# International IOR Rectifier

SCHOTTKY RECTIFIER

HIGH EFFICIENCY SERIES

**15CGQ100**
**JANS1N7043CCT1**
**JANTX1N7043CCT1**
**JANTXV1N7043CCT1**

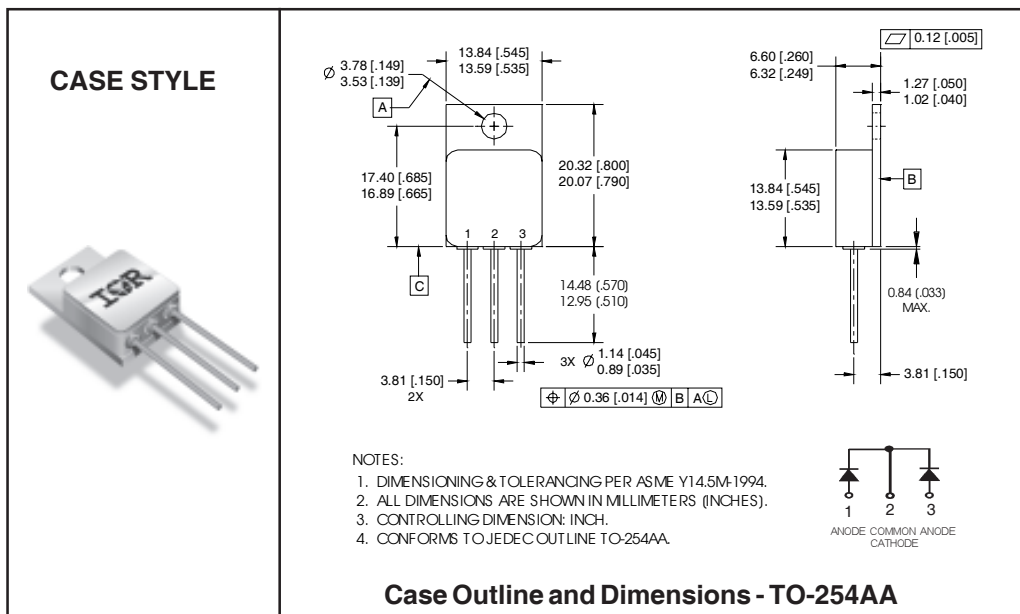**35Amp, 100V**
Ref: MIL-PRF-19500/730

## Major Ratings and Characteristics

| Characteristics | 1N7043CCT1 | Units |
|---|---|---|
| $I_{F(AV)}$ | 35 | A |
| $V_{RRM}$ (Per Leg) | 100 | V |
| $I_{FSM}$ @ tp=8.3ms half-sine (Per Leg) | 175 | A |
| $V_F$ @ 35Apk, $T_J$=125°C (Per Leg) | 1.2 | V |
| $T_J$, $T_{stg}$ Operating and storage | -65 to 150 | °C |

## Description/Features

The 1N7043CCT1 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of high reliability environments. It is packaged in the hermetic isolated TO-254AA 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 TX, TXV and S quality levels.

- Hermetically Sealed
- Center Tap
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Lightweight
- ESD Rating: Class 3A per MIL-STD-750, Method 1020

**CASE STYLE**



Ø 3.78 [.149] / 3.53 [.139]
13.84 [.545] / 13.59 [.535]
0.12 [.005]
6.60 [.260] / 6.32 [.249]
1.27 [.050] / 1.02 [.040]
17.40 [.685] / 16.89 [.665]
20.32 [.800] / 20.07 [.790]
13.84 [.545] / 13.59 [.535]
14.48 (.570) / 12.95 (.510)
0.84 (.033) MAX.
3.81 [.150] 2X
3X Ø 1.14 [.045] / 0.89 [.035]
Ø 0.36 [.014] B A
3.81 [.150]

NOTES:
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
3. CONTROLLING DIMENSION: INCH.
4. CONFORMS TO JEDEC OUTLINE TO-254AA.

1 ANODE  2 COMMON CATHODE  3 ANODE

**Case Outline and Dimensions - TO-254AA**

15CGQ100, 1N7043CCT1

International
**IΩR** Rectifier

## Voltage Ratings

| | Part number | 1N7043CCT1 |
|---|---|---|
| $V_R$ | Max. DC Reverse Voltage (V) (Per Leg) | 100 |
| $V_{RWM}$ | Max. Working Peak Reverse Voltage (V) (Per Leg) | |

## Absolute Maximum Ratings

| | Parameters | Limits | Units | Conditions |
|---|---|---|---|---|
| $I_{F(AV)}$ | Max. Average Forward Current See Fig. 5 | 35 | A | 50% duty cycle @ $T_C$ = 84°C, square waveform |
| $I_{FSM}$ | Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg) | 175 | A | @ $t_p$ = 8.3 ms half-sine |

## Electrical Specifications

| | Parameters | Limits | Units | Condition | |
|---|---|---|---|---|---|
| $V_{FM}$ | Max. Forward Voltage Drop (Per Leg) See Fig. 1① | 1.84 | V | @ 35A | $T_J$ = -55°C |
| | | 0.95 | V | @ 15A | $T_J$ = 25°C |
| | | 1.30 | V | @ 35A | |
| | | 1.2 | V | @ 35A | $T_J$ = 125°C |
| $I_{RM}$ | Max. Reverse Leakage Current (Per Leg) See Fig. 2 ① | 0.5 | mA | $T_J$ = 25°C | $V_R$ = rated $V_R$ |
| | | 15 | mA | $T_J$ = 125°C | |
| $C_T$ | Max. Junction Capacitance (Per Leg) | 600 | pF | $V_R$ = 5$V_{DC}$ ( 1MHz, 25°C ) | |
| $L_S$ | Typical Series Inductance (Per Leg) | 6.7 | nH | Measured from anode lead to cathode lead 6mm ( 0.025 in.) from package | |

## Thermal-Mechanical Specifications

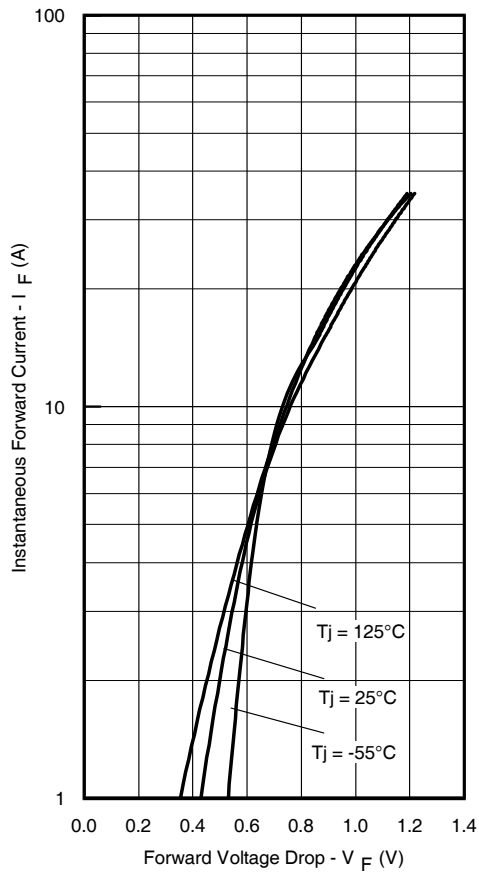| | Parameters | Limits | Units | Conditions |
|---|---|---|---|---|
| $T_J$ | Max. Junction Temperature Range | -65 to 150 | °C | |
| $T_{stg}$ | Max. Storage Temperature Range | -65 to 150 | °C | |
| $R_{thJC}$ | Max. Thermal Resistance, Junction to Case (Per Leg) | 2.30 | °C/W | DC operation       See Fig. 4 |
| $R_{thJC}$ | Max. Thermal Resistance, Junction to Case (Per Package) | 1.15 | °C/W | DC operation |
| wt | Weight (Typical) | 9.3 | g | |
| | Die Size (Typical) | 125X125 | mils | |
| | Case Style | TO-254AA | | |

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

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



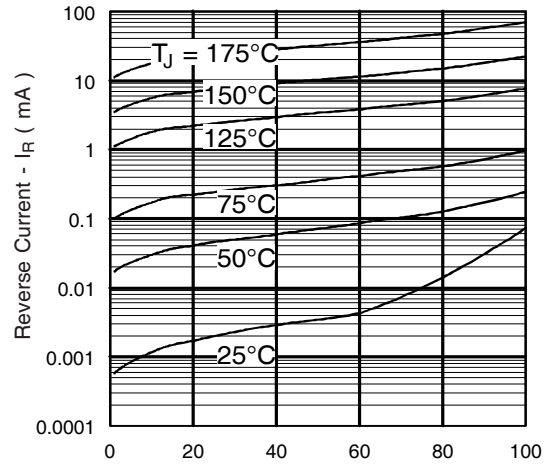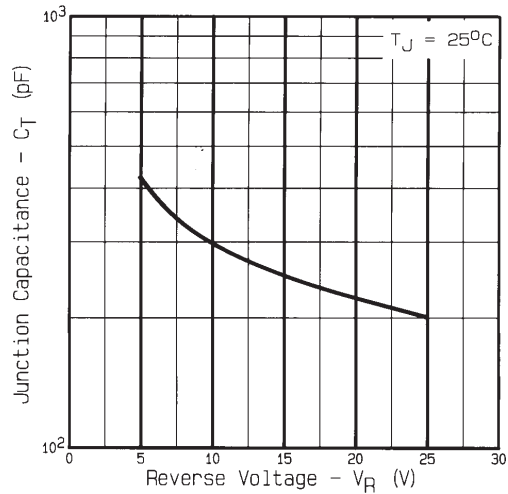Fig. 2 - Typical Values of Reverse Current
Vs. Reverse Voltage (Per Leg)



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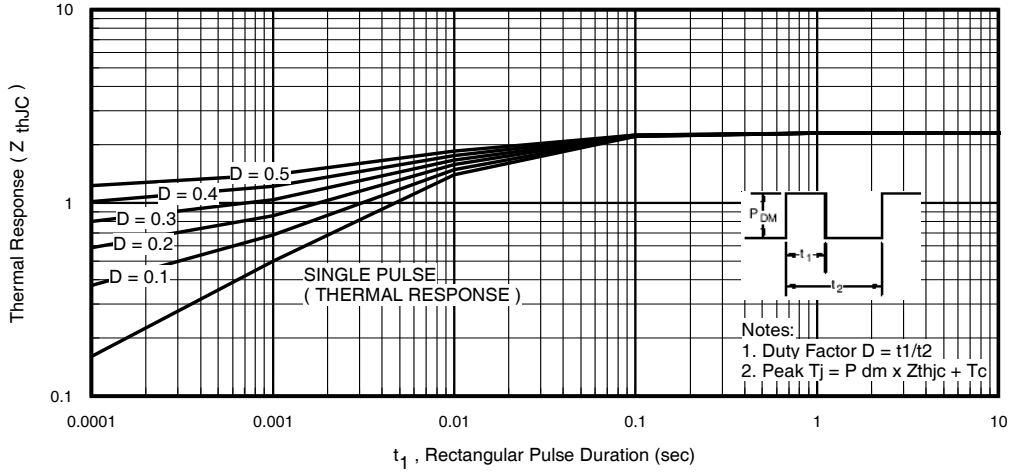Reverse Voltage (Per Leg)

Thermal Response ( Z $_{thJC}$ )

D = 0.5
D = 0.4
D = 0.3
D = 0.2
D = 0.1

SINGLE PULSE
( THERMAL RESPONSE )

P$_{DM}$

t$_1$

t$_2$

Notes:
1. Duty Factor D = t1/t2
2. Peak Tj = P dm x Zthjc + Tc

t$_1$ , Rectangular Pulse Duration (sec)

Fig. 4 - Max. Thermal Impedance Z$_{thJC}$ Characteristics (Per Leg)

Allowable Case Temperature - (°C)

R$_{thJC}$ (DC) = 1.15°C/W

DC

80 % Square Wave (D=0.50)
Rated V$_R$ applied

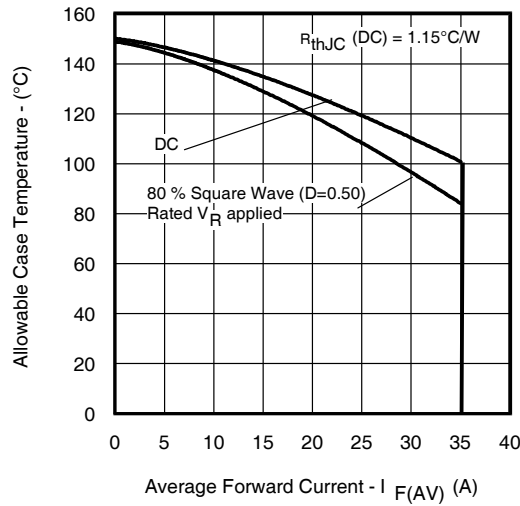Average Forward Current - I $_{F(AV)}$ (A)

Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current (Per Package)

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