PD -20504B

International
IOR Rectifier

60LQ045

SCHOTTKY RECTIFIER

60 Amp

Major Ratings and Characteristics

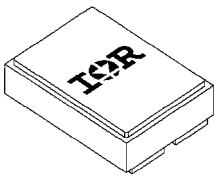
Characteristics	60LQ045	Units
$I_{F(AV)}$ Rectangular waveform	60	A
V_{RRM}	45	V
I_{FSM} @ tp = 8.3ms sine	400	A
V_F @ 60Apk, T_J = 25°C	0.68	V
T_J, T_{stg} Operating and storage	-55 to 150	°C

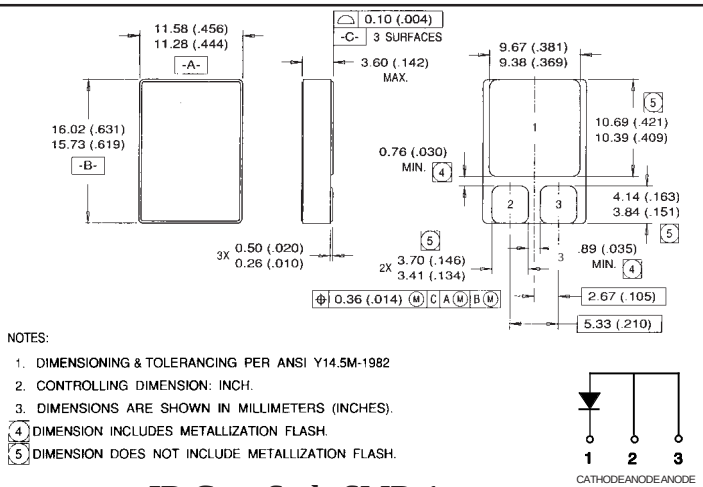
Desciption/Features

The 60LQ045 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 and S 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
- Lightweight

CASE STYLE





NOTES:
1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M-1982
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
4. DIMENSION INCLUDES METALLIZATION FLASH.
5. DIMENSION DOES NOT INCLUDE METALLIZATION FLASH.

IR Case Style SMD-1
Dimensions in millimeters and (inches)

Voltage Ratings

	Part number	60LQ045
V_R	Max. DC Reverse Voltage (V)	45
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

	Parameters	60LQ045	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 5	60	A	50% duty cycle @ T_C = 105°C, rectangular waveform ②
I_{FSM}	Max. Peak One Cycle Non - Repetitive Surge Current	400	A	@ t_p = 8.3 ms sine ②

Electrical Specifications

	Parameters	60LQ045	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop See Fig. 1 ①	0.51	V	@ 10A	T_J = 25°C ②
		0.68	V	@ 60A	
		0.82	V	@ 120A	
		0.69	V	@ 10A	T_J = -55°C ②
		0.60	V	@ 60A	T_J = 125°C ②
		0.74	V	@ 120A	
I_{RM}	Max. Reverse Leakage Current See Fig. 2 ①	0.80	mA	T_J = 25°C	V_R = rated V_R ②
		45	mA	T_J = 125°C	
C_T	Max. Junction Capacitance	2900	pF	V_R = 5V_{DC}, (100KHz to 1MHz) 25°C ②	
L_S	Typical Series Inductance	2.8	nH	Measured from center of bond pad to end of anode bonding wire	

Thermal-Mechanical Specifications

	Parameters	60LQ045	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	1.0	°C/W	DC operation See Fig. 4
R_{thJC}	Max. Thermal Resistance, Junction to case (Per Package)	0.50	°C/W	DC operation
wt	Weight (Typical)	2.6	g	
	Die Description (Square)	0.200	inches	
	Case Style	SMD-1		

① Pulse Width < 300µs, Duty Cycle < 2%
② Pins 2 and 3 externally tied together

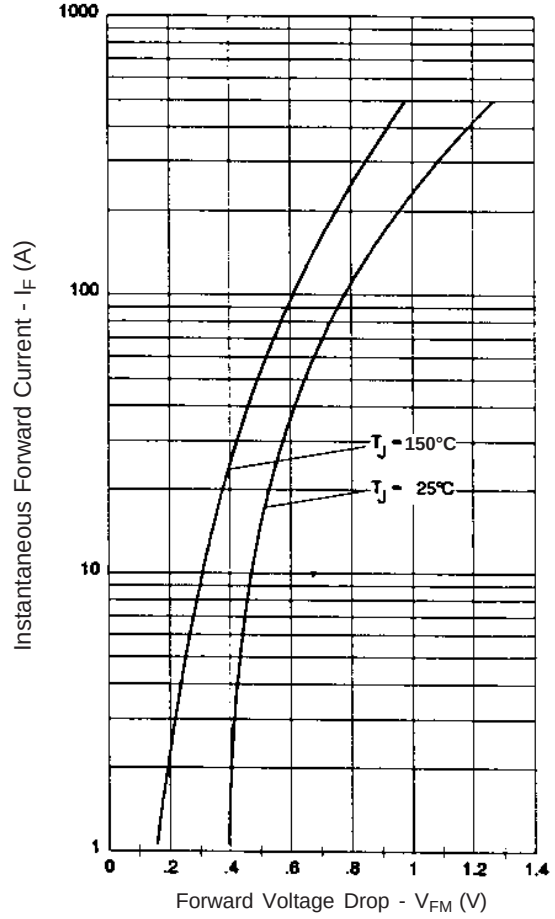


Fig. 1 - Max. Forward Voltage Drop Characteristics

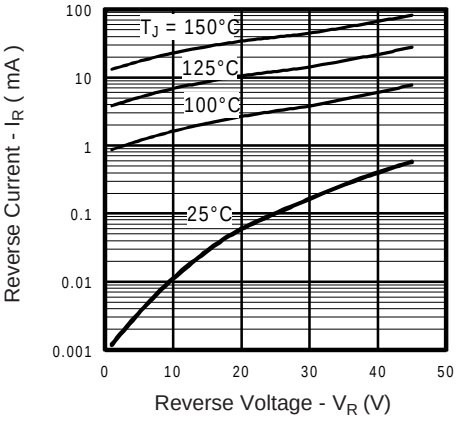


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

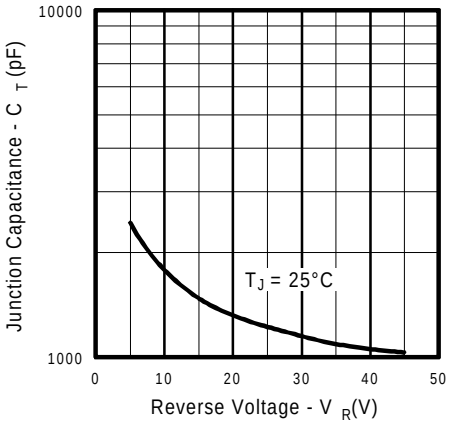


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

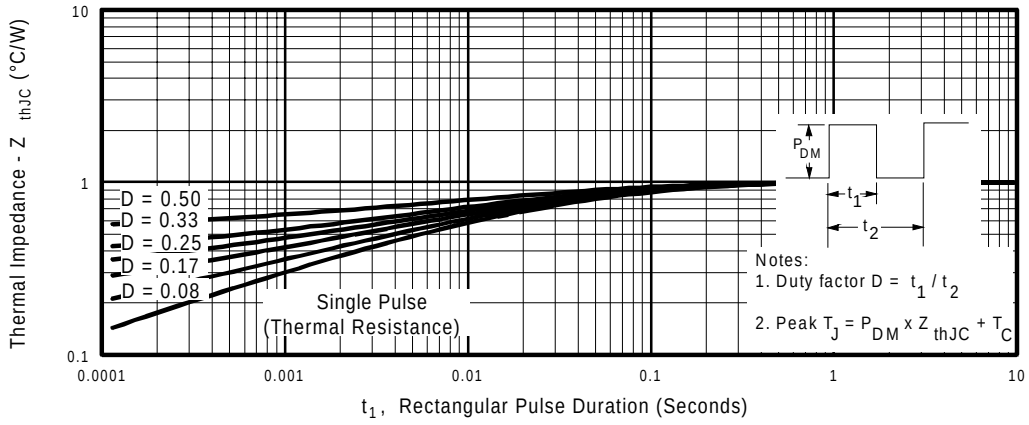


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

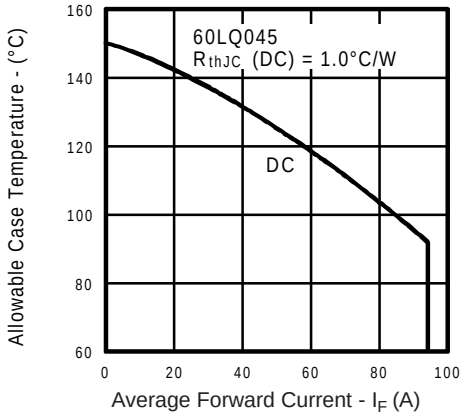


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current

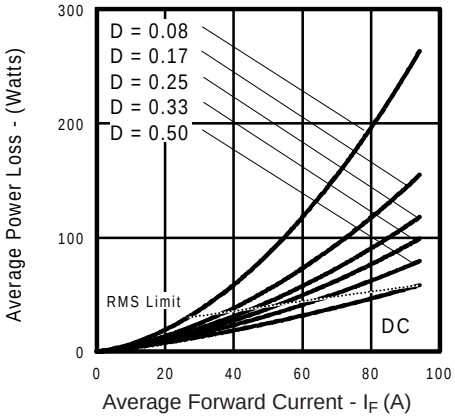


Fig. 6 - Forward Power Loss Characteristics

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