

**Major Ratings and Characteristics**

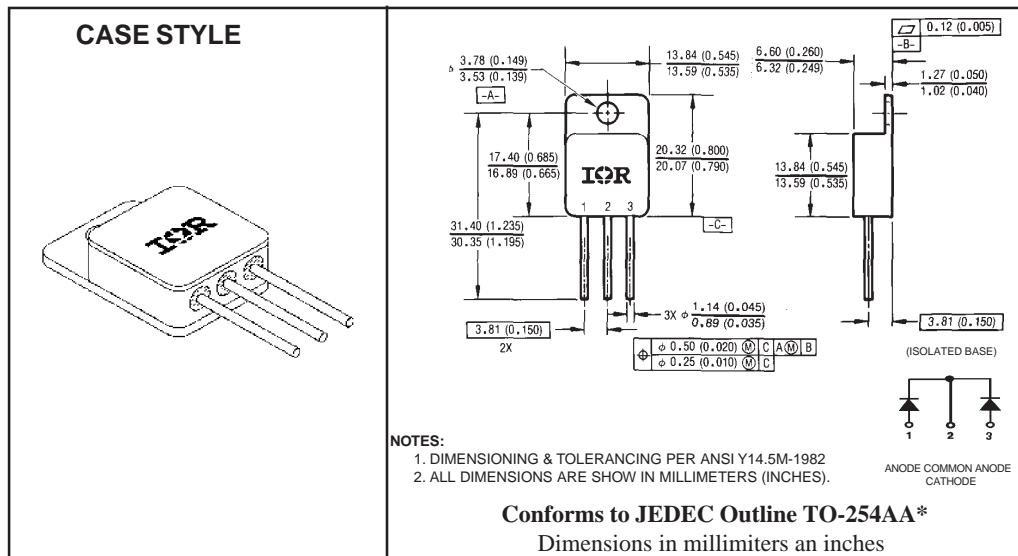
| Characteristics                              | 22CGQ045   | Units      |
|--|------------|------------|
| $I_{F(AV)}$ Rectangular waveform             | 35*        | A          |
| $V_{RRM}$                                    | 45         | V          |
| $I_{FSM}$ @ $t_p = 8.3ms$ sine               | 300        | A          |
| $V_F$ @ 20Apk, $T_J = 125^\circ C$ (Per Leg) | 0.70       | V          |
| $T_J, T_{stg}$ Operating and storage         | -55 to 150 | $^\circ C$ |

\* $I_{F(AV)}$  current limited by pin diameter

**Description/Features**

The 22CGQ045 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic, isolated, TO-254AA package and has extremely low reverse leakage at high temperature. Full MIL-PRF-19500 quality conformance testing is available on source controlled drawings to JANTX, JANTXV, or JANS levels. Typical applications include switching power supplies and resonant power converters.

- Hermetically sealed
- Center tap
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Electrically isolated
- Ceramic eyelets



**Voltage Ratings**

|  |          |
|--|----------|
| Part number  | 22CGQ045 |
| V <sub>R</sub> Max. DC Reverse Voltage (V) (Per Leg)             | 45       |
| V <sub>RWM</sub> Max. Working Peak Reverse Voltage (V) (Per Leg) |          |

**Absolute Maximum Ratings**

| Parameters  | 22CGQ045 | Units | Conditions   |
|---|----------|-------|--|
| I <sub>F(AV)</sub> Max. Average Forward Current<br>*See Fig. 4                | 35*      | A     | 50% duty cycle @ T <sub>C</sub> = 100°C, rectangular waveform<br>*I <sub>F(AV)</sub> current limited by pin diameter |
| I <sub>FSM</sub> Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg) | 300      | A     | @ t <sub>p</sub> = 8.3 ms sine   |

**Electrical Specifications**

| Parameters   | 22CGQ045 | Units | Conditions  |
|--|----------|-------|---|
| V <sub>FM</sub> Max. Forward Voltage Drop (Per Leg) *See Fig. 1 ①    | 0.75     | V     | @ 20A<br>T <sub>J</sub> = 25°C  |
|  | 0.97     | V     | @ 35A   |
|  | 0.70     | V     | @ 20A<br>T <sub>J</sub> = 125°C   |
|  | 0.91     | V     | @ 35A   |
| I <sub>RM</sub> Max. Reverse Leakage Current (Per Leg) *See Fig. 2 ① | 0.5      | mA    | T <sub>J</sub> = 25°C   |
|  | 20       | mA    | T <sub>J</sub> = 125°C<br>V <sub>R</sub> = rated V <sub>R</sub>             |
| C <sub>T</sub> Max. Junction Capacitance (Per Leg)                   | 1400     | pF    | V <sub>R</sub> = 5V <sub>DC</sub> , (test signal range 100KHz to 1MHz) 25°C |
| L <sub>S</sub> Typical Series Inductance (Per Leg)                   | 8.7      | nH    | Measured lead to lead 5mm from package body                                 |

**Thermal-Mechanical Specifications**

| Parameters  | 22CGQ045   | Units  | Conditions                           |
|---|------------|--------|--------------------------------------|
| T <sub>J</sub> Max. Junction Temperature Range                            | -55 to 150 | °C     |                                      |
| T <sub>stg</sub> Max. Storage Temperature Range                           | -55 to 150 | °C     |                                      |
| R <sub>thJC</sub> Max. Thermal Resistance, Junction to Case (Per Leg)     | 1.25       | °C/W   | DC operation *See Fig. 5             |
| R <sub>thJC</sub> Max. Thermal Resistance, Junction to Case (Per Package) | 0.625      | °C/W   | DC operation                         |
| R <sub>thCS</sub> Typical Thermal Resistance, Case to Heatsink            | 0.21       | °C/W   | Mounting surface, smooth and greased |
| wt Weight (Typical)   | 9.3        | g      |                                      |
| Die Description (Square)  | 0.150      | inches |                                      |
| Case Style  | TO-254AA   | JEDEC  |                                      |

① Pulse Width &lt; 300μs, Duty Cycle &lt; 2%

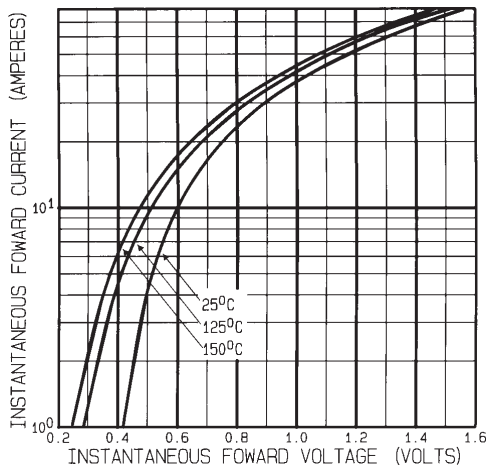


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

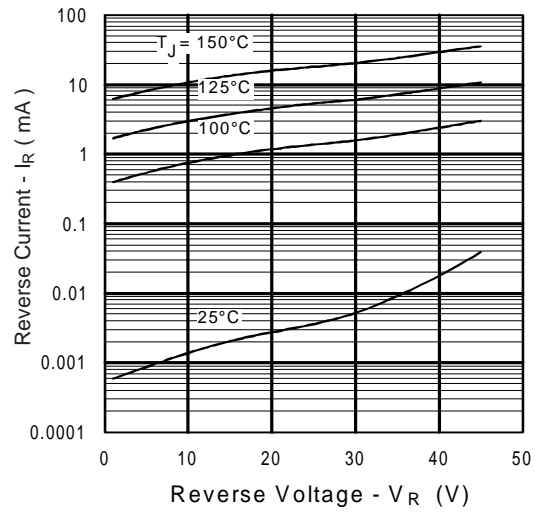


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

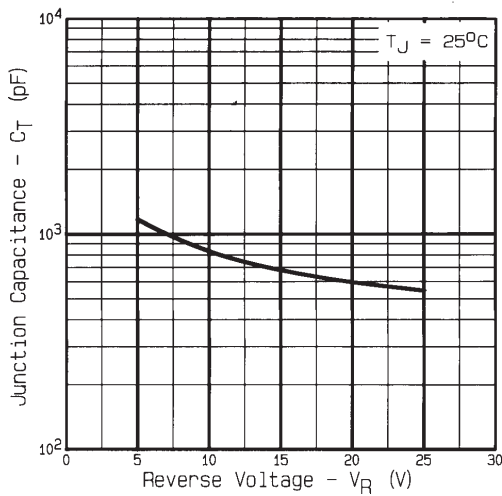


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

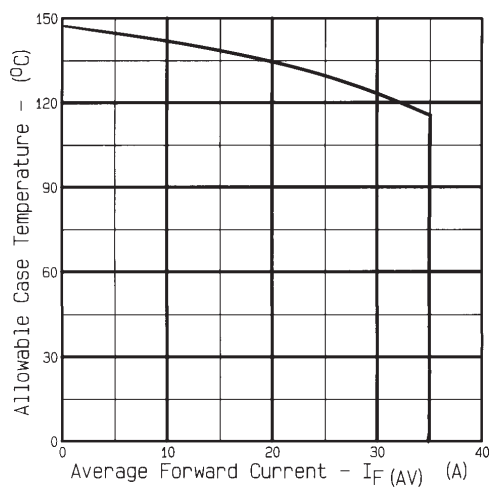


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

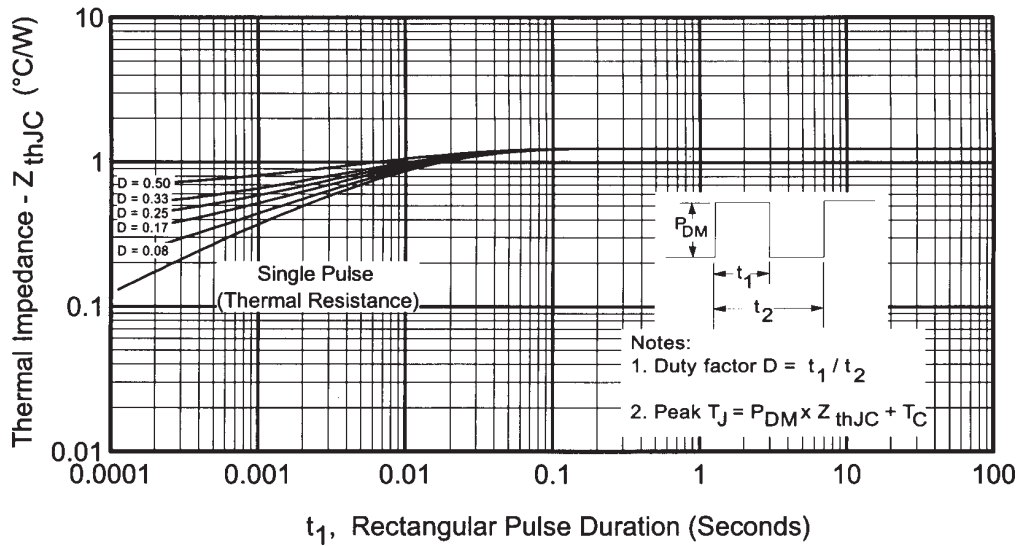


Fig.5 - Max. Thermal Impedance  $Z_{thJC}$  characteristics (Per Leg)