PD-2.328 rev. A 12/97

International
IOR Rectifier

SD41

SCHOTTKY RECTIFIER 30 Amp

Major Ratings and Characteristics

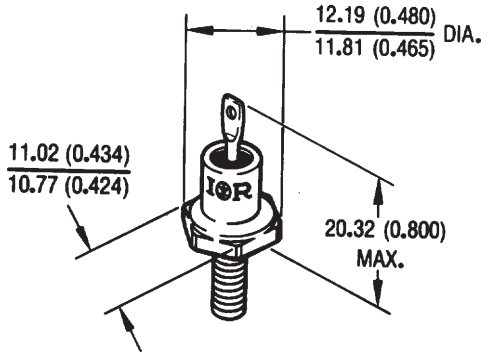
Characteristics	SD41	Units
$I_{F(AV)}$ Rectangular waveform	30	A
V_{RWM}	35/45	V
I_{FSM} @ 60Hz	600	A
V_F @ 60Apk, T_J=150°C	0.70	V
T_J	-65 to 150	°C

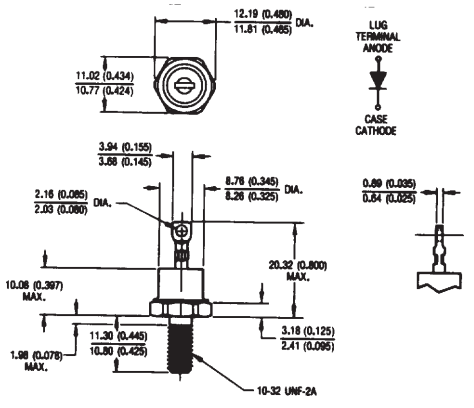
Description/Features

The SD41 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

CASE STYLE AND DIMENSIONS





Conforms to JEDEC Outline DO-203AA (DO-4)

Dimensions in millimeters and inches

Voltage Ratings

	Part number	SD41
V_R	Max. DC Reverse Voltage (V)	35/45 (1)
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

(1) For SD41 rated V_{RWM} and V_{RRM} = 45V @ T_J = 25°C , = 35V @ T_J = 150°C

Absolute Maximum Ratings

	Parameters	SD41	Units	Conditions	
$I_{F(AV)}$	Max. Average Forward Current *See Fig. 5	30	A	50% duty cycle @ T_C = 96° C, rectangular wave form	
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current *See Fig. 7	600	A	60Hz half cycle sine wave or 5ms rectangular pulse	Following any rated load condition and with rated V_{RRM} applied

Electrical Specifications

	Parameters	SD41	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (2) * See Fig. 1	0.58	V	@ 30A	T_J = 25 °C
		0.75	V	@ 60A	
		0.70	V	@ 60A	T_J = 150 °C
I_{RM}	Max. Reverse Leakage Current (2) * See Fig. 2	50	mA	T_J = 25 °C	V_R = rated V_R
		125	mA	T_J = 125 °C	
C_T	Max. Junction Capacitance	2000	pF	V_R = 5V_{DC}, (test signal range 100Khz to 1Mhz) 25 °C	
L_S	Typical Series Inductance	6.5	nH	Measured from top of terminal to mounting plane	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	1000	V/ µs		

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

Thermal-Mechanical Specifications

	Parameters		SD41	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		2.0	°C/W	DC operation * See Fig. 4
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.50	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight		5.8 (0.20)	g (oz.)	
T	Mounting Torque	Min.	14 (12)	Kg-cm (lbf-in)	Non-lubricated threads
		Max.	23 (20)		
	Case Style		DO-203AA (DO-4)		JEDEC

* For Additional Information and Graphs, Please See the 21FQ Series

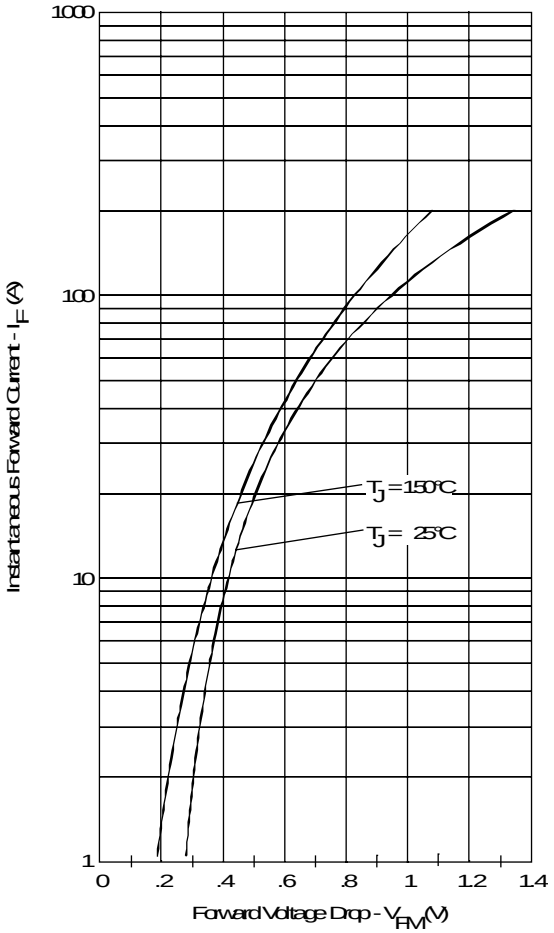


Fig. 1 - Maximum Forward Voltage Drop Characteristics

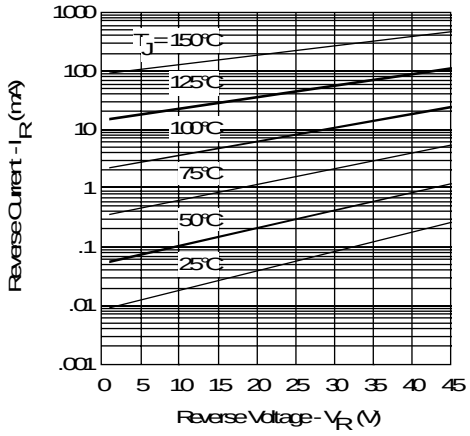


Fig. 2 - Typical Values of Reverse Current
Vs. Reverse Voltage

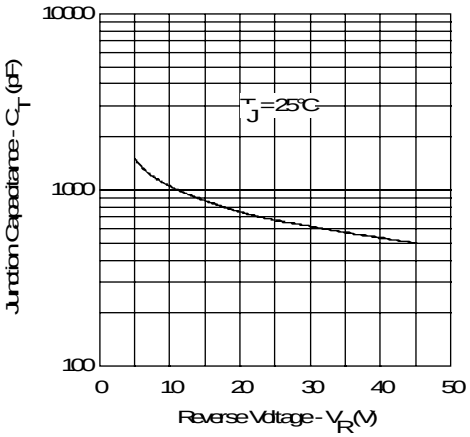


Fig. 3 - Typical Junction Capacitance
Vs. Reverse Voltage

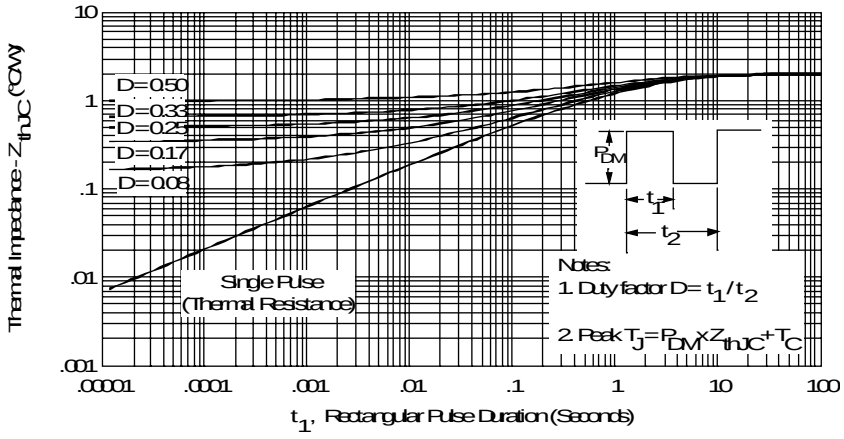


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

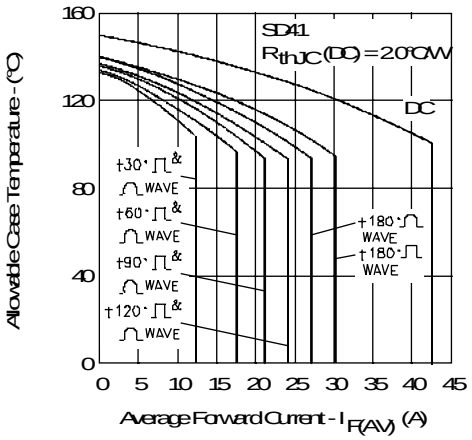


Fig. 5 - Maximum Allowable Case Temperature
Vs. Average Forward Current

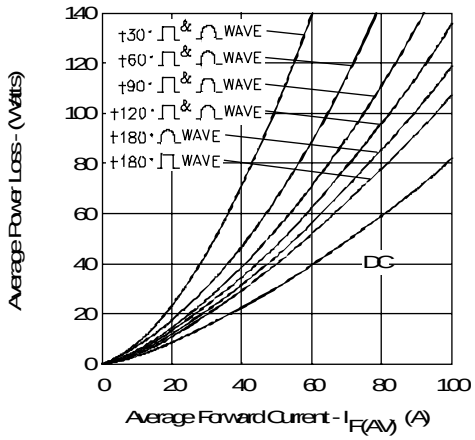


Fig. 6 - Forward Power Loss Characteristics

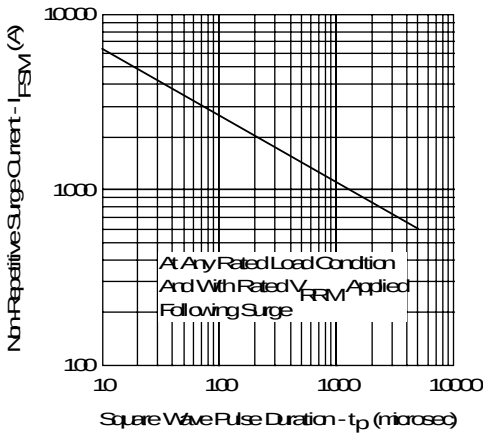


Fig. 7 - Max. Non-Repetitive Surge Current