



Commercial-Grade and AEC-Q101 Qualified XClampR® Flat Clamping Bidirectional TVS in DO-218AC Package Deliver Low Clamping Voltage and High Power Density, With Clamping Ratio Near 1.0, Stand-off Voltages from 33 V to 85 V, and Peak Pulse Power Dissipation of 11 kW

Product Benefits:

- Surface-mount DO-218AC package
- Peak pulse power dissipation of 11 kW at 10/1000 μ s
- Low clamping ratio (VC/VBR) close to 1.0
- Available in commercial-grade and AEC-Q101 qualified versions
- Maximum clamping voltages from 40.6 V to 104.0 V
- Breakdown voltages from 36.7 V to 104 V
- Wide stand-off voltage range from 33 V to 85 V
- Peak pulse current up to 207.1 A at 10/1000 μ s and 2140 A at 8/20 μ s
- High temperature operation to +175 °C
- Low leakage current of 10 μ A maximum at stand-off voltage (VWM)
- Moisture sensitivity level (MSL) of 1 in accordance with J-STD-020, with a maximum peak reflow temperature of 245 °C
- Matte tin-plated leads are solderable per J-STD-002 and JESD 22-B102
- RoHS-compliant and halogen-free

Market Applications:

- Protection of sensitive electronics against voltage transients induced by inductive load switching and lightning
- Automotive applications including ADAS, autonomous driving control units (ADCU), on-board chargers (OBC), DC/DC converters, traction inverters, battery management systems (BMS), body control modules (BCM), park distance control (PDC), oil pumps, camera systems, and automatic air conditioning systems
- Energy storage systems; industrial servo motor systems, EPS, lighting systems, and automation controls; server power and AI server hot swap; telecom power supplies and T-Box DC/DC power conversion; and radar power supplies

The News:

Vishay Intertechnology introduces a new series of bidirectional XClampR® flat clamping transient voltage suppressors (TVS) in the surface-mount DO-218AC package. The industry's first such devices to provide peak pulse power dissipation comparable to 11 kW conventional TVS at 10/1000 μ s — while maintaining a low clamping ratio (VC/VBR) close to 1.0 for high power density — the Vishay General Semiconductor XFD11KxxCA series features 15 devices in both commercial-grade and AEC-Q101 qualified versions.

- The XFD11KxxCA series is designed to protect sensitive electronics against voltage transients induced by inductive load switching and lightning
- The devices' wide stand-off range supports 12 V, 24 V, and 48 V automotive system powertrains



- Compared to conventional devices in DO-218-compatible packages, the XFD11KxxCA series provides lower clamping voltage at the same stand-off voltage, while delivering approximately 1.6x higher peak pulse current
- The TVS feature low and stable clamping and breakdown voltages over a wide temperature range of -55 °C to +175 °C. This allows designers to select lower voltage downstream components — such as MOSFETs and capacitors — to reduce voltage overshoot and enable smaller design guard bands, lowering system costs
- The devices' high surge capability at 8/20 μ s supports low dynamic resistance and flat clamping performance, while their low leakage current minimizes power loss

The Key Specifications:

- Stand-off voltage: 33 V to 85 V
- Breakdown voltage: 36.7 V to 104 V
- Peak pulse power dissipation at 10/1000 μ s: 11 kW
- Maximum clamping voltage: 40.6 V to 104.0 V
- Peak pulse current
 - At 10/1000 μ s: 80.5 A to 207.1 A
 - At 8/20 μ s: 887 A to 2140 A
- Operating temperature range: -55 °C to +175 °C
- Maximum leakage current at stand-off voltage: 10 μ A
- Polarity: bidirectional
- Package: DO-218AC

Availability:

Samples and production quantities of the new TVS are available now, with lead times of 12 weeks.

To access the product datasheet on the Vishay Website, go to
<http://www.vishay.com/ppg?98838> (XFD11K33CA thru XFD11K85CA)

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