



DID YOU KNOW?

EIA-717 SETS THE STANDARD

EIA-717 (Surface-Mount Niobium and Tantalum Qualification Specification) Sets the Standard

Qualification standards are usually geared towards the higher reliability performance associated with the military and automotive industries, and operation in harsh environments (for example, the AEC-Q200 qualification for automotive applications). The latest EIA-717 standard is similar, but is geared towards the industrial and commercial markets and ensures product compatibility across multiple manufacturers. This FFF (fit, form, and function) adherence is particularly valuable for component engineers in times of supply constraints, enabling easy replacement of “hard to get” parts from a single manufacturer without costly compatibility qualification testing.

The EIA-717 specification was developed by the ECA P2.5 Engineering Committee on Tantalum and Niobium Capacitors. This committee was made up of engineering experts from both the supplier and user communities to maximize the standard’s long term value to the industry. The broad and robust test suite covers important areas like thermal shock, life, biased humidity, temperature stability, resistance to solder heat, solderability, and others. It also allows users to evaluate tantalum capacitors in a uniform and consistent manner, with the ability to access an up to date data package at all times. A comparison of test differences between EIA-717 and AEC-Q200 is available on request (contact tantalum@vishay.com).

The available test data page is generic data for the product series and comes from supplier-certified labs. It can include internal supplier qualifications, user-specific qualifications, and suppliers’ in-process monitoring, and is guaranteed to be less than two years old. The Vishay series compliant with EIA-717 are:

- [293D](#) Tantalum molded; A, B, C, D, and E case sizes; up to 1000 μ F
- [593D](#) Tantalum molded; low ESR down 100 m Ω ; A, B, C, D, and E case sizes; up to 680 μ F
- [TR3](#) Tantalum molded; low ESR down 35 m Ω ; A, B, C, D, E, and W case sizes; up to 1000 μ F
- [TL3](#) Tantalum molded; low DCL down 0.25 μ A; A, B, C, D, and E case sizes; up to 470 μ F
- [TMCM](#) Tantalum molded (Japan production); A, B, C, and E case sizes; up to 470 μ F
- [TMCR](#) Tantalum molded (Japan production); low ESR down 100 m Ω ; B, C, and E case sizes; up to 1000 μ F
- [TMCP](#) Solid tantalum molded (Japan production); P (0805) case size; up to 47 μ F
- [TMCJ](#) Solid tantalum molded (Japan production); J (0603) case size; up to 22 μ F
- [TMCU](#) Solid tantalum molded (Japan production); low profile (1.2 mm max.); 220 μ F
- [TMCS](#) Industrial-grade solid tantalum molded (Japan production); A, B, C, and E case sizes; up to 68 μ F

Cross reference information by part number is available on the Vishay website www.vishay.com.

Vishay also offers a tantalum FIT calculator based on MIL-HDBK-217 (revision F), enabling users to predict reliability. Results are listed as FIT (failures in time) and MTBF (mean time between failures). For more information, visit: www.vishay.com/dt/capacitors/tantalum-reliability-calculator-list/.

For further information on our tantalum capacitor capability contact your local Vishay office.