



The DNA of tech.®

DID YOU KNOW?

INDUSTRY-FIRST SNAPBACK TYPE

XClampR® TVS

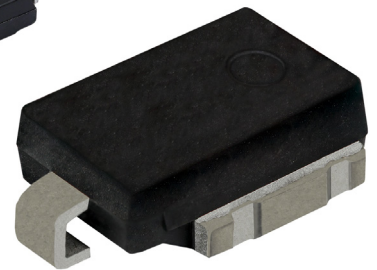
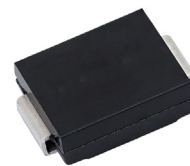
What Are the Key Features of XClampR® TVS?

- Designed to protect sensitive electronic equipment against voltage transients induced by inductive load switching and lightning
- With their low clamping voltage, XClampR TVS offer high peak pulse currents in the SMC (DO-214AB) and DO-218AC packages
- For applications with stand-off voltages greater than 24 V - such as 48 V belt starters (BSG) and integrated starter (ISG) generators in mild hybrid electric vehicles (HEV) - the devices can be paired with a standard TVS

What Are the Key Benefits of XClampR TVS?

- High peak pulse power dissipation
- 180 A at 10/1000 μ s, equivalent to a 7 kW power rating of conventional TVS, in the SMC (DO-214AB)
- 120 A and 180 A at 10/10 000 μ s, equivalent to a 4.6 kW and 7 kW power rating of conventional TVS, respectively, in the DO-218AC
- Low clamping voltage
 - Down to 24 V maximum in the SMC (DO-214AB)
 - Down to 26 V maximum in the DO-218AC
- Wide operating temperature range of -55 °C to +175 °C
- Suitable for high reliability applications
 - Available in AEC-Q101 qualified versions
 - Extremely stable breakdown voltage from 26.7 V to 29.5 V over their entire operating temperature range

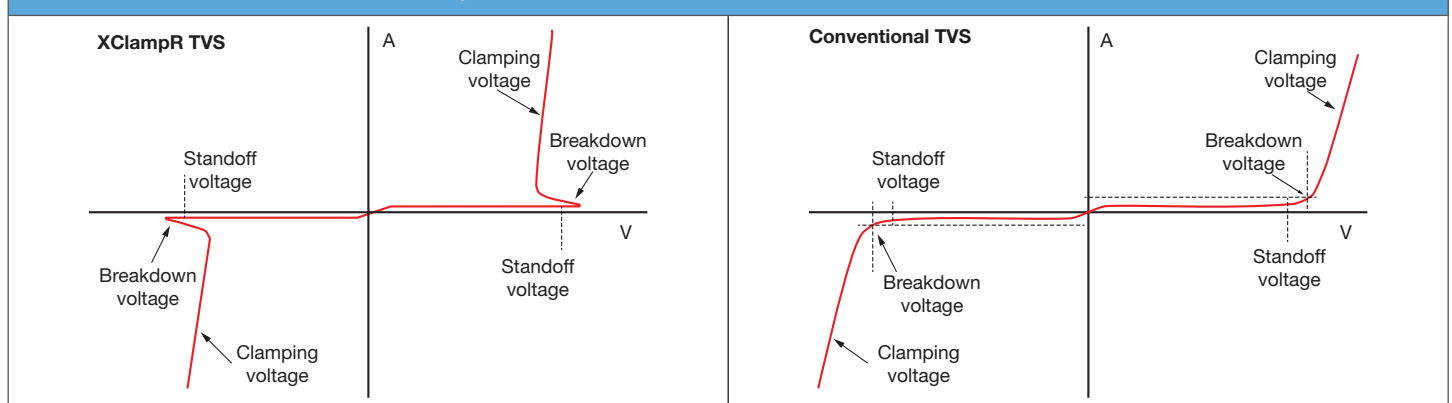
SMC (DO-214AB)



DO-218AC

Why Choose XClampR TVS?

TYPICAL OPERATION CURVE OF XClampR TVS AND CONVENTIONAL TVS



XClampR TVS are snapback type TVS with an extremely low clamping voltage ratio for suppressing transient voltages to lower clamping voltages than conventional TVS.

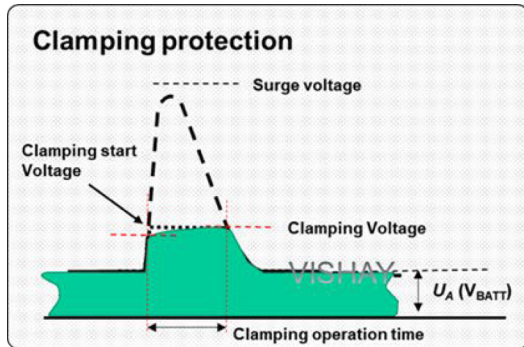


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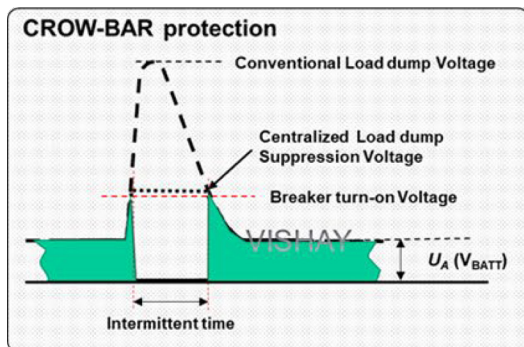
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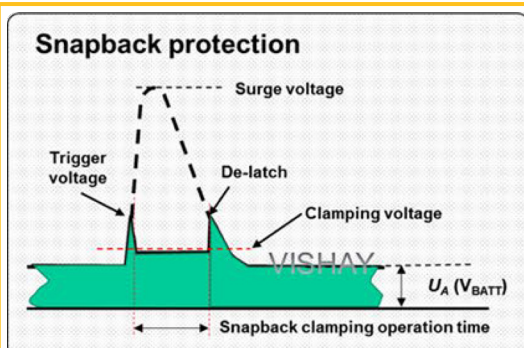
Overvoltage Protection Types



Circuit Type	ABD TVS, Zener, MOV
Advantage	• No electrical short • Accurate voltage protection control
Disadvantage	• High power derating device required



Circuit Type	Gas Discharge Tube Type Surge Arrestor, Thyristor, Load Switch
Advantage	• No electrical short (load switch type) • Simple and small device required (GDT, thyristor)
Disadvantage	• Intermittence time • Fuse blowout (thyristor type) • Circuit reset • Big capacitor and polarity protection diode required for power backup (load switch)



Circuit Type	ABD TVS, Zener, MOV
Advantage	• No electrical short • No intermittent time • Accurate voltage protection control
Disadvantage	• None



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The Key Specifications

XClampR® TRANSIENT VOLTAGE SUPPRESSORS			
PART NUMBER	<u>XLD5A24CA</u>	<u>XLD8A24CA</u>	<u>XMC7K24CA</u>
Maximum working stand-off voltage	24 V	24 V	24 V
Breakdown voltage	26.7 V to 29.5 V	26.7 V to 29.5 V	26.7 V to 29.5 V
Maximum clamping voltage	26 V	26 V	24 V
Peak pulse power (10/1000 µs)	7700 W ⁽¹⁾	11 000 W ⁽¹⁾	7000 W ⁽¹⁾
Peak pulse current (10/1000 µs)	200 A	300 A	180 A
Peak pulse power (10/10 000 µs)	4600 W ⁽¹⁾	7000 W ⁽¹⁾	1100 W ⁽¹⁾
Peak pulse current (10/10 000 µs)	120 A	180 A	30 A
Maximum reverse leakage current	1.0 µA	1.0 µA	1.0 µA
Maximum operating junction temperature	175 °C	175 °C	175 °C
Polarity	Bidirectional	Bidirectional	Bidirectional
Package	DO-218AC	DO-218AC	SMC (DO-214AB)

Note

(1) Equivalent IPPM with conventional TVS