PD - 20356C

International
IOR Rectifier

45CIQ100

SCHOTTKY RECTIFIER

45* Amp

Major Ratings and Characteristics

Characteristics	45CIQ100	Units
$I_{F(AV)}$ Rectangular waveform	45*	A
V_{RRM}	100	V
I_{FSM} @ t_p = 8.3ms sine	400	A
V_F @ 25Apk, T_J = 125°C (Per Leg)	0.74	V
T_J, T_{stg} Operating and storage	-55 to 150	°C

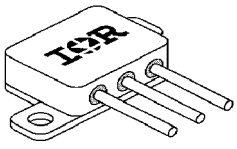
*$I_{F(AV)}$ current limited by pin diameter

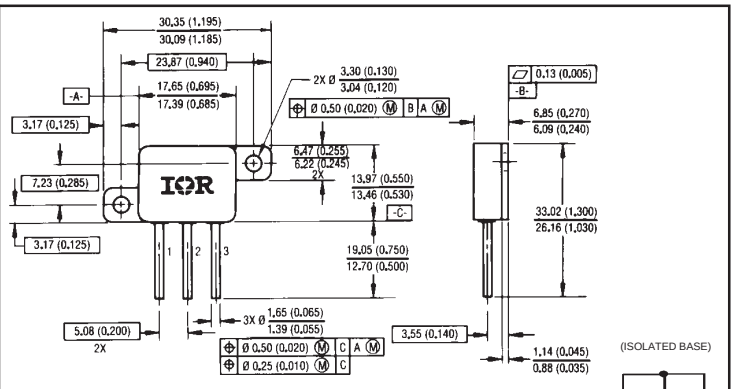
Desciption/Features

The 45CIQ100 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 secrured, intimate heatsink contact
- Electrically isolated
- Ceramic eyelets

CASE STYLE





NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982
2. ALL DIMENSIONS ARE SHOW IN MILLIMETERS (INCHES).

Conforms to JEDEC Outline TO-259AA
Dimensions in millimeters and (inches)

4/236/99

Voltage Ratings

	Part number	45CIQ100
V_R	Max. DC Reverse Voltage (V) (Per Leg)	100
V_{RWM}	Max. Working Peak Reverse Voltage (V) (Per Leg)	

Absolute Maximum Ratings

	Parameters	45CIQ100	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 4	45*	A	50% duty cycle @ T_C = 100°C, rectangular waveform *IF(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	45CIQ100	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	0.89	V	@ 25A	T_J = 25°C
		1.13	V	@ 45A	
		0.74	V	@ 25A	T_J = 125°C
		0.97	V	@ 45A	
I_{RM}	Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.8	mA	T_J = 25°C	V_R = rated V_R
		45	mA	T_J = 125°C	
C_T	Max. Junction Capacitance (Per Leg)	1400	pF	V_R = 5V_{DC}, (test signal range 100KHz to 1MHz) 25°C	
L_S	Typical Series Inductance (Per Leg)	8.7	nH	Measured lead to lead 5mm from package body	

Thermal-Mechanical Specifications

	Parameters	45CIQ100	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 (Per Leg)	0.83	°C/W	DC operation See Fig. 5
R_{thJC}	Max. Thermal Resistance, Junction to Case (Per Package)	0.42	°C/W	DC operation
R_{thCS}	Typical Thermal Resistance, Case to Heatsink	0.21	°C/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 < 300µs, Duty Cycle < 2%

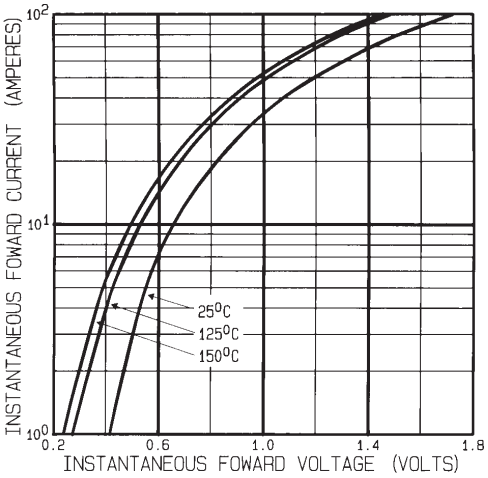


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

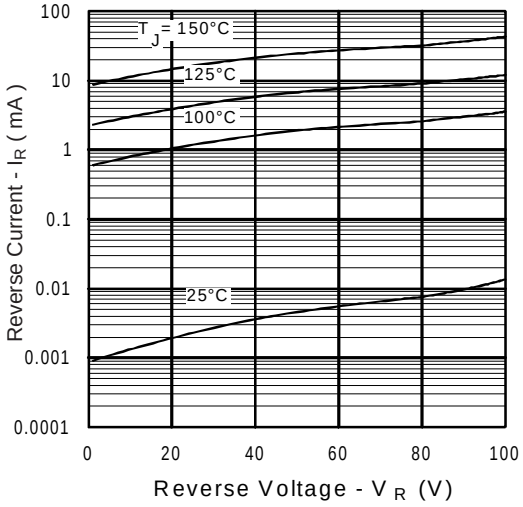


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

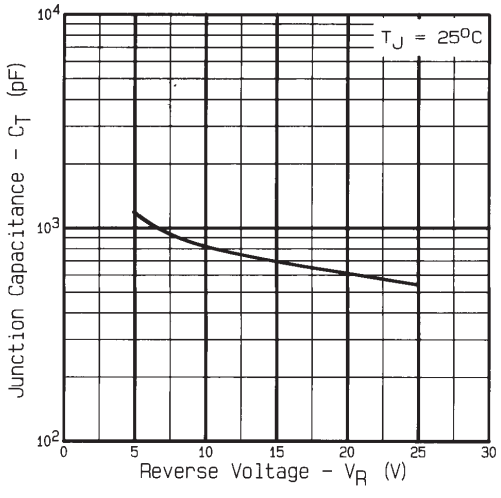


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

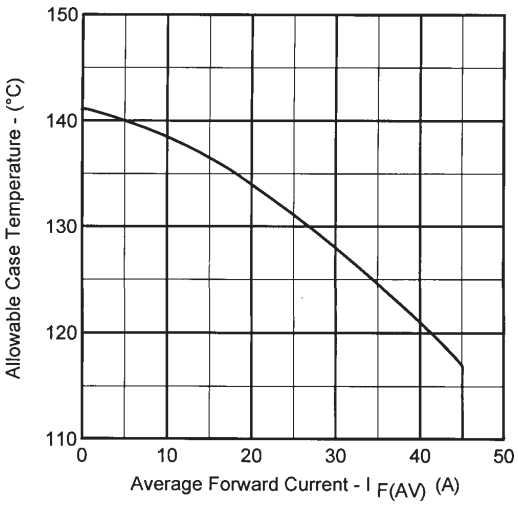


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

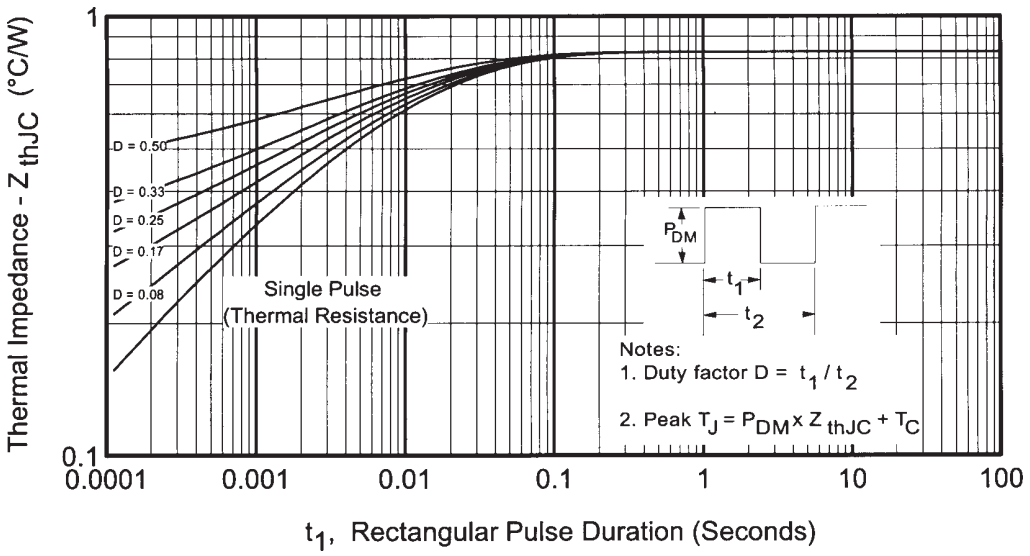


Fig.5 - Max. Thermal Impedance Z_{thJC} characteristics (Per Leg)

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