



20CLQ045

SCHOTTKY RECTIFIER

20 Amp

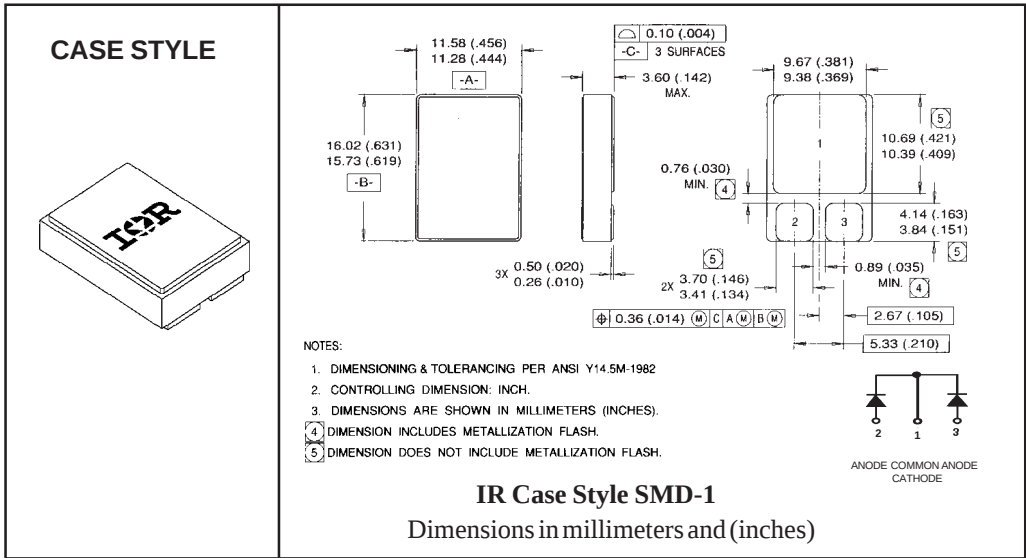
Major Ratings and Characteristics

Characteristics	25CLQ045	Units
$I_{F(AV)}$ Rectangular waveform	20	A
V_{RRM}	45	V
I_{FSM} @ $t_p = 8.3ms$ sine	250	A
V_F @ 10Apk, $T_J = 125^{\circ}C$ (Per Leg)	0.48	V
T_J, T_{stg} Operating and storage	-55 to 150	$^{\circ}C$

Description/Features

The 20CLQ045 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic surface mount SMD-1 ceramic package and has extremely low reverse leakage at high temperature. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to JANTX, JANTXV, or JANS levels. Typical applications include switching power supplies and resonant power converters.

- Hermetically sealed
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Surface Mount
- Center Tap
- Lightweight



Voltage Ratings

Part number	20CLQ045
V_R Max. DC Reverse Voltage (V) (Per Leg)	45
V_{RWM} Max. Working Peak Reverse Voltage (V) (Per Leg)	

Absolute Maximum Ratings

Parameters	20CLQ045	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 4	20	A	50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg)	250	A	@ $t_p = 8.3$ ms sine

Electrical Specifications

Parameters	20CLQ045	Units	Conditions
V_{FM} Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	0.57	V	@ 10A
	0.69	V	@ 20A
	0.48	V	@ 10A
	0.61	V	@ 20A
I_{RM} Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.50	mA	$T_J = 25^\circ\text{C}$
	15	mA	$T_J = 125^\circ\text{C}$
C_T Max. Junction Capacitance (Per Leg)	900	pF	$V_R = 5V_{DC}$, (test signal range 100KHz to 1MHz) 25°C
L_S Typical Series Inductance (Per Leg)	2.8	nH	Measured from center of bond pad to end of anode bonding wire

Thermal-Mechanical Specifications

Parameters	20CLQ045	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)	1.67	$^\circ\text{C/W}$	DC operation See Fig. 5
R_{thJC} Max. Thermal Resistance, Junction to case (Per Package)	1.20	$^\circ\text{C/W}$	DC operation
wt Weight (Typical)	2.4	g	
Die Description (Square)	0.125	inches	
Case Style	SMD-1		

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

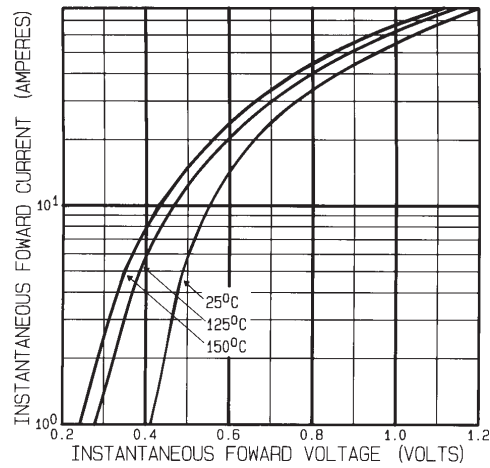


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

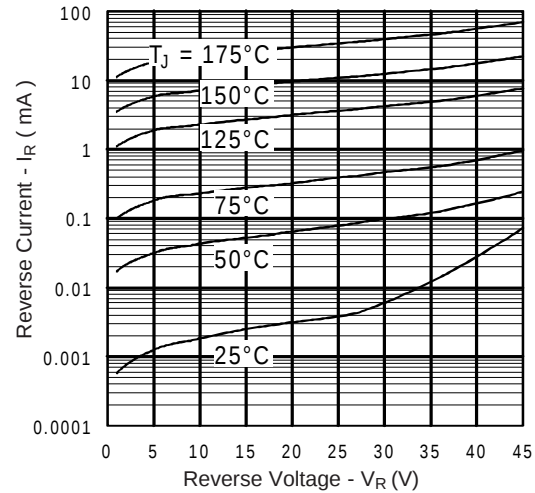


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

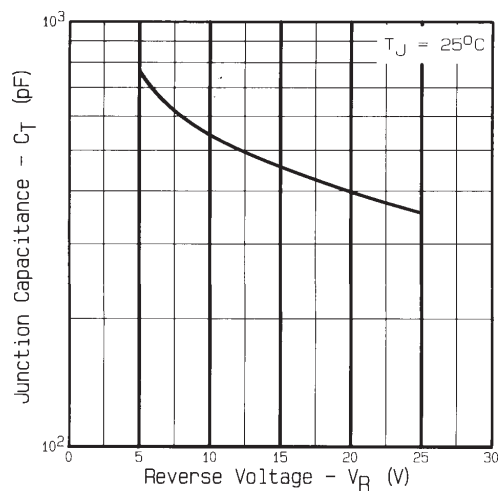


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

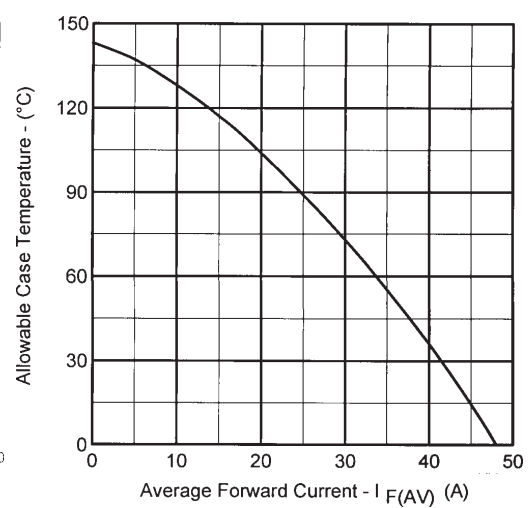
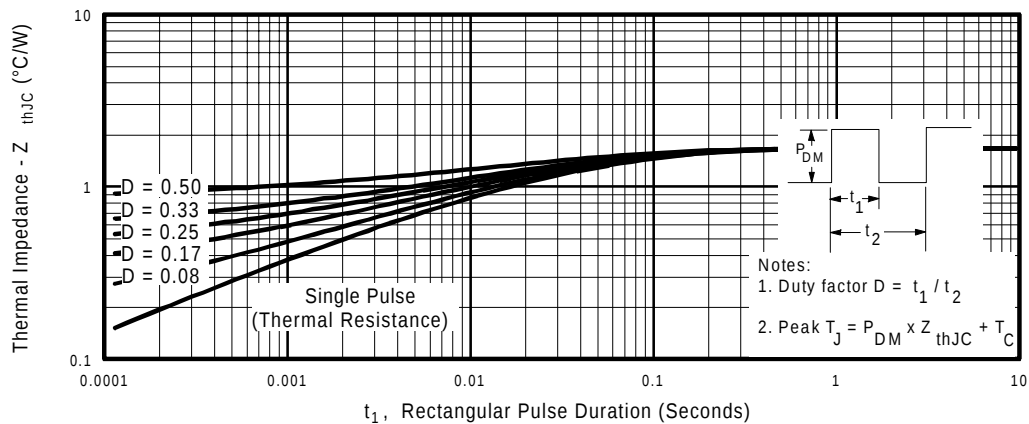


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

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