
CHT-IO-1210 DATASHEET

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14-Dec-23
(Last Modification Date)

High Temperature 1200V/10A Silicon Carbide Schottky Diode

General description

CHT-IO-1210 high temperature 1200V/10A Silicon Carbide Schottky Diode is designed to achieve high performance in an extremely wide temperature range: typical operation temperature goes from -55°C to 210°C while keeping leakage current low.

This device is packaged in a hermetically sealed TO-257 metal package especially designed and qualified to sustain high temperature and power cycling. This package offers high voltage isolation between pins and with respect to the case, facilitating the mounting on a heatsink.

The diode can be used in a variety of applications, including rectification, free-wheeling, clamping and general purpose.

Features

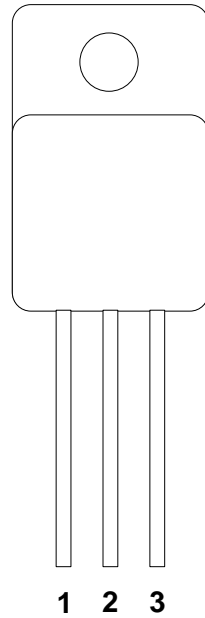
- Specified from **-55 to +210°C** (Tj)
- Reverse voltage: **$V_R = 1200V$** (max)
- Forward current: **$I_F = 10A$** (max @ 210°C (Tj) and $V_F = 1.7V$)
- Forward voltage:
 $V_F = 1.2V$ (typ. @ 25°C (Tj) and $I_F = 10A$)
- Junction capacitance:
 $C_j = 93pF$ (typ. @ $V_R = 400V$)
- Hermetically sealed TO-257 metal package
- Pins electrically isolated from the case

Applications

- Free Wheeling
- Full bridge rectification
- Power supplies
- General purpose diode

Package Configuration

FRONT VIEW



TO257 (Pin1= Cathode; Pin2= Anode Pin3= NC) (case floating)

Absolute Maximum Ratings

Reverse voltage V_R	1200V
Forward surge current I_{FSM}	12A
Junction temperature T_j	210°C

Operating Conditions

Reverse voltage V_R	0V to 1200V
Continuous forward current I_F	0A to 10A
Forward voltage V_F	0V to 3.5V
Junction temperature	-55°C to +210°C

Electrical characteristics

Unless otherwise stated, $T_j = 25^\circ\text{C}$. **Bold** figures point out values valid over the whole temperature range ($T_j = -55^\circ\text{C}$ to $+210^\circ\text{C}$).

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Forward voltage	V_F	$I_F=10\text{A}, T_j=25^\circ\text{C}$		1.5		V
		$I_F=10\text{A}, T_j=210^\circ\text{C}$		1.7		V
Reverse leakage current	I_R	$V_R=1200\text{V}, T_j=25^\circ\text{C}$		20		μA
		$V_R=1200\text{V}, T_j=210^\circ\text{C}$		500		μA
Breakdown reverse voltage	$V_{(BR)}$		1200			V
Junction capacitance	C_j	$V_R=400\text{V}, T_j=25^\circ\text{C}, f=100\text{kHz}$		93		pF

Thermal Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Junction-to-Case Thermal resistance	$R_{\theta JC}$			1.1		$^\circ\text{C/W}$

Typical performances

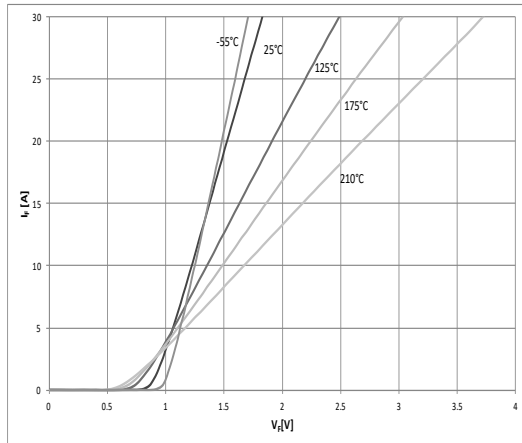


Figure 1: Diode I_F vs V_F

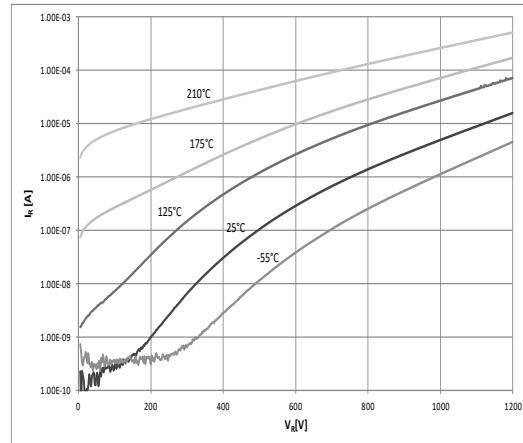


Figure 2: Diode I_R vs V_R

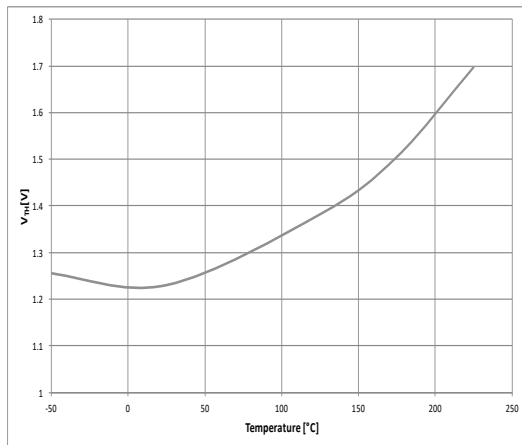


Figure 3: Diode V_F vs Temp ($I_F = 10$ A)

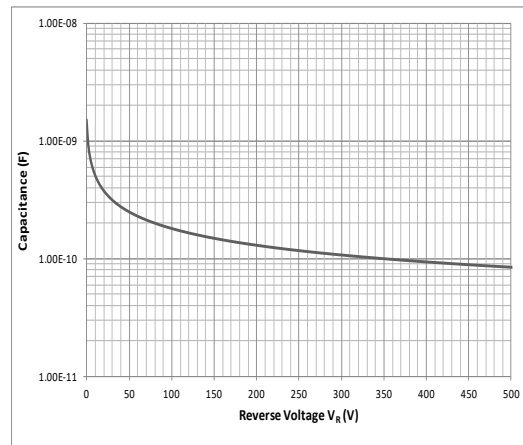
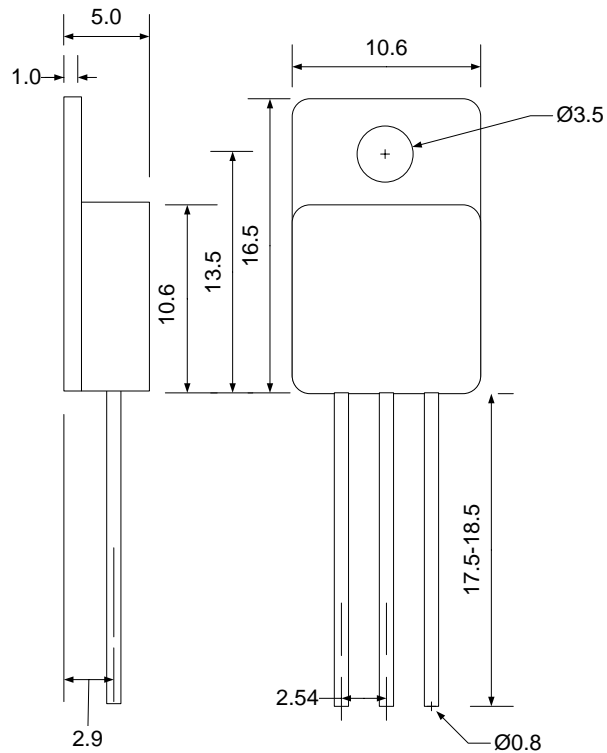


Figure 4: Typical capacitance vs V_R
($T_j=25^\circ\text{C}$; $f = 100$ kHz, $V_{AC} = 25\text{mV}$)

Package Dimensions



TO257 dimensions in mm (+/- 10%)

Ordering Information

Product Name	Ordering Reference	Package	Marking
CHT-IO-1210	CHT-PLA1122A-TO257-T	TO257	CHT-PLA1122A

Contact & Ordering

CISSOID S.A.

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