PD -20352F

International
IOR Rectifier

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} @ tp = 8.3ms half-sine (Per Leg)	250	A
V_F @ 10Apk, T_J =125°C (Per Leg)	0.48	V
T_J, T_{stg} Operating and storage	-55 to 150	°C

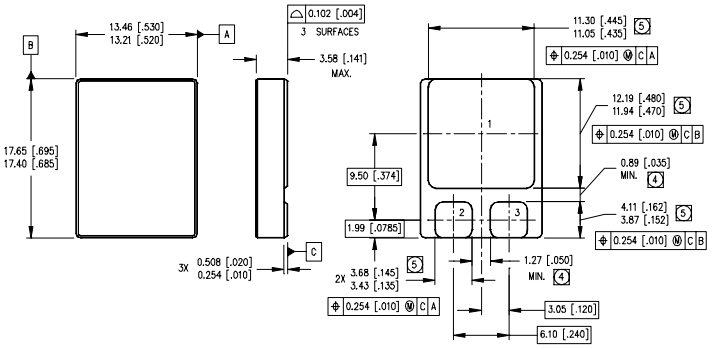
Description/Features

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 resonent power converters. Full MIL-PRF-19500 quality conformance testing is available on source controlled drawings to TX, TXV and S levels.

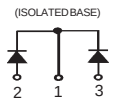
- Hermetically Sealed
- Center Tap
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Surface Mount
- Lightweight

CASE STYLE





NOTES:
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M–1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. DIMENSION INCLUDES METALLIZATION FLASH.
5. DIMENSION DOES NOT INCLUDE METALLIZATION FLASH.



Case Outline and Dimensions SMD-1

12/03/03

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°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. 1①	0.57	V	@ 10A	T_J = 25°C
		0.69	V	@ 20A	
		0.48	V	@ 10A	T_J =1 25°C
		0.61	V	@ 20A	
I_{RM}	Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.5	mA	T_J = 25°C	V_R = rated V_R
		15	mA	T_J = 125°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	°C	
T_{stg}	Max. Storage Temperature Range	-55 to 150	°C	
R_{thJC}	Max. Thermal Resistance, Junction to Case (Per Leg)	1.67	°C/W	DC operation See Fig. 4
R_{thJC}	Max. Thermal Resistance, Junction to Case (Per Package)	0.83	°C/W	DC operation
wt	Weight (Typical)	2.6	g	
	Die Size	125X125	mils	
	Case Style	SMD-1		

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

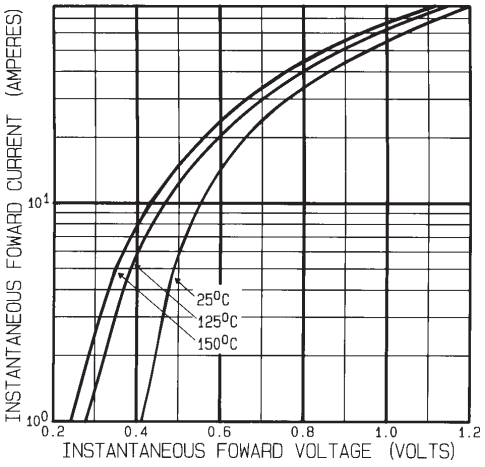


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

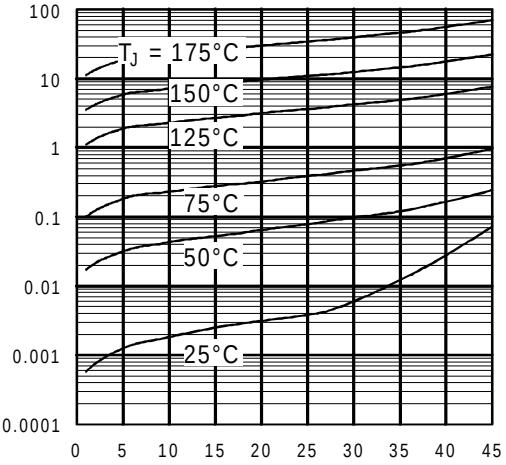


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

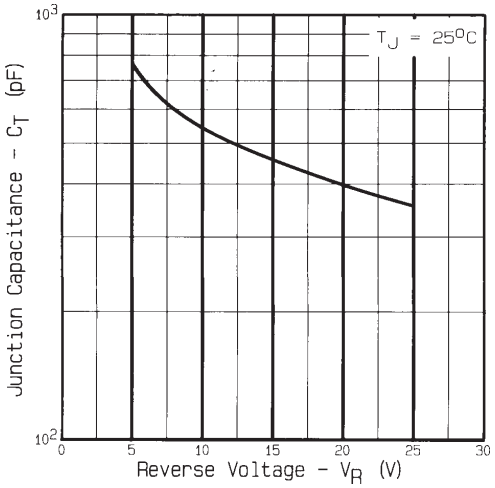


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

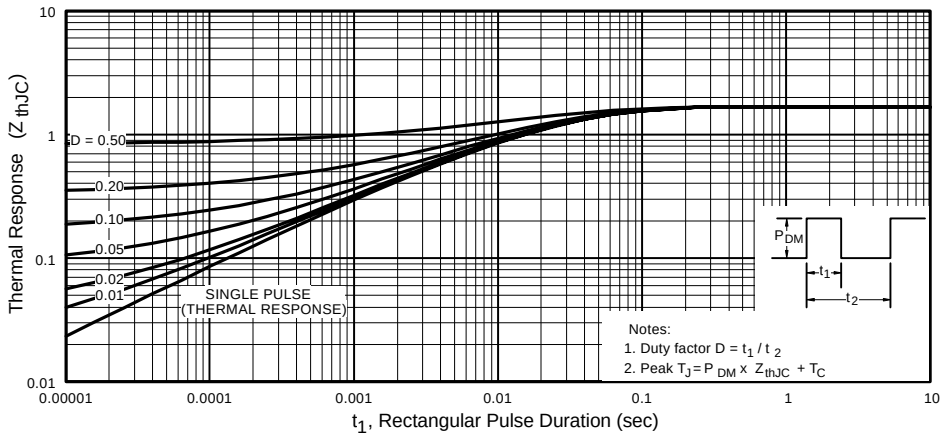


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

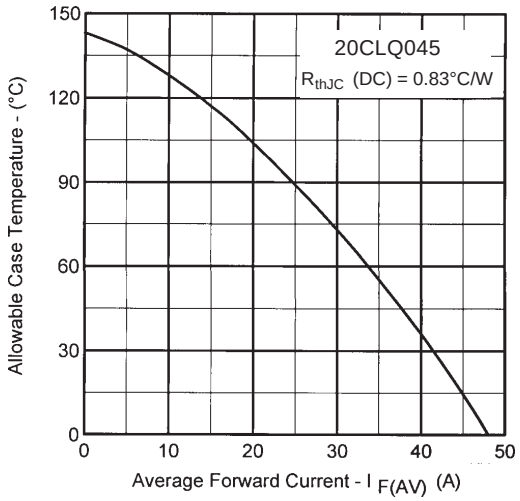


Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current

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