PD - 93954

International
IOR Rectifier

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

# 15YQ100C

15 Amp, 100V

**Major Ratings and Characteristics**

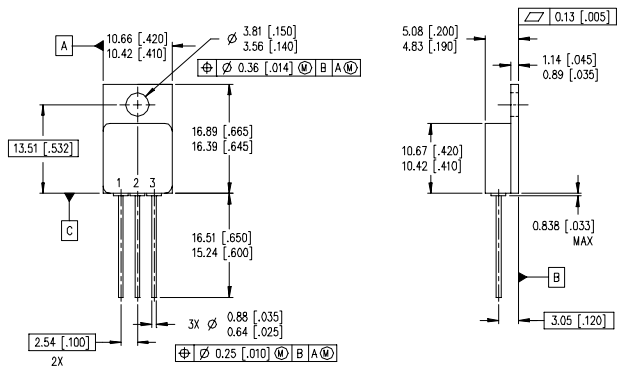
| Characteristics | 15YQ100C | Units |
|---|---|---|
| $I_{F(AV)}$ | 15 | A |
| $V_{RRM}$ | 100 | V |
| $I_{FSM}$ @ tp = 8.3ms half-sine | 250 | A |
| $V_F$ @ 15Apk, $T_J$ =125°C | 0.71 | V |
| $T_J$, $T_{stg}$ Operating and storage | -55 to 150 | °C |

**Description/Features**

The 15YQ100C Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel 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 resonent power converters. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to JANTX, JANTXV and JANS levels.

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

**CASE STYLE**




NOTES:
1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M–1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE TO-257AA.

**IR Case Style TO-257AA**



8/17/00

## Voltage Ratings

| | Part number | 15YQ100C |
|---|---|---|
| $V_R$ | Max. DC Reverse Voltage (V) | 100 |
| $V_{RWM}$ | Max. Working Peak Reverse Voltage (V) | |

## Absolute Maximum Ratings

| | Parameters | Limits | Units | Conditions |
|---|---|---|---|---|
| $I_{F(AV)}$ | Max. Average Forward Current See Fig. 5 | 15 | A | 50% duty cycle @ $T_C$ = 109°C, square waveform |
| $I_{FSM}$ | Max. Peak One Cycle Non - Repetitive Surge Current | 250 | A | @ $t_p$ = 8.3 ms half-sine |

## Electrical Specifications

| | Parameters | Limits | Units | Conditions | |
|---|---|---|---|---|---|
| $V_{FM}$ | Max. Forward Voltage Drop See Fig. 1① | 0.76 | V | @ 15A | $T_J$ = -55°C |
| | | 0.64 | V | @ 7.5A | |
| | | 0.785 | V | @ 15A | $T_J$ = 25°C |
| | | 0.60 | V | @ 7.5A | |
| | | 0.71 | V | @ 15A | $T_J$ = 125°C |
| | | 0.54 | V | @ 7.5A | |
| $I_{RM}$ | Max. Reverse Leakage Current See Fig. 2① | 0.04 | mA | $T_J$ = 25°C | $V_R$ = rated $V_R$ |
| | | 7.1 | mA | $T_J$ = 100°C | |
| | | 30 | mA | $T_J$ = 125°C | |
| $C_T$ | Max. Junction Capacitance | 1400 | pF | $V_R$ = 5$V_{DC}$ ( 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 | 1.1 | °C/W | DC operation See Fig. 4 |
| wt | Weight (Typical) | 4.3 | g | |
| | Die Size (Typical) | 200X200 | mils | |
| | Case Style | TO-257AA | | |

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

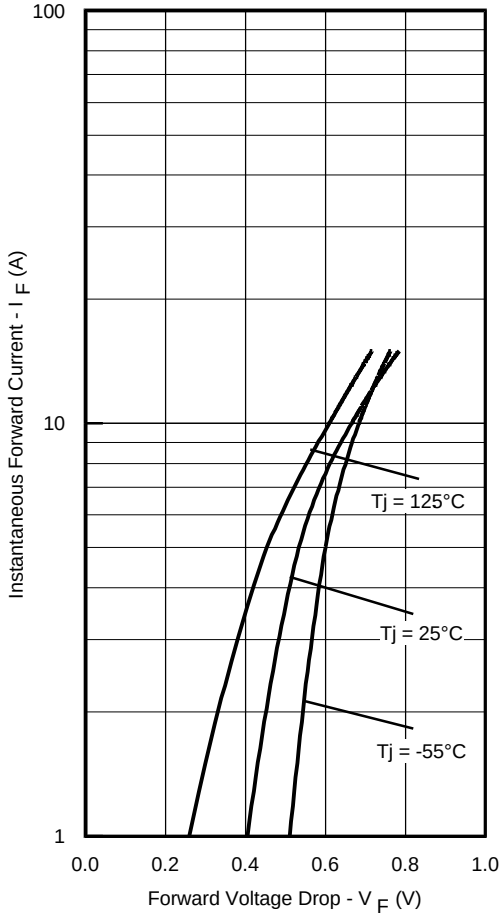



Fig. 1 - Max. Forward Voltage Drop Characteristics

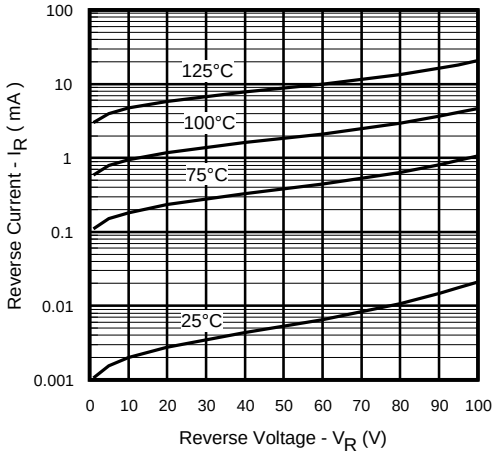



Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

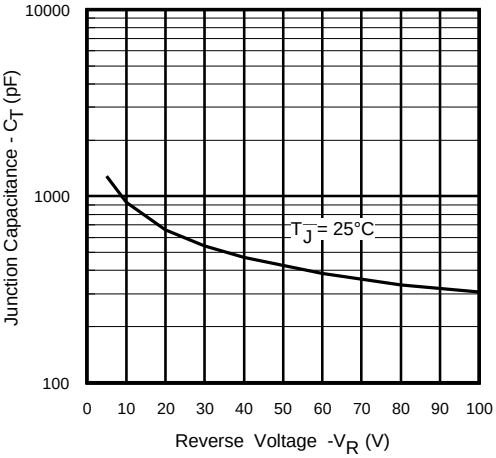



Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

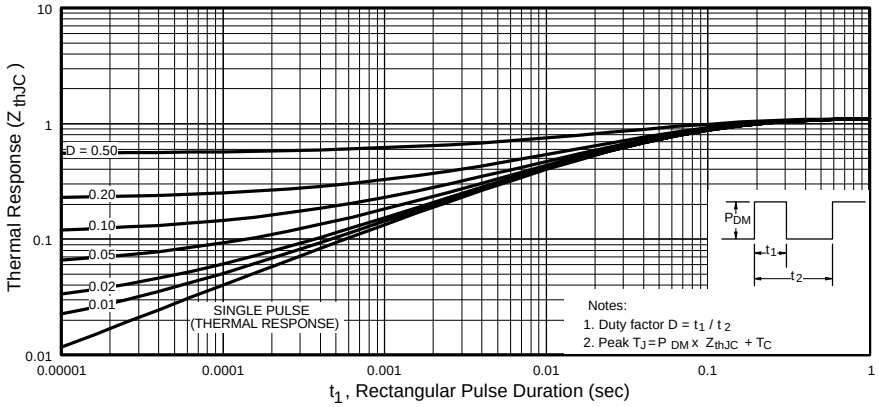



Fig. 4 - Max. Thermal Impedance $Z_{thJC}$ Characteristics

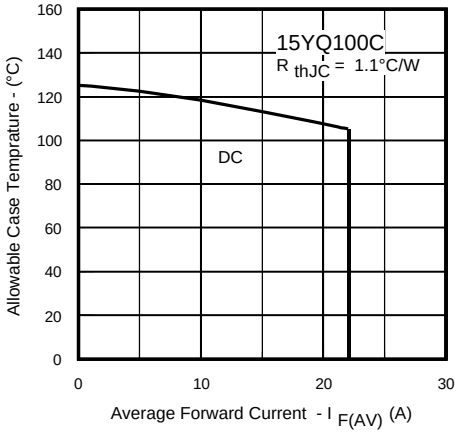



Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current

International
IOR Rectifier

**IR WORLD HEADQUARTERS:** 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
**IR EUROPEAN REGIONAL CENTRE:** 439/445 Godstone Rd, Whyteleafe, Surrey CR3 OBL, UK Tel: ++ 44 (0)20 8645 8000
**IR CANADA:** 15 Lincoln Court, Brampton, Ontario L6T3Z2, Tel: (905) 453 2200
**IR GERMANY:** Saalburgstrasse 157, 61350 Bad Homburg Tel: ++ 49 (0) 6172 96590
**IR ITALY:** Via Liguria 49, 10071 Borgaro, Torino Tel: ++ 39 011 451 0111
**IR JAPAN:** K&H Bldg., 2F, 30-4 Nishi-Ikebukuro 3-Chome, Toshima-Ku, Tokyo 171 Tel: 81 (0)3 3983 0086
**IR SOUTHEAST ASIA:** 1 Kim Seng Promenade, Great World City West Tower, 13-11, Singapore 237994 Tel: ++ 65 (0)838 4630
**IR TAIWAN:** 16 Fl. Suite D. 207, Sec. 2, Tun Haw South Road, Taipei, 10673 Tel: 886-(0)2 2377 9936
*Data and specifications subject to change without notice. 8/00*