

SCHOTTKY RECTIFIER

45\* Amp

Major Ratings and Characteristics

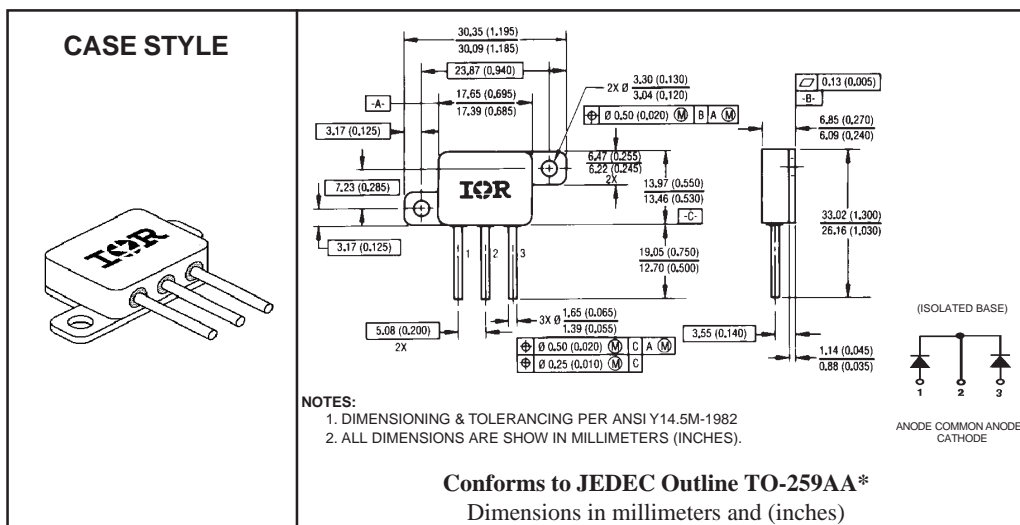
Characteristics	60CIQ045	Units
$I_{F(AV)}$ Rectangular waveform	45*	A
$V_{RRM}$	45	V
$I_{FSM}$ @ $t_p = 8.3ms$ sine	400	A
$V_F$ @ 25Apk, $T_J = 125^\circ C$ (Per Leg)	0.62	V
$T_J, T_{stg}$ Operating and storage	-55 to 150	$^\circ C$

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

Description/Features

The 60CIQ045 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-259 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
- Low forward voltage drop
- Center tap
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- 2 interdigitated mounting tabs for secured, intimate heatsink contact
- Electrically isolated
- Ceramic eyelets



**Voltage Ratings**

Part number	60CIQ045
$V_R$ Max. DC Reverse Voltage (V) (Per Leg)	45
$V_{RWM}$ Max. Working Peak Reverse Voltage (V) (Per Leg)	

**Absolute Maximum Ratings**

Parameters	60CIQ045	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 4	45*	A	50% duty cycle @ $T_C = 100^\circ\text{C}$ , rectangular waveform * $I_{F(AV)}$ current limited by pin diameter
$I_{FSM}$ Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg)	400	A	@ $t_p = 8.3$ ms sine

**Electrical Specifications**

Parameters	60CIQ045	Units	Conditions
$V_{FM}$ Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	0.71	V	@ 25A $T_J = 25^\circ\text{C}$
	0.92	V	@ 45A
	0.62	V	@ 25A $T_J = 125^\circ\text{C}$
	0.85	V	@ 45A
$I_{RM}$ Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.80	mA	$T_J = 25^\circ\text{C}$ $V_R = \text{rated } V_R$
	45	mA	$T_J = 125^\circ\text{C}$
$C_T$ Max. Junction Capacitance (Per Leg)	2600	pF	$V_R = 5V_{DC}$ , (test signal range 100KHz to 1MHz) $25^\circ\text{C}$
$L_S$ Typical Series Inductance (Per Leg)	8.7	nH	Measured lead to lead 5mm from package body

**Thermal-Mechanical Specifications**

Parameters	60CIQ045	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)	0.83	$^\circ\text{C}/\text{W}$	DC operation See Fig. 5
$R_{thJC}$ Max. Thermal Resistance, Junction to Case (Per Package)	0.42	$^\circ\text{C}/\text{W}$	DC operation
$R_{thCS}$ Typical Thermal Resistance, Case to Heatsink	0.21	$^\circ\text{C}/\text{W}$	Mounting surface, smooth and greased
wt Weight (Typical)	10.5	g	
Die Description (Square)	0.200	inches	
Case Style	TO-259AA		JEDEC

① Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

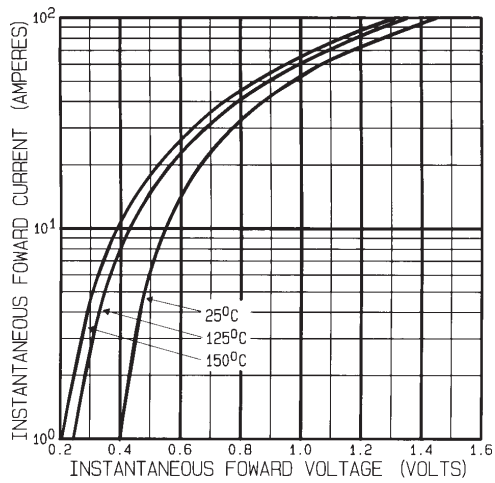


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

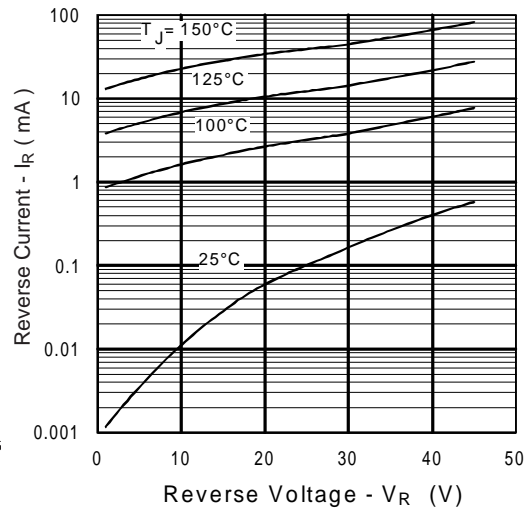


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

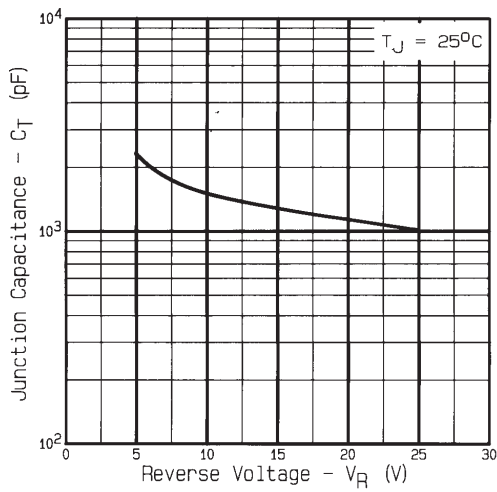


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

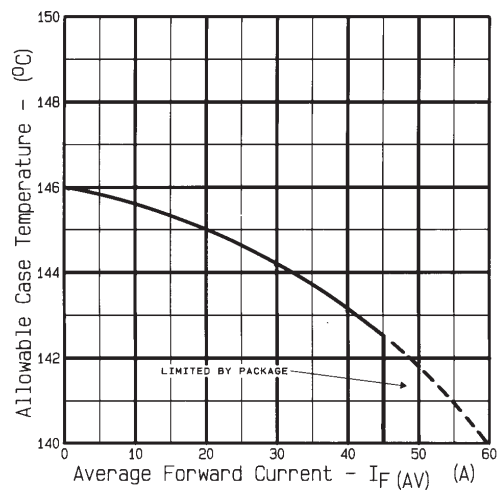
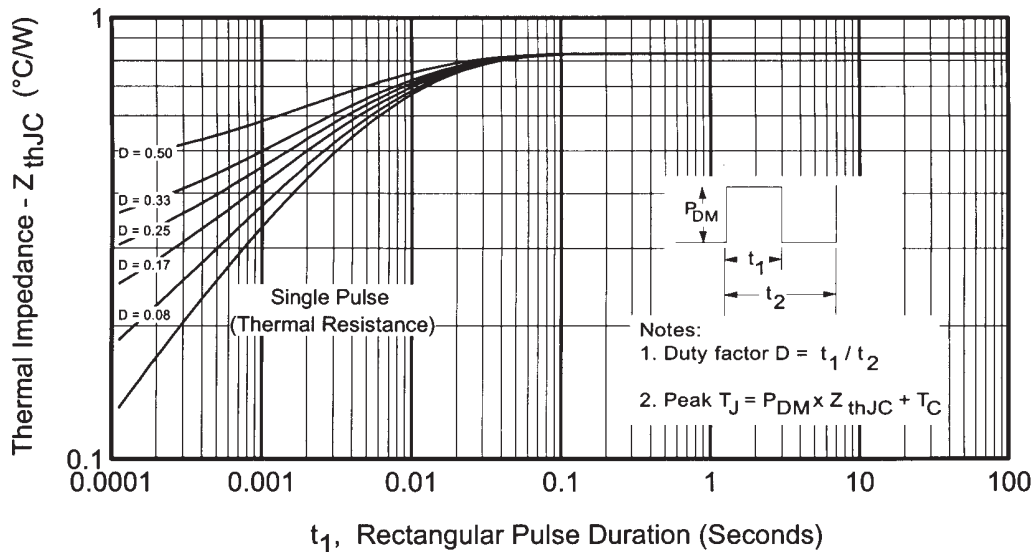


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

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

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