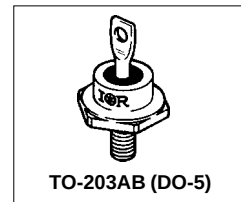


International IOR Rectifier

SCHOTTKY RECTIFIER

SD51

60 Amp



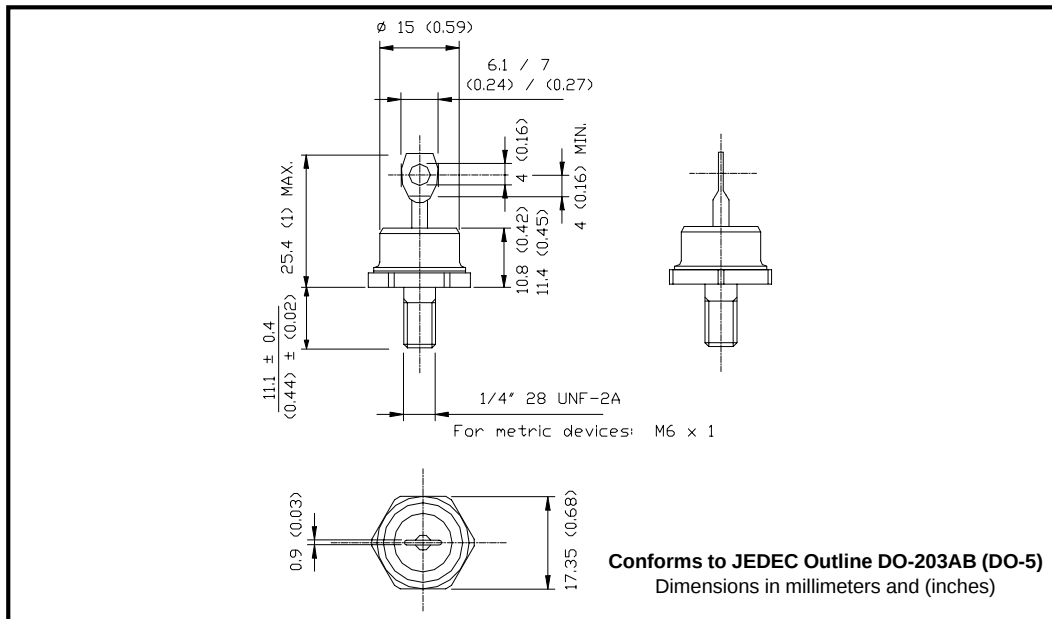
Major Ratings and Characteristics

Characteristics	SD51...	Units
$I_{F(AV)}$ Rectangular waveform	60	A
V_{RRM}	45	V
I_{FSM} @ 60Hz	800	A
V_F @ 120Apk, $T_J = 150^\circ\text{C}$	0.75	V
T_J	-65 to 150	$^\circ\text{C}$

Description/ Features

The SD51 Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. The proprietary barrier technology allows for reliable operation up to 150°C junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- 150°C T_J operation
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Hermetic packaging



SD51

Bulletin PD-2.327 rev. C 11/02

International
IRF Rectifier

Voltage Ratings

Part number	SD51
V_R Max. DC Reverse Voltage (V)	45 (1)
V_{RWM} Max. Working Peak Reverse Voltage (V)	

(1) For SD51 V_{RWM} and V_{RRM} = 45V @ T_J = 25°C, =35V @ T_J = 150°C

Absolute Maximum Ratings

Parameters	SD51	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current * See Fig. 5	60	A	50% duty cycle @ T_C = 90°C, rectangular wave form
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 7	800	A	60Hz half cycle sine wave or 5ms rectangular pulse Following any rated load condition and with rated V_{RRM} applied

Electrical Specifications

Parameters	SD51	Units	Conditions
V_{FM} Max. Forward Voltage Drop (2) * See Fig. 1	0.58	V	@ 35A T_J = 25 °C
	0.66	V	@ 60A
	0.86	V	@ 120A
	0.75	V	@ 120A T_J = 150 °C
I_{RM} Max. Reverse Leakage Current (2) * See Fig. 2	50	mA	T_J = 25 °C
	200	mA	T_J = 125 °C V_R = rated V_R
C_T Max. Junction Capacitance	2900	pF	V_R = 5V _{DC} , (test signal range 100Khz to 1Mhz) 25 °C
L_S Typical Series Inductance	7.5	nH	Measured from top of terminal to mounting plane
dv/dt Max. Voltage Rate of Change (Rated V_R)	10000	V/μs	

(2) Pulse Width < 300μs, Duty Cycle < 2%

Thermal-Mechanical Specifications

Parameters	SD51	Units	Conditions
T_J Max. Junction Temperature Range	-65 to 150	°C	
T_{stg} Max. Storage Temperature Range	-65 to 150	°C	
R_{thJC} Max. Thermal Resistance Junction to Case	1.0	°C/W	DC operation * See Fig. 4
R_{thCS} Typical Thermal Resistance, Case to Heatsink	0.25	°C/W	Mounting surface, smooth and greased
wt Approximate Weight	15(0.53)	g(oz.)	
T Mounting Torque	Min. 23(20)	Kg-cm (lbf-in)	Non-lubricated threads
	Max. 46(40)		
Case Style	DO-203AB(DO-5)		JEDEC

* For Additional Informations and Graphs, Please See the 50HQ Series

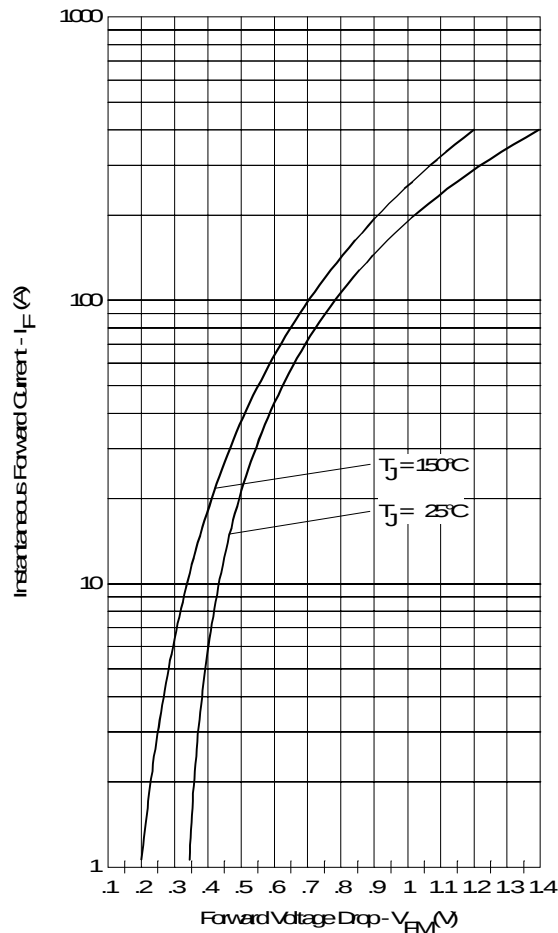


Fig. 1 - Maximum Forward Voltage Drop Characteristics

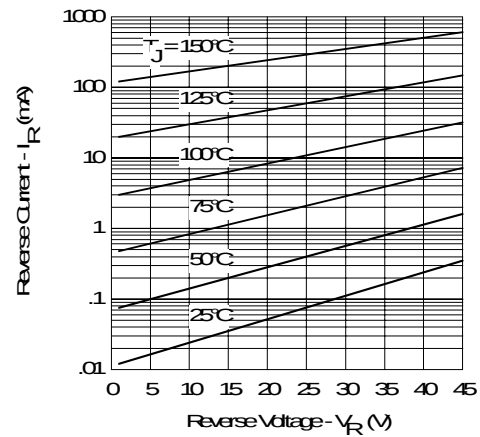


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

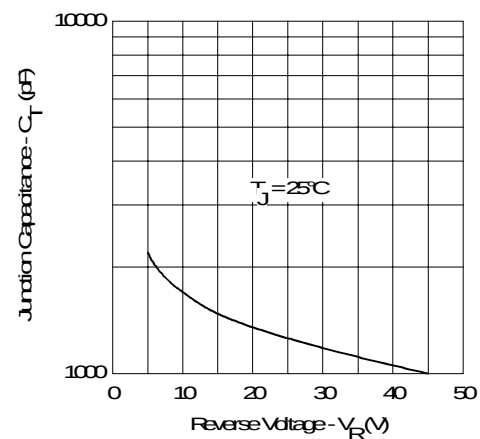


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

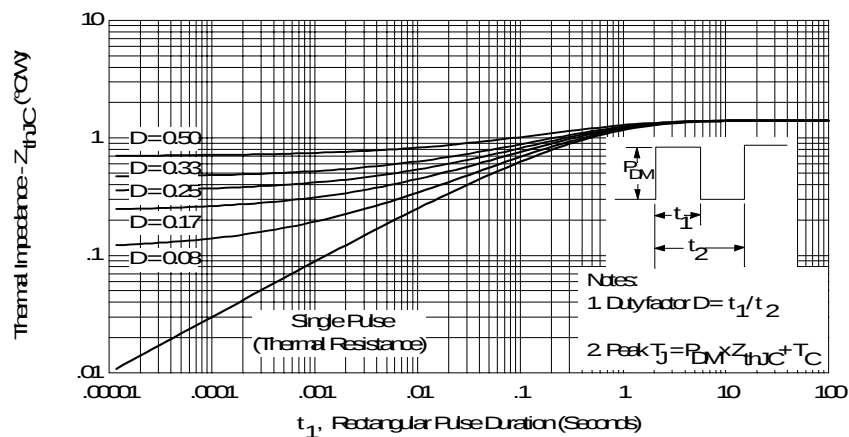


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

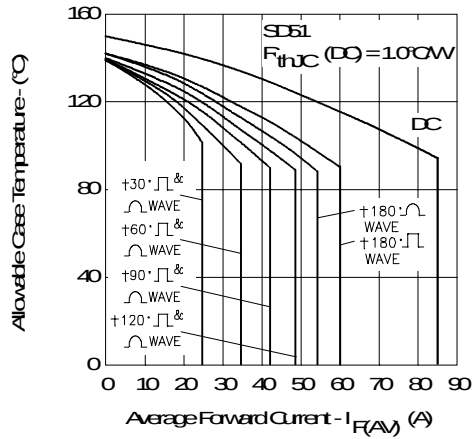


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

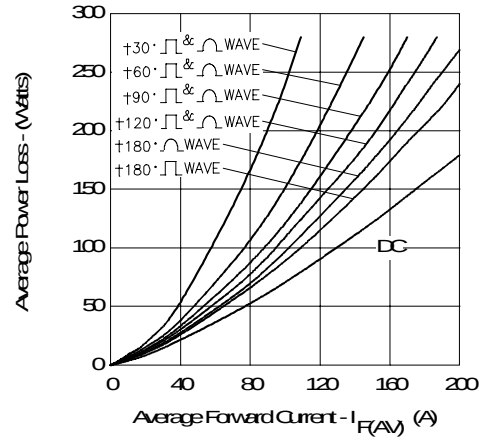


Fig. 6 - Forward Power Loss Characteristics

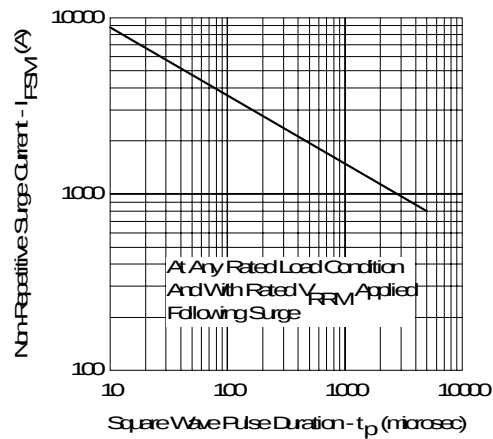


Fig. 7 - Max. Non-Repetitive Surge Current

Data and specifications subject to change without notice.
This product has been designed for Industrial Level.
Qualification Standards can be found on IR's Web site.

International
IR Rectifier

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

TAC Fax: (310) 252-7309

Visit us at www.irf.com for sales contact information. 11/02