

CHT-EUROPA-A1220

Preliminary Datasheet

Version: 1.1

High Temperature 1200V/20A Dual SiC Schottky Diode Module

General description

CHT-EUROPA-A1220 is a high temperature 1200V/20A Dual Silicon Carbide Schottky diode in a single hermetic module. It is suitable for applications such as DC-DC converters, PFC, or motor drives in high temperature environments. The two independent diodes can be used in parallel to deliver a total of 40A. This product is guaranteed for normal operation on the full range -55°C to +210°C (Tj). Each diode has a breakdown voltage in excess of 1200V. Schottky diode features fast switching, zero reverse recovery current.

Benefits

- Support of high-frequency switching (almost no switching losses)
- Reduced Heat Sink requirement
- Extended lifetime and high reliability
- Harsh environments and high temperature power converters

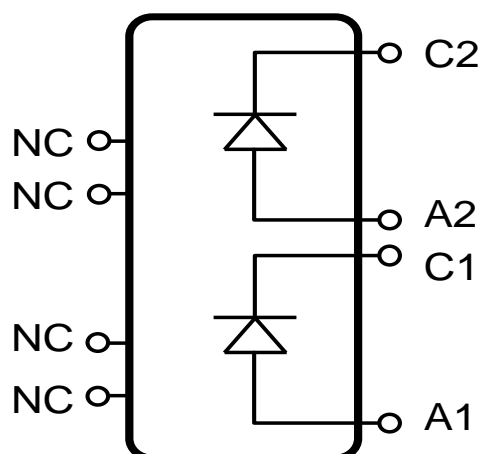
Applications

- AC rectification bridge
- Power Factor Correction
- DC motor drives and actuator control
- DC-DC converters

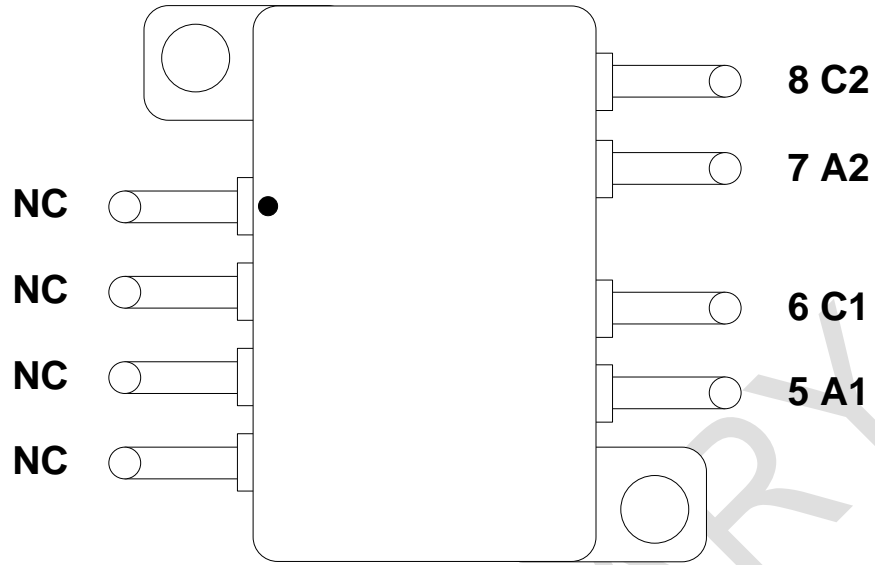
Features (per diode)

- Specified from -55 to +210°C (Tj)
- Max Reverse Voltage V_R : 1200V
- Forward Voltage V_{FWD} : 1.5V @ 20A
- Max Continuous Current: 20A
- Max Peak Rep Fwd Surge Current: 35A
- Hermetic package with isolated case

Functional Block Diagram



Package configuration and Pin Description



Pin ID	Pin Name	Pin Description	Pin Finish
1	NC	Not connected Pin	Nickel
2	NC	Not connected Pin	Nickel
3	NC	Not connected Pin	Nickel
4	NC	Not connected Pin	Nickel
5	A1	Anode of Diode 1 (Power Pin)	Nickel
6	C1	Cathode of Diode 1 (Power Pin)	Gold
7	A2	Anode of Diode 2 (Power Pin)	Nickel
8	C2	Cathode of Diode 2 (Power Pin)	Gold
	Body	Package body (isolated from Pins)	Nickel

Abs. Max. Ratings (per diode)

DC Blocking Voltage	1200V
Continuous Forward Current	20A
Max Junction temperature T_{jmax}	210°C
Power dissipation at $T_c=175^\circ\text{C}$ (*)	45W

Operating Conditions (per diode)

DC Blocking Voltage	1200V
Continuous Forward Current	20A
Rep. Peak Fwd Surge Current	35A
Junction temperature	-55°C to +210°C

ESD Rating

Human Body Model	>2kV
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(*): per diode

PRELIMINARY

Electrical characteristics (per diode)

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
DC Blocking Voltage	V_{DC}		1200			V
Forward Voltage	V_F	$T_j = 25^\circ\text{C}; I_F = 20\text{A}$		1.5		V
		$T_j = 210^\circ\text{C}; I_F = 20\text{A}$		2.7		V
Reverse Current	I_R	$T_j = 25^\circ\text{C}; V_R = 1200\text{A}$		20		μA
		$T_j = 210^\circ\text{C}; V_R = 1200\text{A}$		500		μA
Total Capacitive Charge	Q_C	$I = 20\text{A}, V_R = 600\text{V}, T_j = 25^\circ\text{C}, di/dt = 500\text{A}/\mu\text{s}$		61		nC
Total Capacitance	C	$T_j = 25^\circ\text{C}; V_R = 0\text{V}; f = 1\text{ MHz}$		TBD		pF
		$T_j = 25^\circ\text{C}; V_R = 200\text{V}; f = 1\text{ MHz}$		TBD		pF
		$T_j = 25^\circ\text{C}; V_R = 400\text{V}; f = 1\text{ MHz}$		TBD		pF

Thermal Characteristics (per diode)

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

Typical performances

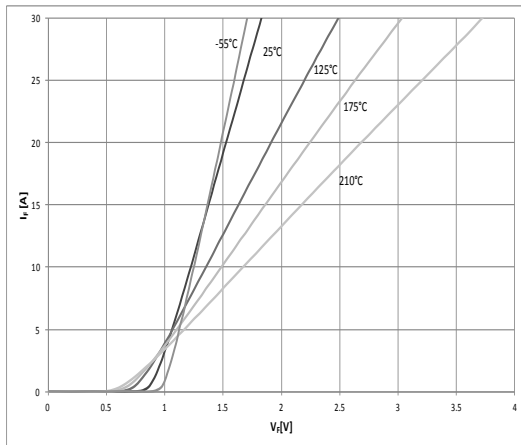


Figure 1: Diode I_F vs V_F

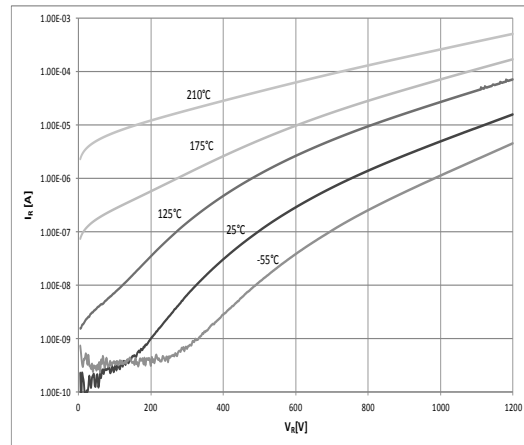
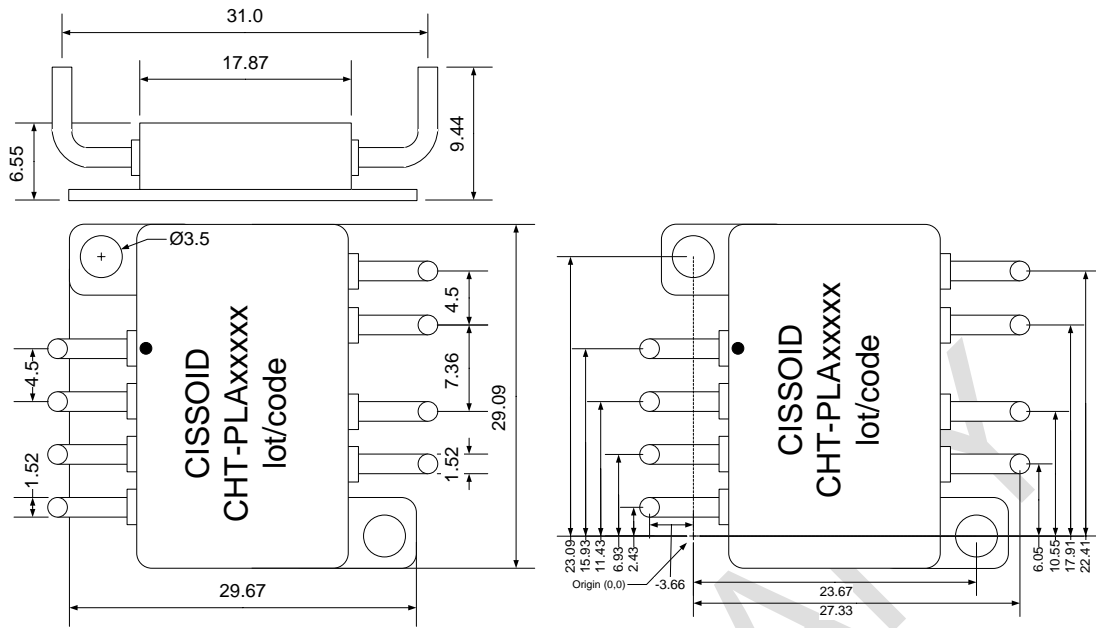


Figure 2: Diode I_R vs V_R

Package Dimensions



HM8A dimensions in mm (+/- 10%)

Ordering Information

Product Name	Ordering Reference	Package	Marking
CHT-EUROPA-A1220	CHT-PLA3143A-HM8A-T	HM8A	CHT-PLA3143A

Related products

Product Name	Function	Ordering Reference
CHT-EUROPA-A1230	Dual 1200V/30A Schottky Diode Module	CHT-PLA1971A-HM8A-T

Contact & Ordering

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