

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

16SYQ030C
16A, 30V

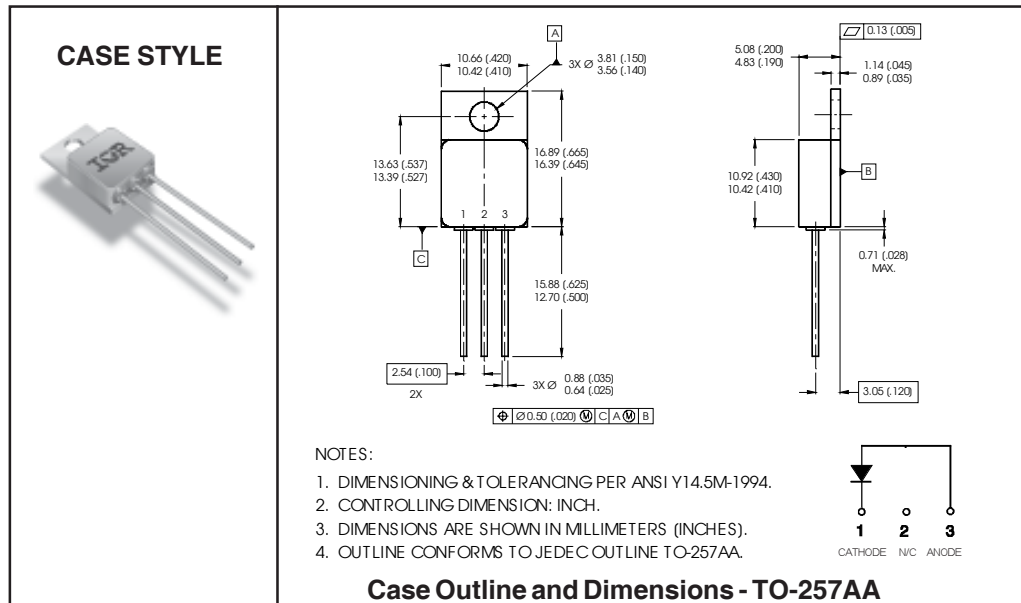
Major Ratings and Characteristics

| Characteristics | 16SYQ030C | Units |
|--------------------------------------|------------|------------|
| $I_{F(AV)}$ | 16 | A |
| V_{RRM} | 30 | V |
| I_{FSM} @ $t_p = 8.3ms$ half-sine | 300 | A |
| V_F @ 16Apk, $T_J = 125^\circ C$ | 0.49 | V |
| T_J, T_{STG} Operating and storage | -55 to 150 | $^\circ C$ |

Description/Features

The 16SYQ030C Schottky rectifier has been expressly designed to meet the rigorous requirements of HiRel environments. It is packaged in the hermetic isolated TO-257AA ceramic package. The device's forward voltage drop and reverse leakage current are optimized for the lowest power loss and the highest circuit efficiency for typical high frequency switching power supplies and resonant power converters. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S levels.

- Hermetically Sealed
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight



Voltage Ratings

| | |
|--|-----------|
| Part number | 16SYQ030C |
| V _R Max. DC Reverse Voltage (V) | 30 |
| V _{RWM} Max. Working Peak Reverse Voltage (V) | |

Absolute Maximum Ratings

| Parameters | Limits | Units | Conditions |
|---|--------|-------|--|
| I _{F(AV)} Max. Average Forward Current See Fig. 5 | 16 | A | 50% duty cycle @ T _C = 133°C, square waveform |
| I _{FSM} Max. Peak One Cycle Non - Repetitive Surge Current | 300 | A | @ t _p = 8.3 ms half-sine |

Electrical Specifications

| Parameters | Limits | Units | Conditions |
|---|--------|-------|---|
| V _{FM} Max. Forward Voltage Drop See Fig. 1 ^① | 0.55 | V | @ 10A T _J = -55°C |
| | 0.61 | V | @ 16A |
| | 0.47 | V | @ 10A T _J = 25°C |
| | 0.55 | V | @ 16A |
| | 0.38 | V | @ 10A T _J = 125°C |
| | 0.49 | V | @ 16A |
| I _{RM} Max. Reverse Leakage Current See Fig. 2 ^① | 1.0 | mA | T _J = 25°C V _R = rated V _R |
| | 300 | mA | T _J = 125°C |
| C _T Max. Junction Capacitance | 4000 | pF | V _R = 5V _{DC} (1MHz, 25°C) |
| L _S Typical Series Inductance | 9.8 | nH | Measured from anode lead to cathode lead 6mm (0.025 in.) from package |

Thermal-Mechanical Specifications

| Parameters | Limits | Units | Conditions |
|---|------------|-------|-------------------------|
| T _J Max. Junction Temperature Range | -55 to 150 | °C | |
| T _{stg} Max. Storage Temperature Range | -55 to 150 | °C | |
| R _{thJC} Max. Thermal Resistance, Junction to Case | 1.15 | °C/W | DC operation See Fig. 4 |
| wt Weight (Typical) | 4.3 | g | |
| Die Size | 200X200 | mils | |
| Case Style | TO-257AA | | |

① Pulse Width < 300µs, Duty Cycle < 2%

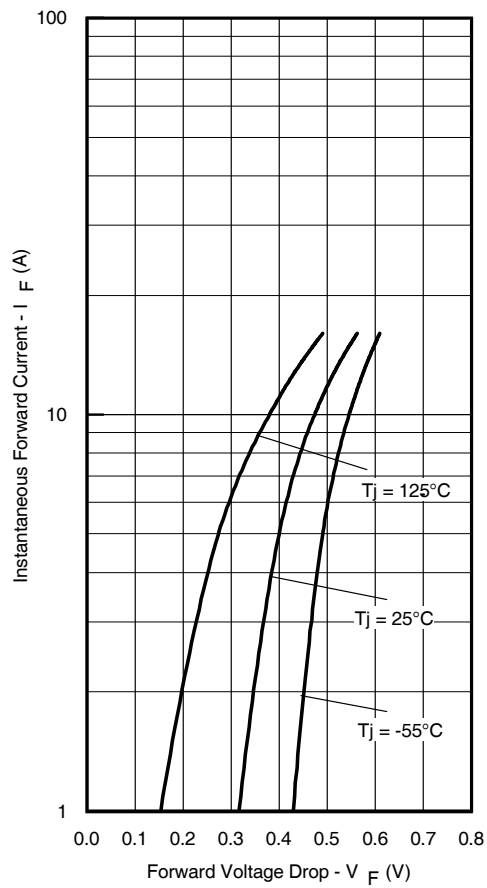


Fig. 1 - Max. Forward Voltage Drop Characteristics

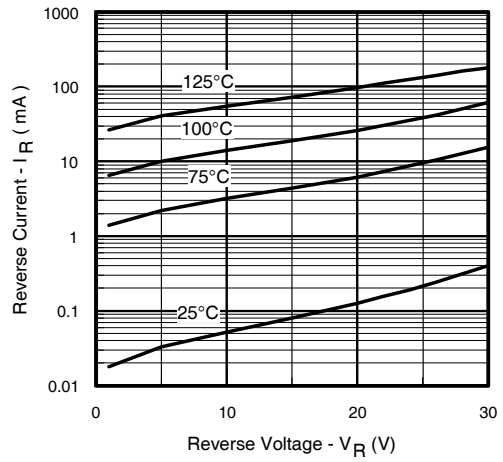


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

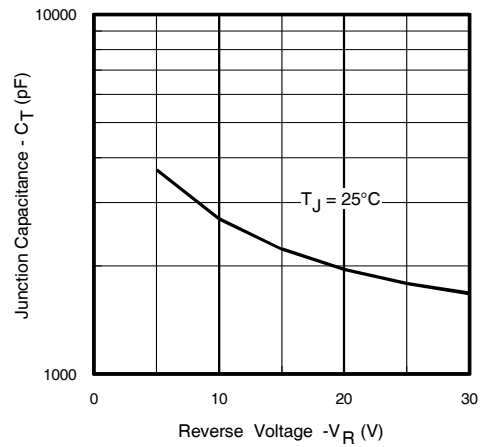


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

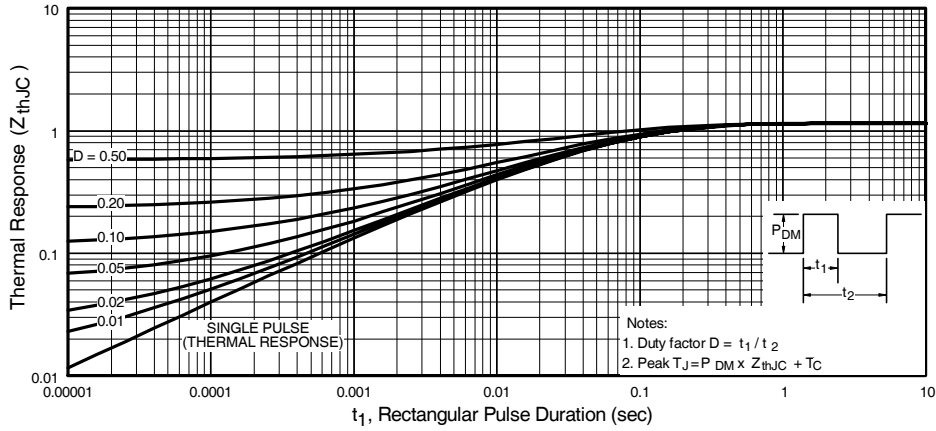


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

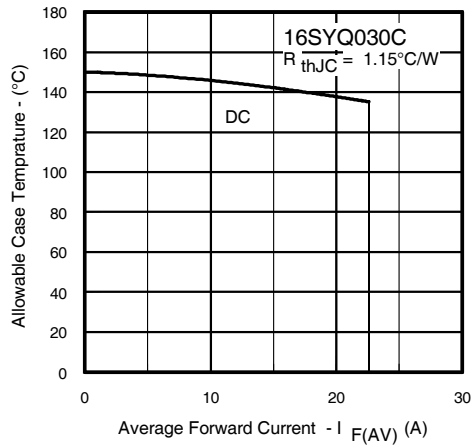


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current