HIGH-TEMPERATURE 10A, 1200V SIC SCHOTTKY DIODE

FEATURES

- ▲ Reverse voltage up to 1200V.
- ▲ Operational beyond the -60℃ to +230℃ temperature range.
- ▲ Positive temperature coefficient for safe operation and ease paralleling.
- ▲ Extremely fast switching not dependent on temperature.
- ▲ Essentially no reverse or forward recovery.
- ▲ Ruggedized thru-hole packages.
- ▲ Also available as bare die.

APPLICATIONS

- ▲ Reliability-critical, Automotive, Aeronautics & Aerospace, Down-hole.
- ▲ Power converters, motor drives, switched-mode power supplies, power factor conversion.

DESCRIPTION

XTR1K1210 is 10A, 1200V 4H-SiC junction barrier Schottky diode able to reliably operate from -60℃ to +230℃, with junction temperature able to reach +250℃.
This diode has zero reverse recovery charge, which makes it ideally suited for high-frequency and high-efficiency power systems with minimum or no cooling requirements.
XTR1K1210 has been designed to reduce system cost and ease adoption.
The XTR1K1210 is available in ruggedized thru-hole packages. Parts are also available as bare dies.

ORDERING INFORMATION

X	TR	1K	1210
↓	↓	↓	↓
Source: X = X-REL Semi	Process: TR = HiTemp, HiRel R = HiRel	Part family	Part number

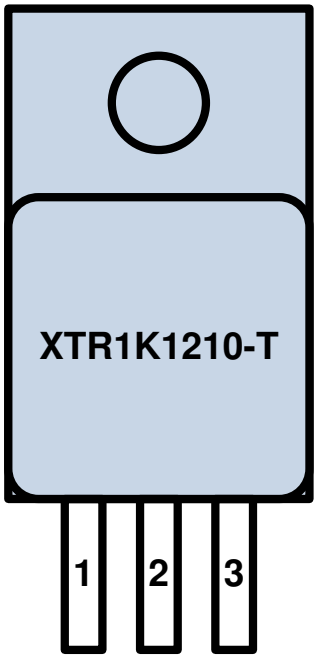
Product Reference	Temperature Range	Package	Pin Count	Marking
XTR1K1210-BD	-60℃ to +230℃	Bare die		XTR1K1210
XTR1K1210-T	-60℃ to +230℃	TO-257AA	3	XTR1K1210

Other packages and packaging configurations possible upon request.

PRODUCT PACKAGING

TO-257

Front view



1 Cathode
2 N.C.
3 Anode

ABSOLUTE MAXIMUM RATINGS

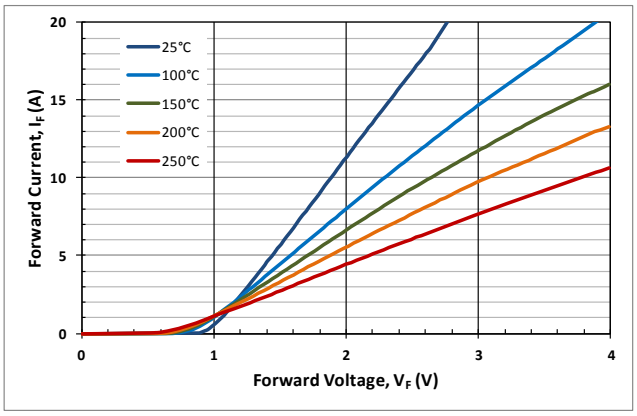
Parameter	Condition	Max	Units
DC Blocking Voltage V_{DC}		1200	V
Repetitive Peak Reverse Voltage V_{RRM}	T_C=25℃.	1200	V
Surge Peak Reverse Voltage V_{RSM}		1200	V
Maximum Average Forward Current $I_{F(AVE)}$		10	A
Non-Repetitive Forward Surge Current I_{FSM}		50	A
Power Dissipation P_{Tot}	T_C=25℃.	90	W
Derating Above T_C=25℃		0.4	W/℃
Maximum Junction Temperature T_{JMax}		250	℃
Storage Temperature T_{Stg}		-55 to +175	℃

Caution: Stresses beyond *those listed in "*ABSOLUTE MAXIMUM RATINGS*" may cause permanent damage to the device. These are* stress ratings only and functionality of the device at these or any other condition beyond those indicated in the operational sections of *the specifications is not implied. Exposure to "*ABSOLUTE MAXIMUM RATINGS*" conditions for extended periods may permanently* affect device reliability.

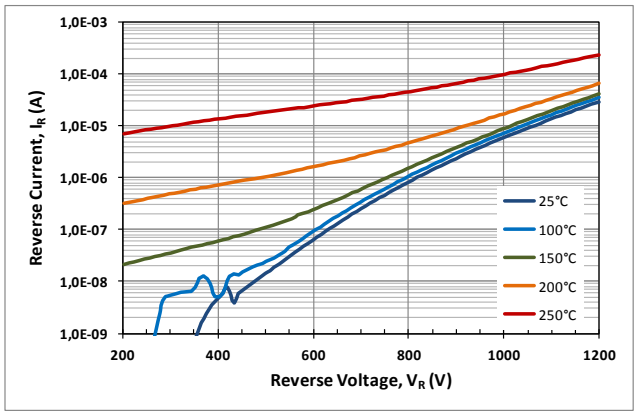
ELECTRICAL SPECIFICATIONS

Parameter	Condition	Min	Typ	Max	Units
Forward Voltage V_F	I_F=10A T_J=25℃ T_J=250℃		1.7	2.1 4.1	V
Reverse Current I_R	V_R=1200V T_J=25℃ T_J=250℃		0.04 0.25	0.2 3	mA
Junction-case Thermal Resistance $\Theta_{j\text{-}c}$	TO-257		3.6		℃/W

TYPICAL PERFORMANCE



Typical Forward I-V characteristics over Temperature.

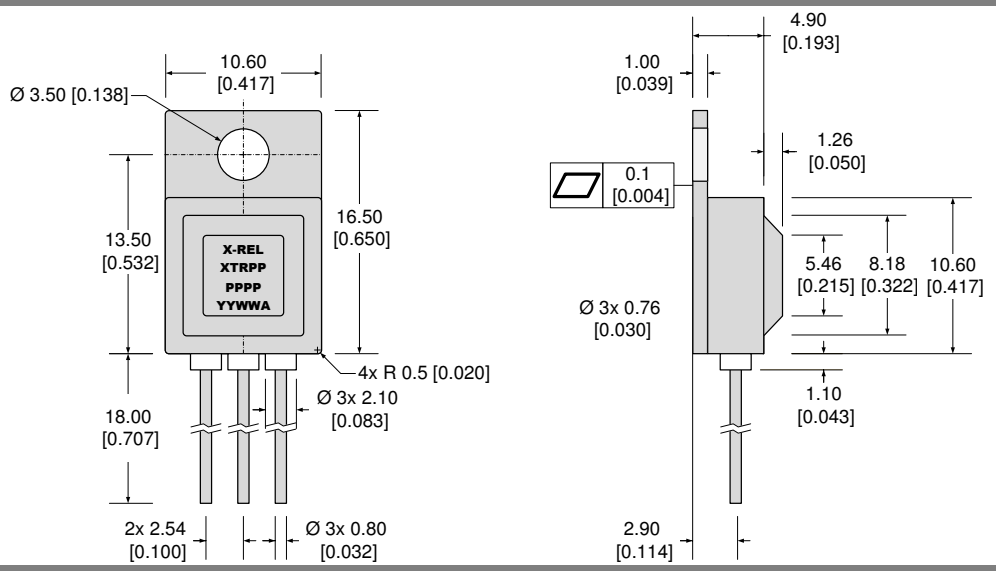


Typical Reverse I-V characteristics over Temperature.

PACKAGE OUTLINES

Dimensions shown in mm [inches].

TO-257 with Domed Lid



Part Marking Convention	
Part Reference: XTRPPPPPP	
XTR	X-REL Semiconductor, high-temperature, high-reliability product (XTRM Series).
PPPPP	Part number (0-9, A-Z).
Unique Lot Assembly Code: YYWWANN	
YY	Two last digits of assembly year (e.g. 11 = 2011).
WW	Assembly week (01 to 52).
A	Assembly location code.

IMPORTANT NOTICE & DISCLAIMER

CONTACT US

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