

International  
**IR** Rectifier  
 SCHOTTKY RECTIFIER  
 HIGH EFFICIENCY SERIES

**60LQ045**

60A, 30V

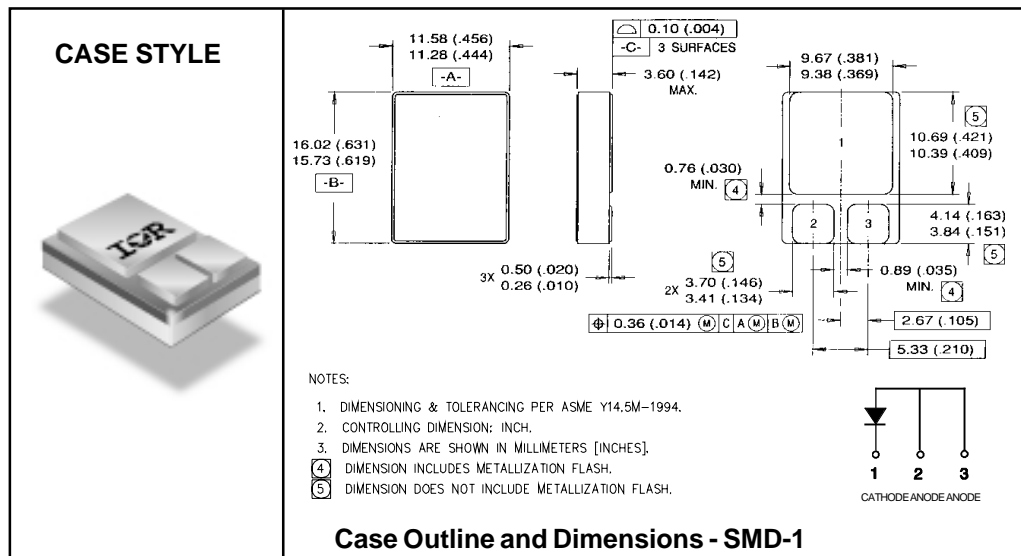
**Major Ratings and Characteristics**

Characteristics	60LQ045	Units
$I_{F(AV)}$	60	A
$V_{RRM}$	45	V
$I_{FSM}$ @ $t_p = 8.3ms$ half-sine	400	A
$V_F$ @ 60Apk, $T_J = 125^\circ C$	0.6	V
$T_J, T_{stg}$ Operating and storage	-55 to 150	$^\circ C$

**Description/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. 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 convertors. Full MIL-PRF-19500 quality conformance testing is available on control drawings to TX, TXV and S quality levels.

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



60LQ045

International  
**IOR** Rectifier**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	Limits	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 5	60	A	50% duty cycle @ $T_C = 105^\circ\text{C}$ , square waveform
$I_{FSM}$ Max. Peak One Cycle Non - Repetitive Surge Current	400	A	@ $t_p = 8.3$ ms half-sine

**Electrical Specifications**

Parameters	Limits	Units	Conditions
$V_{FM}$ Max. Forward Voltage Drop See Fig. 1 ①	0.68	V	@ 60A $T_J = 25^\circ\text{C}$ ②
	0.82	V	@ 120A $T_J = 25^\circ\text{C}$ ②
	0.6	V	@ 60A $T_J = 125^\circ\text{C}$ ②
	0.74	V	@ 120A $T_J = 125^\circ\text{C}$ ②
$I_{RM}$ Max. Reverse Leakage Current See Fig. 2 ①	0.8	mA	$T_J = 25^\circ\text{C}$ $V_R = \text{rated } V_R$ ②
	45	mA	$T_J = 125^\circ\text{C}$ $V_R = \text{rated } V_R$ ②
$C_T$ Max. Junction Capacitance	2900	pF	$V_R = 5V_{DC}$ , (1MHz, $25^\circ\text{C}$ ) ②
$L_S$ Typical Series Inductance	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	1.0	$^\circ\text{C}/\text{W}$	DC operation See Fig. 4
wt Weight (Typical)	2.6	g	
Die Size	200X200	mils	
Case Style	SMD-1		

① Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

② Pins 2 and 3 externally tied together

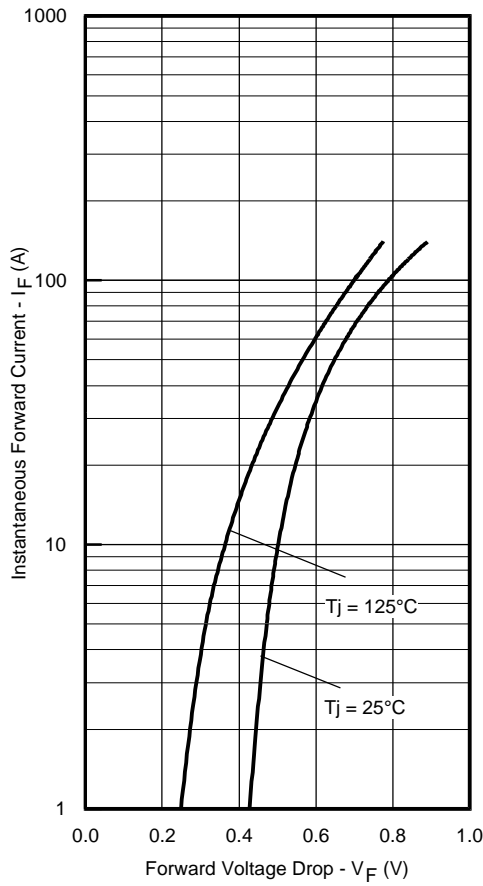


Fig. 1 - Max. Forward Voltage Drop Characteristics

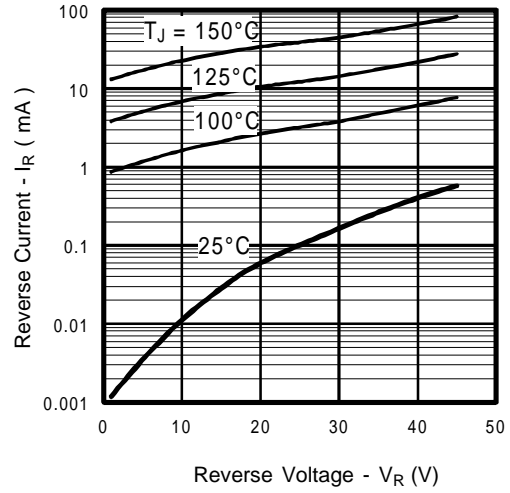


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

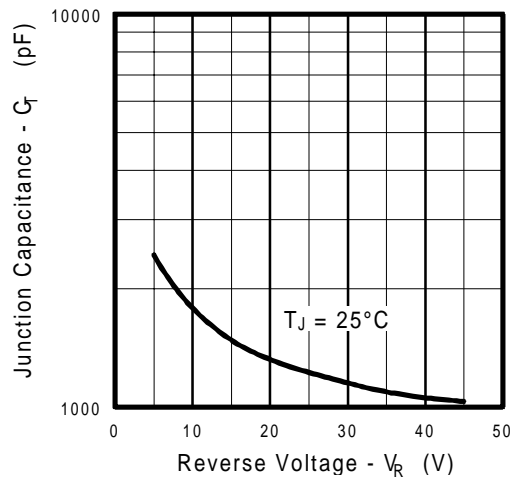


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

60LQ045

International  
**IR** Rectifier

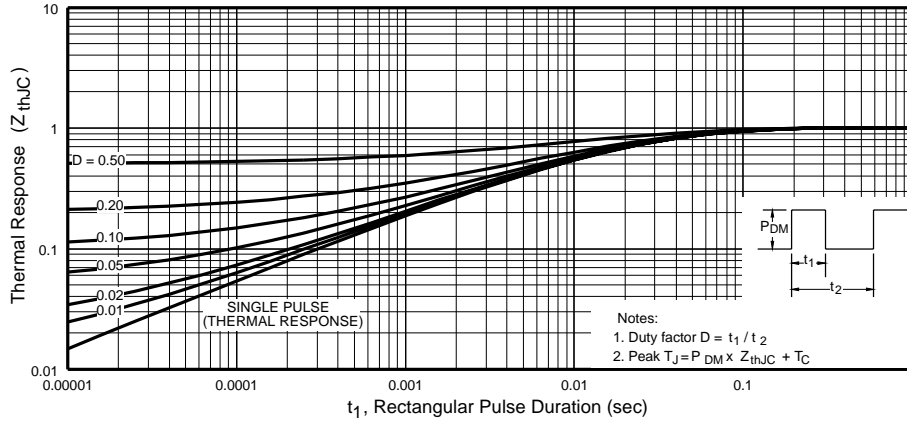


Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics

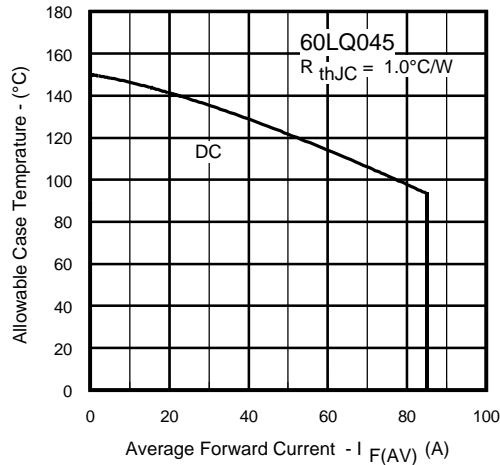


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current

International  
**IR** Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105  
TAC Fax: (310) 252-7903

Visit us at [www.irf.com](http://www.irf.com) for sales contact information.  
Data and specifications subject to change without notice. 03/02

[www.irf.com](http://www.irf.com)