

Silicon Carbide Schottky Diode

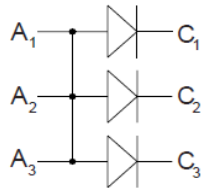
Part Number	V_{RRM} (V)	$I_{F(AVG)}$ (A)	Configuration
SS275TA12205	1200	5	Triple Common Anode
SS275TC12205	1200	5	Triple Common Cathode
SS275TI12205	1200	5	Triple Independent

$$V_{RRM} = 1200 \text{ V}$$

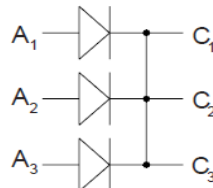
$$I_{F(AVG)} = 5 \text{ A}$$

$$C_J = 90 \text{ pF}$$

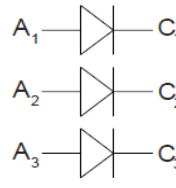
Triple Anode (TA)



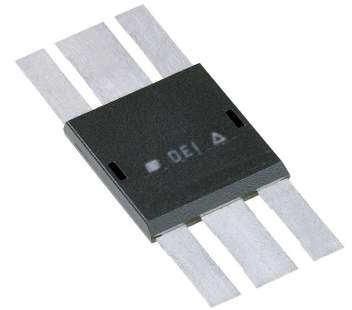
Triple Cathode (TC)



Triple Independent (TI)



A = Anode C = Cathode



Symbol	Parameter per diode	Test Conditions	Maximum Ratings
V_{RRM}	Repetitive Peak Reverse Voltage		1200 V
V_{RSM}	Repetitive Surge Reverse Voltage		1200 V
V_{DC}	DC Blocking Voltage		1200 V
$I_{F(AVG)}$	Average Forward Current	$T_J = 175^\circ\text{C}$	5 A
I_{FRM}	Repetitive Peak Forward Surge Current	$T_C = 25^\circ\text{C}$, $t_p = 8 \text{ ms}$ Half Sine Wave	30 A
I_{FSM}	Non-Repetitive Peak Forward Surge Current	$T_C = 25^\circ\text{C}$, $t_p = 10 \text{ ms}$ Pulse	100 A
T_{VJ}	Operating Virtual Junction Temperature		-55 to +175 °C
T_{STG}	Storage Temperature		-55 to +175 °C
P_{TOT}	$T_C = 25^\circ\text{C}$ (33.3 W per diode)		100 W

Features

- 1200 V SiC Schottky Diode
- Surface Mount Package
- Zero Reverse Recovery
- Zero Forward Recovery
- High-Frequency Operation
- Temperature-Independent Behavior
- Positive Temperature Coefficient for V_F

Applications

- MHz Switch Mode Power Supplies
- High-Frequency Converters
- Resonant Converters
- Rectifier Circuits

Symbol	Parameter per diode	Test Conditions	Characteristic Values		
$T_J = 25^\circ\text{C}$ unless otherwise specified			Typ.	Max.	Units
V_F	Forward Voltage	$I_F = 5 \text{ A}$, $T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	1.5 2.5	1.8 3	V
I_R	Reverse Current	$V_R = 1200 \text{ V}$, $T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	50 100	200 1000	μA
C_J	Junction Capacitance	$f = 1 \text{ MHz}$, $V_R = 0 \text{ V}$ $V_R = 200 \text{ V}$ $V_R = 1200 \text{ V}$	575 120 90		pF
Q_C	Capacitive Charge	$V_R = 1200 \text{ V}$	108		nC
R_{THJC}	Thermal Resistance		1.5		$^\circ\text{C/W}$
T_L	Lead Soldering Temperature	1.6 mm (0.063 in) from case for 10 s	300		$^\circ\text{C}$
Isolation	Pin to Substrate Pin to Pin		>2000 >1700		V_{RMS}
Weight			2		g

Fig. 1

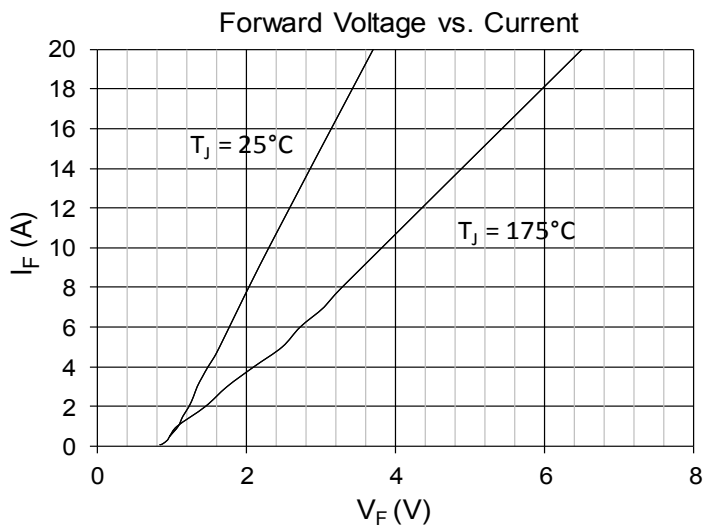


Fig. 2

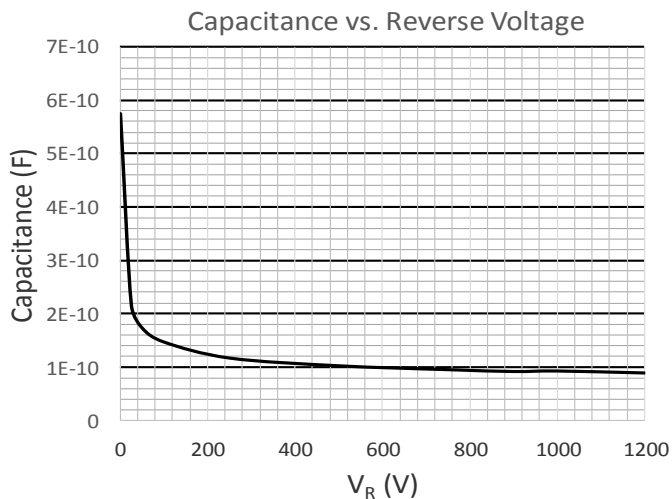


Fig. 3

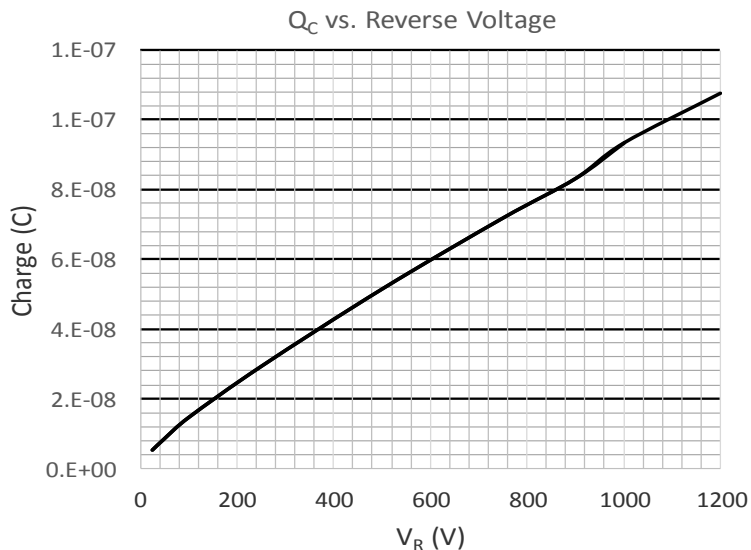


Fig. 4

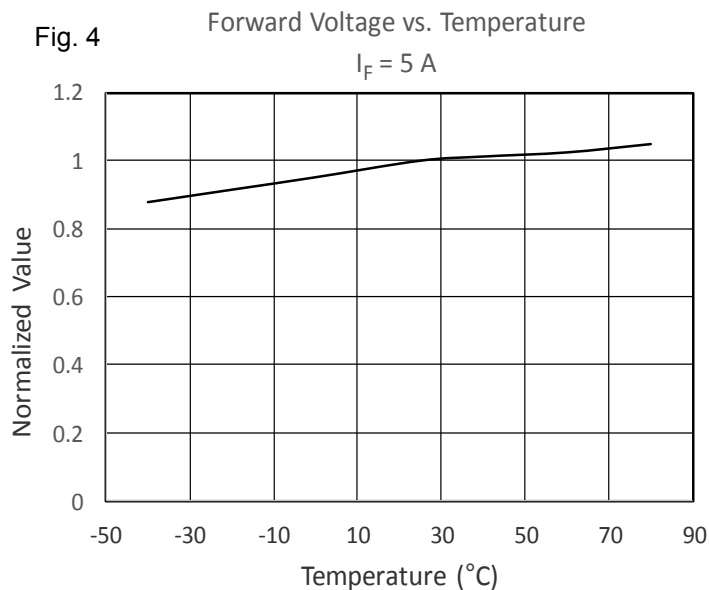


Fig. 5

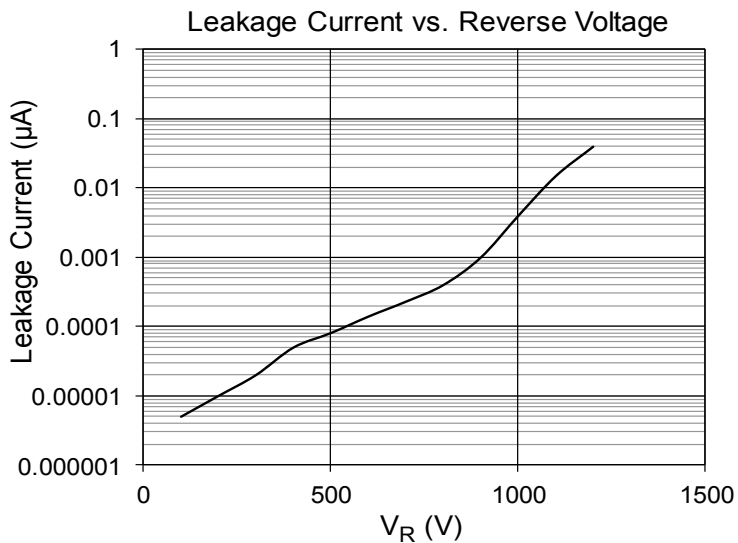
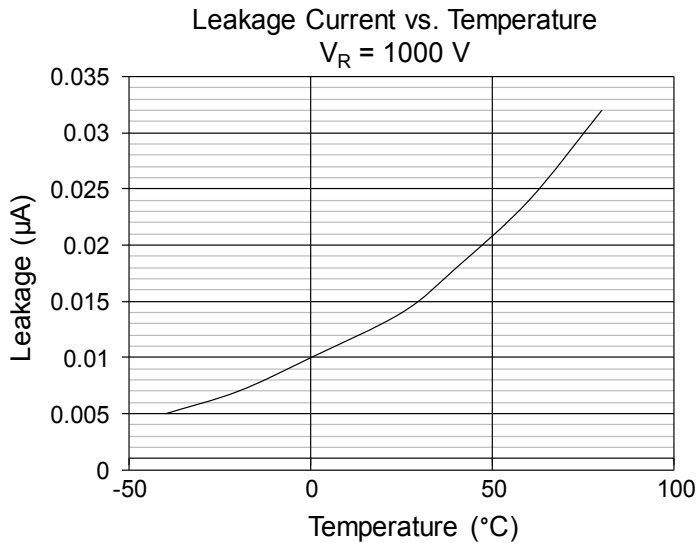


Fig. 6



Package Diagram

The diagram shows three views of the IXYS 100W100 package:

- Top View:** Shows the package layout with dimensions: 1.45 [36.8] total width, 0.130 [3.30] and 0.070 [1.78] for lead spacing, 0.180 [4.57] for lead width, 0.050 [1.27] and 0.220 [5.59] for mounting pad spacing, 0.580 [14.73] for mounting pad width, and a 0.050 [1.27] chamfer.
- Bottom View:** Shows the DCB (Direct Copper Bonded) area with dimensions: 0.530 [13.46] for the central area, 0.060 [1.52] for the lead spacing, and 0.650 [16.51] for the total width. The DCB is labeled "N/C".
- Side View:** Shows the package profile with dimensions: 0.125 [3.18] for the total height, 0.006 [0.15] for the lead height, and 0.049 [1.24] for the mounting pad height. The DCB side is labeled "DCB SIDE".

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DCB – Direct Copper Bond under Nickel plating on an Aluminum Nitride substrate, electrically isolated from any pin.