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Glass-Encapsulated Multilayer Varistors Rated For 150°C Operation

AVX's TransGuard automotive VGAH series high-temperature, glass-encapsulated multilayer varistors (MLVs) are qualified to AEC-Q200, rated for operating temperatures up to 150°C, and designed for use in a wide variety of high-energy, harsh-environment automotive underhood, industrial, and oil and gas applications. Comprised of zinc oxide (ZnO) based ceramic semiconductor devices with nonlinear, bidirectional voltage-current (V-I) characteristics similar to those of back-to-back Zener diodes, but with greater current and energy handling capabilities and the addition of EMI/RFI attenuation, the MLVs combine bidirectional overvoltage circuit protection and EMI/RFI filtering functions in a single, high-reliability SMT device.

The series also exhibits high-current and energy-handling capabilities, very fast, sub-nanosecond response times to ESD strikes, multiple-strike capabilities, high-energy absorption/load dump, low leakage, and excellent solderability. Additional benefits include glass encapsulation for impermeable protection against harsh environments and processes, including acids, salt, and chlorine flux. Furthermore, the MLVs require no derating for energy and current over the full range of operating temperatures from -55°C to +150°C.

These components are available in five chip sizes (1206, 1210, 1812, 2220, and 3220) with 16- to 31-Vdc working voltages, 40- to 57-V clamping voltages, 0.6- to 13-J energy ratings, 1.5- to 50-J load dump energy, 200- to 1,800-A peak current ratings, and 700- to 15,000-pF capacitance. With these capabilities, the automotive-qualified VGAH series MLVs are especially well suited for use in high-temperature, harsh-environment dc motor, pencil coil, LIN bus, electrical control unit (ECU), turbocharger, sensor, and relay applications in commercial, hybrid electric (HEV), plug-in hybrid electric (PHEV), and internal combustion engine (ICE) vehicles. The series is also well suited for use in a wide range of high-temperature, harsh-environment industrial applications, including power tools, automation and downhole drilling equipment, and renewable energy systems.

"AVX's new TransGuard automotive VGAH series high-temperature, glass-encapsulated multilayer varistors further extends its portfolio of high-reliability solutions for high-temperature, high-energy, and harsh-environment applications in the automotive, industrial, and oil and gas industries," said Jiri Machanicek, product marketing manager for circuit protection at AVX. "The new VGAH series MLVs provide TVS protection in their on-state and broadband EMI/RFI filtering in their off-state, don't require any current or energy derating over the entire range of rated operating temperatures, which spans -55°C to 150°C, and have a compact form factor that ruggedly withstands harsh-environment conditions and processes and satisfies increasingly common demands for lightweight, space-saving, multifunctional components."

The VGAH series MLVs also have RoHS-compliant nickel-barrier-over-pure-tin (Ni/Sn) terminations, and are compliant with the ESD performance requirements defined in the AEC-Q200, IEC 61000-4-2, and ISO 10605 standards. For more information, see the VGAH Series product page. To order, please visit Digi-Key Electronics, DMTL, Mouser, RS Components, and Rutronik. For all other inquiries, please visit the AVX website or email inquiry@avx.com.

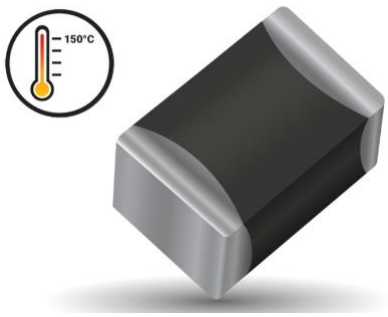

Figure. Designed for use in high-temperature, high-energy, harsh-environment automotive, industrial, and oil & gas applications, the TransGuard automotive VGAH series MLVs provide bidirectional overvoltage protection and broadband EMI/RFI filtering in a single SMT device.