T51 series offers lower ESR, lower voltage derating, and a benign failure mode, while maintaining higher volumetric efficiency than traditional tantalum capacitors.

- The capacitors feature a highly conductive polymer cathode system and a robust design for harsh environments
- The devices offer technological advantages over ceramic chip capacitors (MLCC) and aluminum capacitors in a comparable capacitance range

The Perspective

With over 30 years of experience developing automotive components, Vishay Sprague has been a qualified supplier of automotive tantalum capacitors since the formation of the industry. Our long history of product development in this market segment has empowered the Vishay team with the knowledge necessary to design parts that meet the most comprehensive customer-specific design requirements, thereby enabling us to go beyond the standard AEC-Q200 requirements: [Vishay Automotive Grade](#). This stamp of approval guarantees that our new T51 series of Automotive Grade polymer tantalum capacitors is designed with the highest level of quality in mind. As a result, our customers have confidence that they are manufacturing the highest quality end products for consumers. This, by definition, is “the need behind the need.” Vishay’s product offering will serve a need in an industry where heavy design activity will lead to strong growth in coming years.



The Key Specifications:

- Case codes: D (EIA 7343-31) and V (EIA 7343-20)
- Capacitance: 6.8 μ F to 330 μ F
- Capacitance tolerance: \pm 20 %
- Voltage ratings: 2.5 V to 35 V
- ESR at 100 kHz and +25 °C: 40 m Ω to 120 m Ω
- Max. ripple current at 100 kHz and +45 °C: 1.79 A to 2.37 A
- High temperature load time: 2000 h
 - All parts rated to 2000 h

Availability:

Samples and production quantities of the new Automotive Grade tantalum capacitors are available now, with lead times of 26 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?40259> (T51)

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