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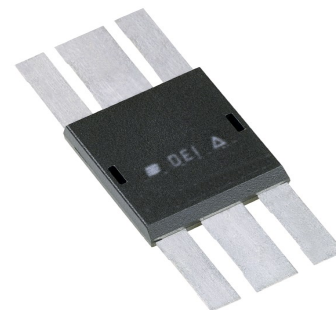
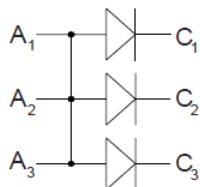
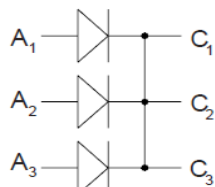
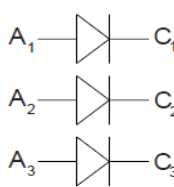
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# Silicon Carbide Schottky Diode

 **$V_{RRM} = 600\text{ V}$** 
 **$I_{F(AVG)} = 10\text{ A}$** 
 **$C_J = 120\text{ pF}$** 

| Part Number  | $V_{RRM}$ (V) | $I_{F(AVG)}$ (A) | Configuration         |
|--------------|---------------|------------------|-----------------------|
| SS150TA60110 | 600           | 10               | Triple Common Anode   |
| SS150TC60110 | 600           | 10               | Triple Common Cathode |
| SS150TI60110 | 600           | 10               | Triple Independent    |


**Triple Anode (TA)**

**Triple Cathode (TC)**

**Triple Independent (TI)**


A = Anode C = Cathode

| Symbol       | Parameter per diode                        | Test Conditions   | Maximum Ratings | Features   |
|--------------|--|---|-----------------|--|
| $V_{RRM}$    | Repetitive Peak Reverse Voltage            |   | 600 V           | <ul style="list-style-type: none"> <li>600 V SiC Schottky Diode</li> <li>Surface Mount Package</li> <li>Zero Reverse Recovery</li> <li>Zero Forward Recovery</li> <li>High Frequency Operation</li> <li>Temperature Independent Behavior</li> <li>Positive Temperature Coefficient for <math>V_F</math></li> </ul> |
| $V_{RSM}$    | Repetitive Surge Reverse Voltage           |   | 600 V           |  |
| $V_{DC}$     | DC Blocking Voltage                        |   | 600 V           |  |
| $I_{F(AVG)}$ | Average Forward Current                    | $T_J = 175^\circ\text{C}$   | 10 A            |  |
| $I_{FRM}$    | Repetitive Peak Forward Surge Current      | $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ ms}$<br>Half Sine Wave | 67 A            |  |
| $I_{FSM}$    | Non-Repetitive Peak Forward Surge Current  | $T_C = 25^\circ\text{C}$ , $t_p = 10\ \mu\text{s}$<br>Pulse       | 250 A           |  |
| $T_{VJ}$     | Operating Virtual Junction Temperature     |   | -55 to +175 °C  |  |
| $T_{STG}$    | Storage Temperature                        |   | -55 to +175 °C  |  |
| $P_{TOT}$    | $T_C = 25^\circ\text{C}$ (30 W/ per diode) |   | 90 W            |  |

**Features**

- 600 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                      | Test Conditions   | Characteristic Values |           |                    |
|---|--------------------------------|---|-----------------------|-----------|--------------------|
|   |                                |   | Typ.                  | Max.      | Units              |
| $T_J = 25^\circ\text{C}$ unless otherwise specified |                                |   |                       |           |                    |
| $V_F$   | Forward Voltage                | $I_F = 5\text{ A}$ , $T_J = 25^\circ\text{C}$<br>$T_J = 175^\circ\text{C}$              | 1.7<br>2.2            | 2<br>2.5  | V                  |
| $I_R$   | Reverse Current                | $V_R = 600\text{ V}$ , $T_J = 25^\circ\text{C}$<br>$T_J = 175^\circ\text{C}$            | 10<br>20              | 50<br>200 | $\mu\text{A}$      |
| $C_J$   | Junction Capacitance           | $f = 1\text{ MHz}$ , $V_R = 0\text{ V}$<br>$V_R = 200\text{ V}$<br>$V_R = 600\text{ V}$ | 600<br>130<br>120     |           | pF                 |
| $Q_C$   | Capacitive Charge              | $V_R = 600\text{ V}$  | 72                    |           | nC                 |
| $R_{THJC}$  | Thermal Resistance             |   | 1.7                   |           | $^\circ\text{C/W}$ |
| $T_L$   | Lead Soldering Temperature     | 1.6 mm (0.063 in) from case for 10 s  | 300                   |           | $^\circ\text{C}$   |
| <b>Isolation</b>                                    | Pin to Substrate<br>Pin to Pin |   | >1800<br>>1500        |           | $V_{RMS}$          |
| <b>Weight</b>                                       |                                |   | 2                     |           | g                  |

Fig. 1

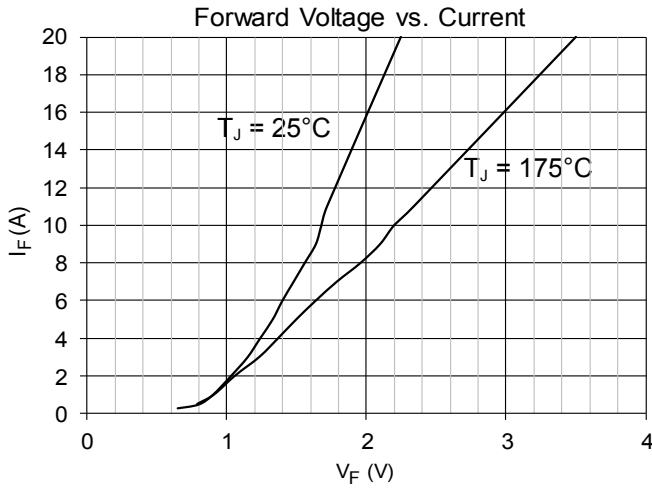


Fig. 2

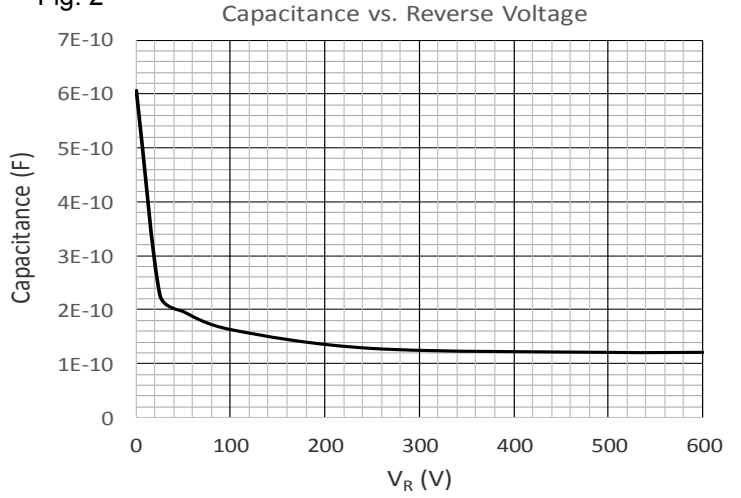


Fig. 3

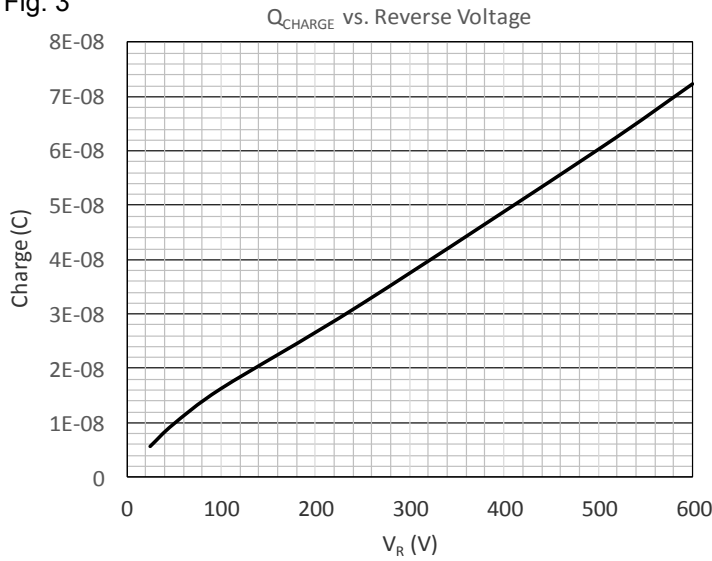


Fig. 4

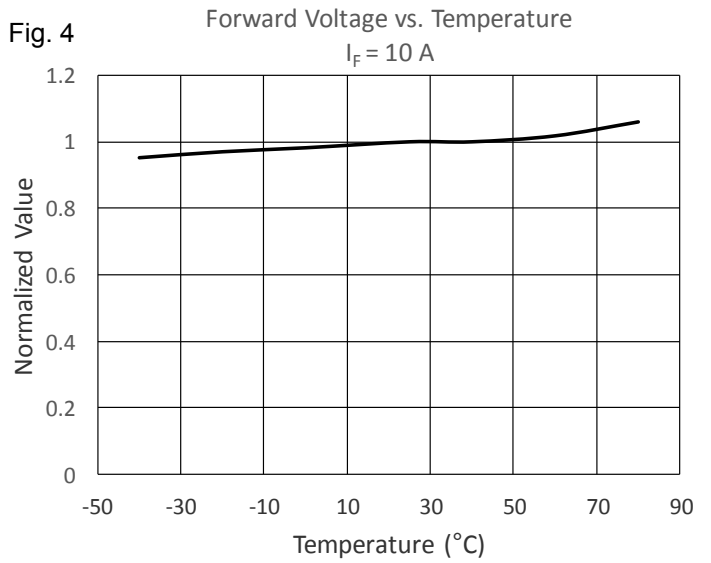


Fig. 5

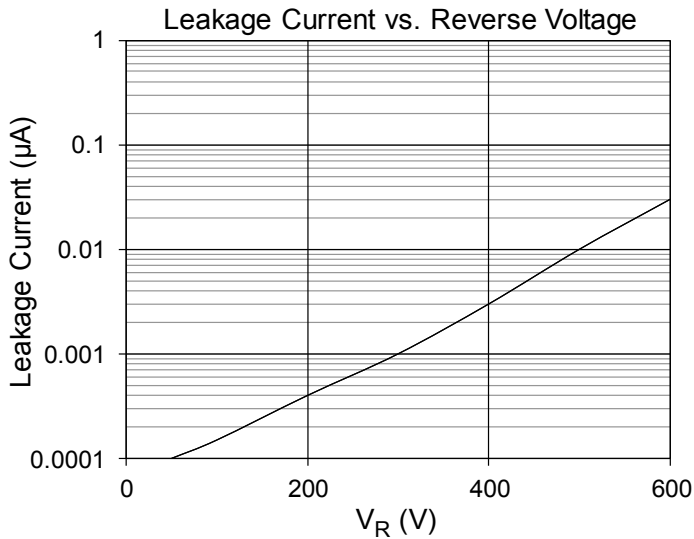


Fig. 6

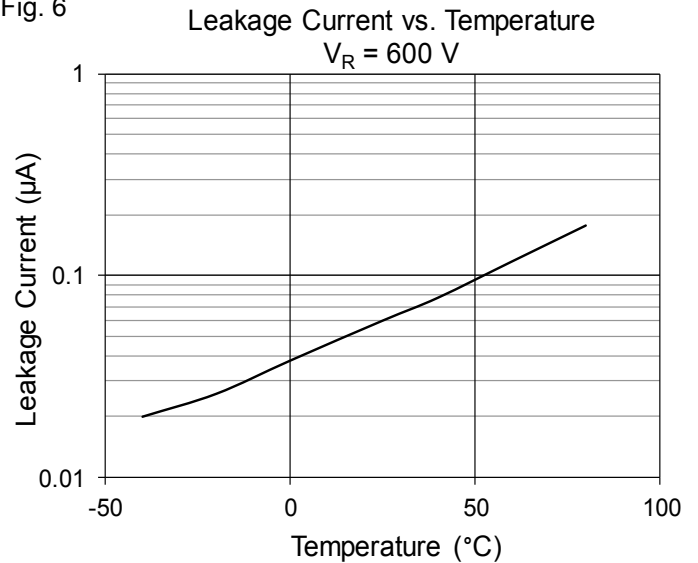
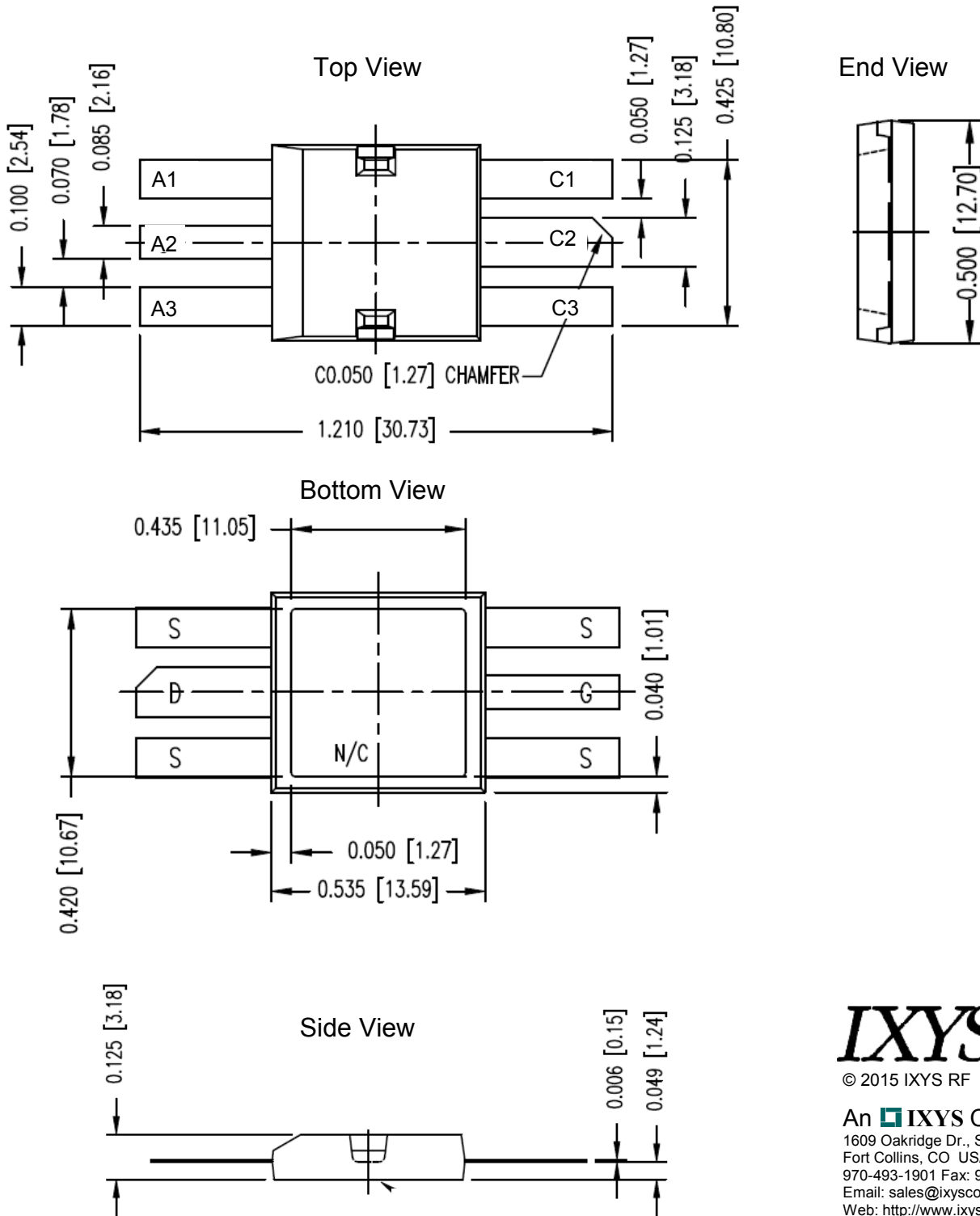




Fig. 7 Package Diagram



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