

Major Ratings and Characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular waveform Per Device	60	A
V_{RRM}	15	V
I_{FSM} @ tp = 5 μ s sine	1800	A
V_F @ 30 Apk, T_J = 125°C (typical) per leg	0.3	V
T_J range	-55 to 150	°C

Description/ Features

This center tap Schottky rectifier has been optimized for low forward voltage drop. The proprietary sub-micron technology allows for low power loss both in forward and reverse conduction.

- 150 °C T_J operation
- Center tap configuration
- Low forward voltage drop
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance

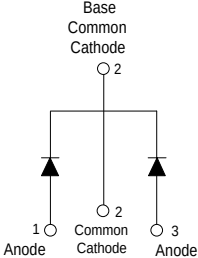
Case Styles

60CTTN015



TO-220

Base
Common
Cathode



1 Anode
2 Common Cathode
3 Anode

Voltage Ratings

Part number	60CTTN015
V_R Max. DC Reverse Voltage (V) @ $T_J = 150^\circ\text{C}$	15

Absolute Maximum Ratings

Parameters	Values	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current (Per Leg) (Per Device)	30 60	A	50% duty cycle @ $T_C = 130^\circ\text{C}$, rectangular wave form
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg)	1800 340	A	5 μs Sine or 3 μs Rect. pulse 10ms Sine or 6ms Rect. pulse Following any rated load condition and with rated V_{RRM} applied
E_{AS} Non-Repetitive Avalanche Energy (Per Leg)	9.0	mJ	$T_J = 25^\circ\text{C}$, $I_{AS} = 2\text{ Amps}$, $L = 4.5\text{ mH}$
I_{AR} Repetitive Avalanche Current (Per Leg)	2	A	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical

Electrical Specifications

Parameters	Typ	Max	Units	Conditions
V_{FM} Max. Forward Voltage Drop (Per Leg) (1)	0.41 0.48 0.33 0.44 0.30 0.42	0.44 0.53 0.36 0.47 0.32 0.45	V	@ 30A @ 60A @ 30A @ 60A @ 30A @ 60A $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$ $T_J = 150^\circ\text{C}$
I_{RM} Max. Reverse Leakage Current (Per Leg) (1)	0.4 31 120	2 50 250	mA	$T_J = 25^\circ\text{C}$ $V_R = \text{rated } V_R$ $T_J = 100^\circ\text{C}$ $V_R = 5\text{V}$ $T_J = 125^\circ\text{C}$ $V_R = \text{rated } V_R$
C_T Junction Capacitance (Per Leg)	3000	-	pF	$V_R = 10\text{V}_{DC}$ (test signal range 100KHz to 1MHz) 25°C
L_S Series Inductance (Per Leg)	8.0	-	nH	Measured lead to lead 5mm from package body
dv/dt Max. Voltage Rate of Change	-	10000	V/ μs	(Rated V_R)

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

Thermal-Mechanical Specifications

Parameters	Values	Units	Conditions
T_J Max. Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance Junction to Case (Per Leg)	1.2	$^\circ\text{C/W}$	DC operation
R_{thCS} Typical Thermal Resistance, Case to Heatsink	0.5	$^\circ\text{C/W}$	Mounting surface, smooth and greased
wt Approximate Weight	2(0.07)	g(oz.)	
T Mounting Torque	Min. 6(5) Max. 12(10)	Kg-cm (lbf-in)	
Case Style	TO-220AB		

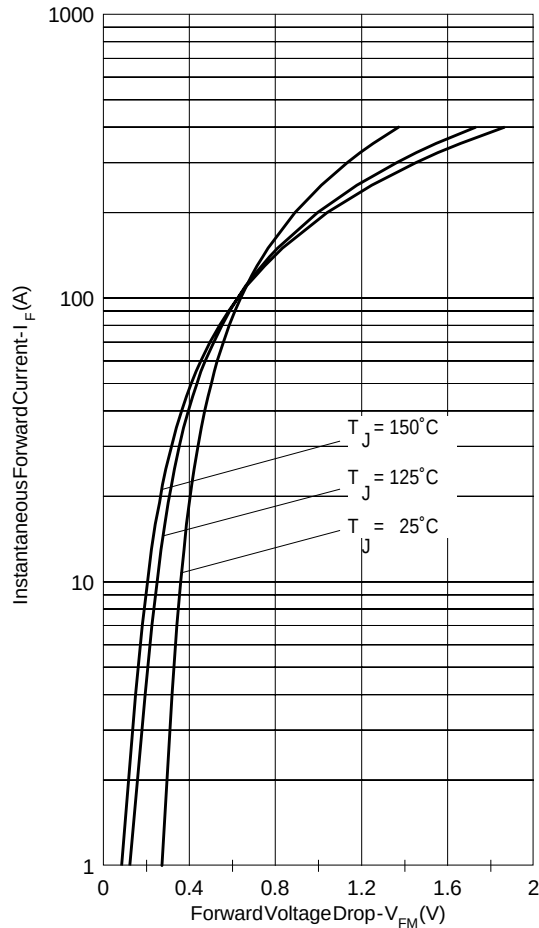


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

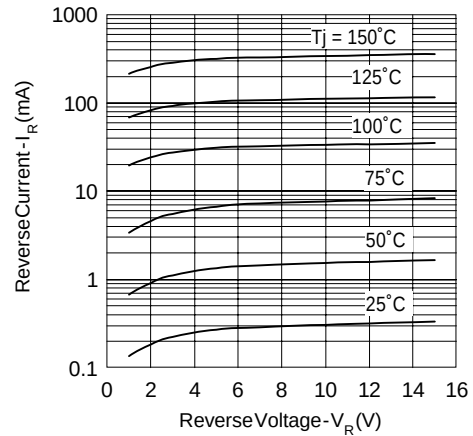


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

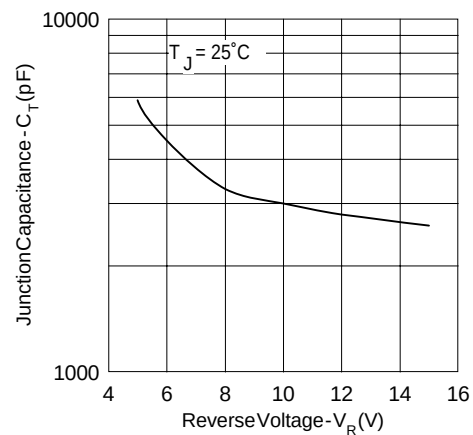


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

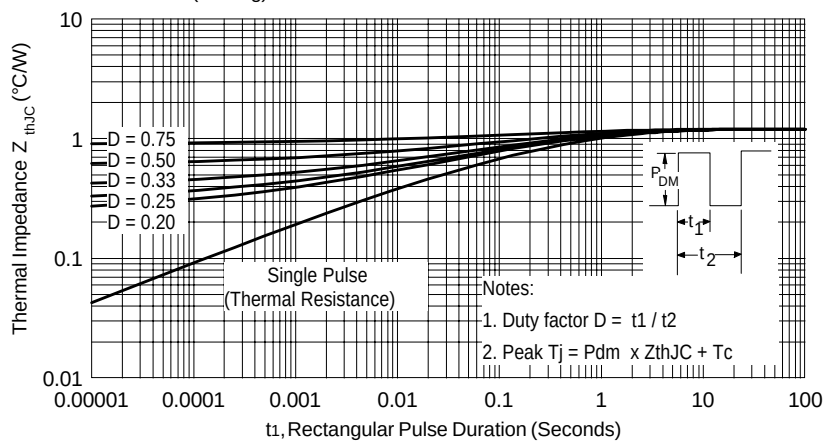


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

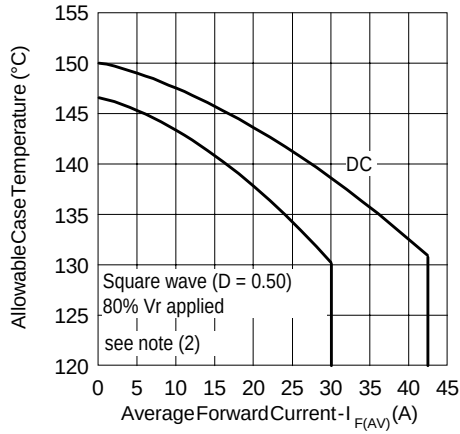


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

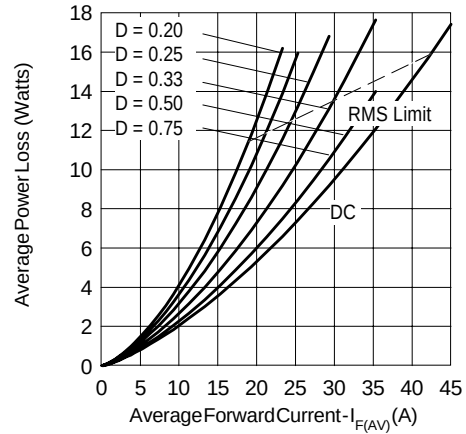


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

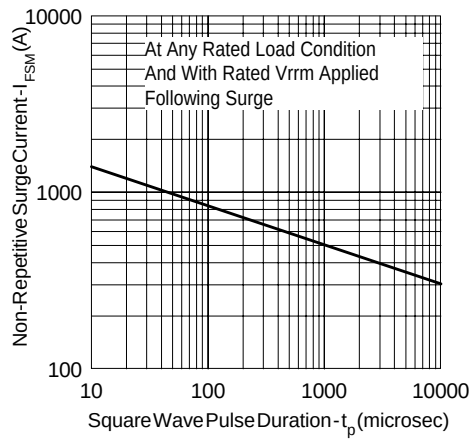


Fig. 7 - Max. Non-Repetitive Surge Current (Per Leg)

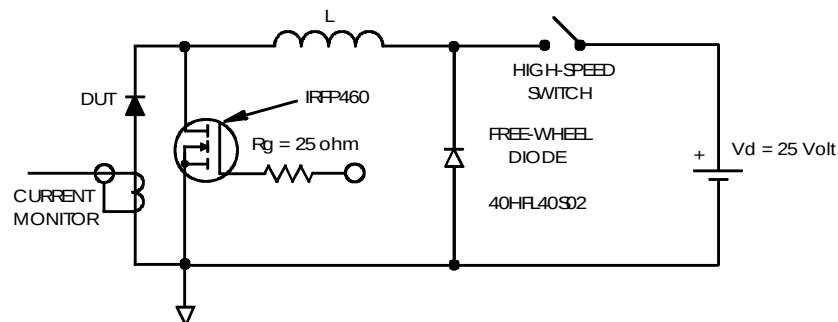


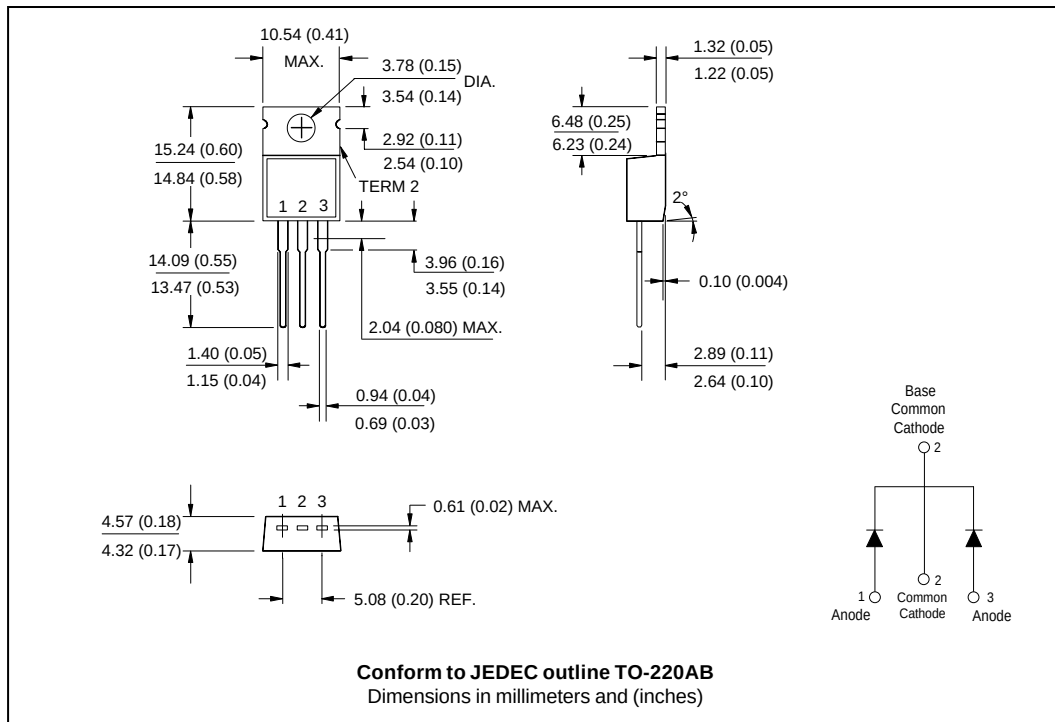
Fig. 8 - Unclamped Inductive Test Circuit

(2) Formula used: $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$;

P_d = Forward Power Loss = $I_{F(AV)} \times V_{FM}$ @ $(I_{F(AV)} / D)$ (see Fig. 6);

$P_{d_{REV}}$ = Inverse Power Loss = $V_{R1} \times I_R (1 - D)$; I_R @ 80% V_R applied

Outline Table



Data and specifications subject to change without notice.
This product has been designed for Industrial Level.
Qualification Standards can be found on IR's Web site.

International
IOR Rectifier

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