

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

20CLQ045

20A, 45V

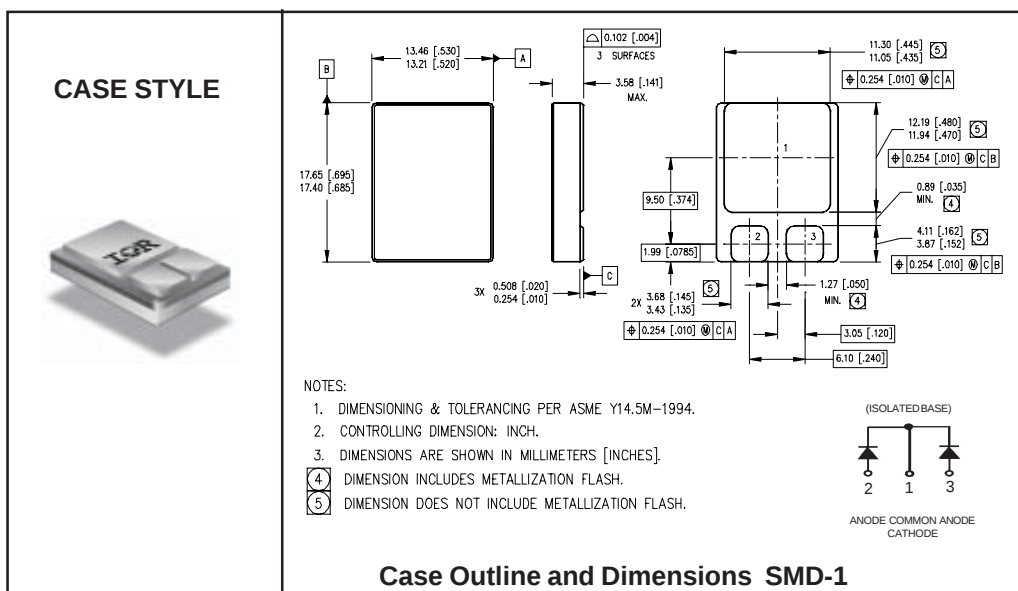
Major Ratings and Characteristics

Characteristics	20CLQ045	Units
$I_{F(AV)}$ Rectangular waveform	20	A
V_{RRM} (Per Leg)	45	V
I_{FSM} @ $t_p = 8.3ms$ half-sine (Per Leg)	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. 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 resonant power converters. Full MIL-PRF-19500 quality conformance testing is available on source controlled drawings to TX, TXV and S levels.

- Hermetically Sealed
- Center Tap
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Surface Mount
- 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	Limits	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 5	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 half-sine

Electrical Specifications

Parameters	Limits	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	0.5	mA	$T_J = 25^\circ\text{C}$
	15	mA	$T_J = 125^\circ\text{C}$
C_T Max. Junction Capacitance (Per Leg)	900	pF	$V_R = 5V_{DC}$ (1MHz, 25°C)
L_S Typical Series Inductance (Per Leg)	5.9	nH	Measured from center of cathode pad to center of anode pad

Thermal-Mechanical Specifications

Parameters	Limits	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. 4
R_{thJC} Max. Thermal Resistance, Junction to Case (Per Package)	0.83	$^\circ\text{C/W}$	DC operation
wt Weight (Typical)	2.6	g	
Die Size	125X125	mils	
Case Style	SMD-1		

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

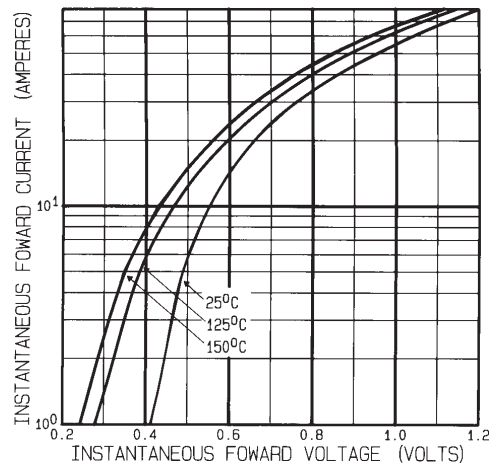


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

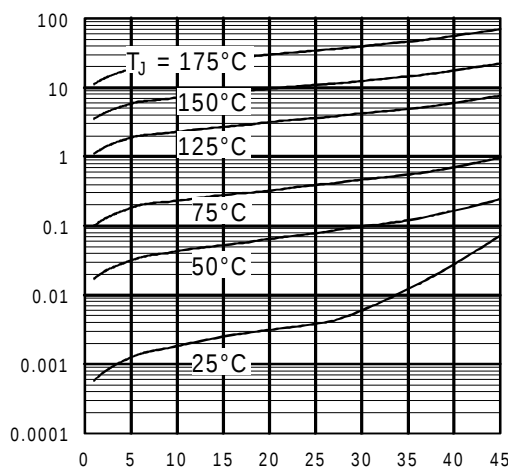


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

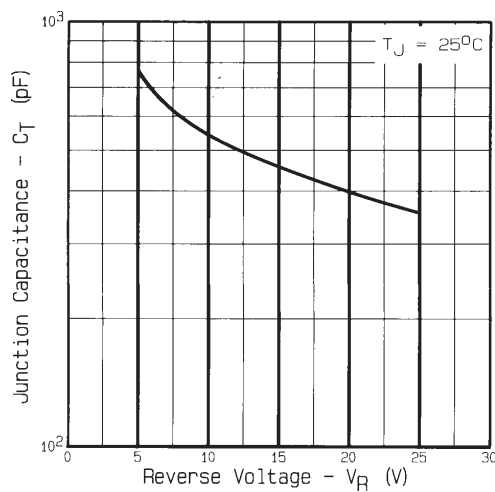
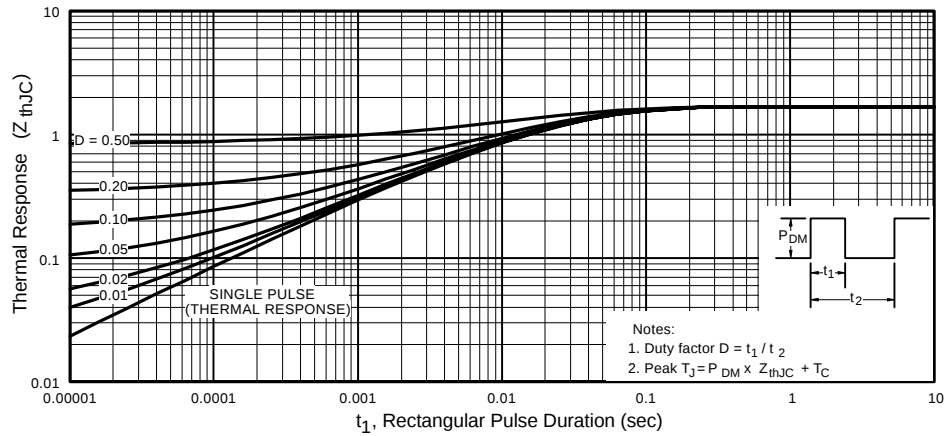
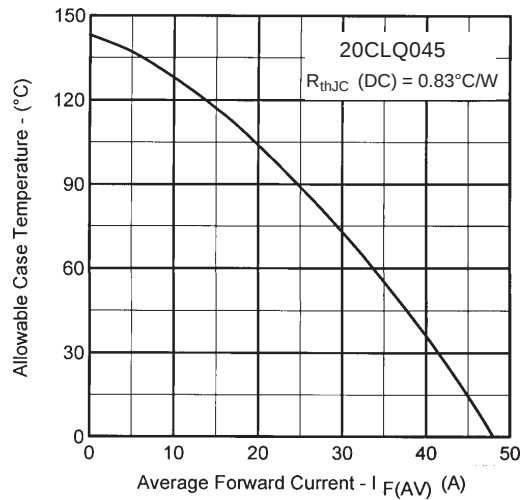


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward CurrentInternational
IR Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105

IR LEOMINSTER : 205 Crawford St., Leominster, Massachusetts 01453, USA Tel: (978) 534-5776

TAC Fax: (310) 252-7903

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Data and specifications subject to change without notice. 12/03

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