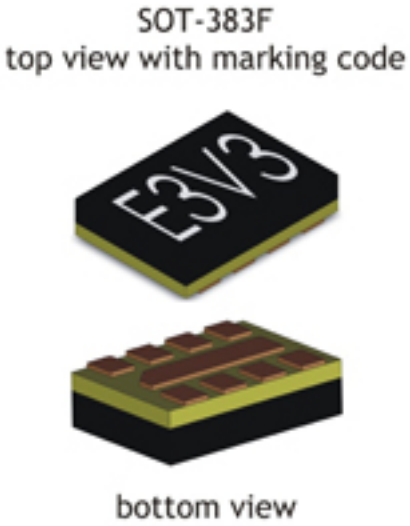
Multi-Line ESD Protection Diode Array Meets IEC 61000-4-2 level 4 Immunity



Comchip Technology has developed a 3.3-V unidirectional four-line electrostatic discharge (ESD) protection diode array that meets the immunity requirements of IEC 61000-4-2 level 4 (±20 kV air, ±15k V contact discharge). Designated as part of the CPDVR08 Series (SOT-383F package), the CPDVR083V3UA-HF array diode features a flow-through design that simplifies board layout and reduces board space by as much as 70 percent, according to the company, when compared to four single-line discrete devices. Comchip asserts the device improves ESD performance by reducing board trace inductance, which results in a lower clamping voltage, lower leakage current and a higher level of protection when compared to conventional ESD devices.

The CPDVR083V3UA-HF uses the eight-pin SOT-383F flat chip package, which measures 2.1 mm x 1.6 mm x 0.525 mm. The RoHS-compliant device has gold terminations and is completely tin-free and halogen-free. This miniature package makes it appropriate for uses in portable electronics such as lap top computers and notebooks, cell phones, digital cameras, navigation/GPS devices and MP3 players.

The CPDVR083V3UA-HF is designed to protect four lines against surge conditions. Under normal circumstances, the CPDVR083V3UA-HF will present high impedances to protected lines up to 3.3V. When the line voltage exceeds the trigger voltage of 3.5V, the diode will activate. The CPDVR083V3UA-HF is recommended for flow-through design on PCB layouts, where the traces enter one side of the device and exit the other.

The CPDVR083V3UA-HF array diode features a peak pulse power (PPP) value of 40W and a peak pulse current (IPP) value of 5 A. With an operating temperature range of -55°C to 125°C, the CPDVR083V3UA-HF is designed for production and its high temperature molding material can cycle through the reflow oven three times at 260°C for 10-12 seconds.

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