

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Vishay Semiconductor/Diodes Division](#)
[185NQ015](#)

For any questions, you can email us directly:

sales@integrated-circuit.com

International IOR Rectifier

185NQ015

SCHOTTKY RECTIFIER

180 Amp

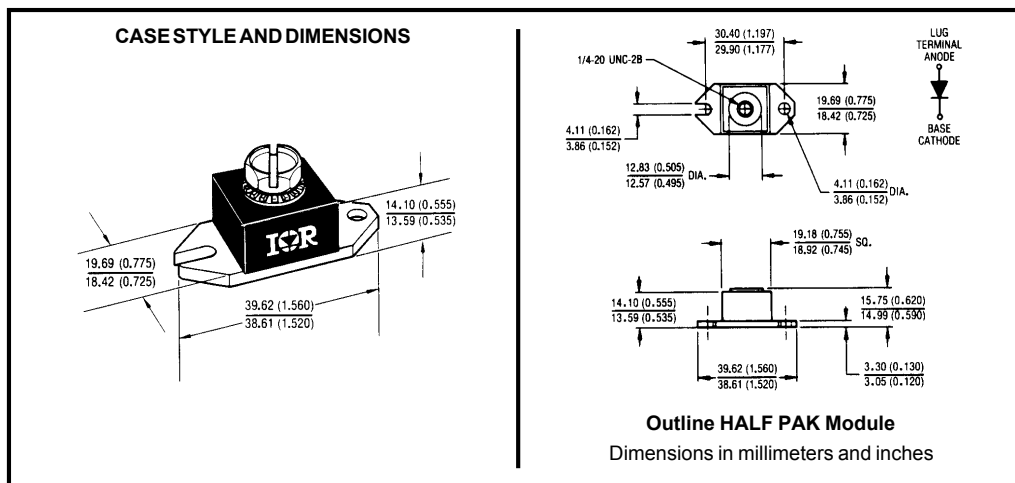
Major Ratings and Characteristics

Characteristics	185NQ015	Units
$I_{F(AV)}$ Rectangular waveform	180	A
V_{RRM}	15	V
I_{FSM} @ $t_p = 5 \mu s$ sine	15,000	A
V_F @ 180Apk, $T_J = 75^\circ C$	0.34	V
T_J range	-55 to 125	$^\circ C$

Description/Features

The 185NQ015 high current Schottky rectifier module has been optimized for ultra low forward voltage drop specifically for the OR-ing of parallel power supplies. The proprietary barrier technology allows for reliable operation up to 125 $^\circ C$ junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

- 125 $^\circ C$ T_J operation ($V_R < 5V$)
- Unique high power, Half-Pak module
- Optimized for OR-ing applications
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance



185NQ015

Bulletin PD-2.279 rev. B 02/01

International
IR Rectifier

Voltage Ratings

Part number	185NQ015
V _R Max. DC Reverse Voltage (V)	15
V _{RMM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	185NQ	Units	Conditions
I _{F(AV)} Max. Average Forward Current * See Fig. 5	180	A	50% duty cycle @ T _C = 66°C, rectangular wave form
I _{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 7	15,000	A	Following any rated load condition and with rated V _{RRM} applied
	2250		
E _{AS} Non-Repetitive Avalanche Energy	9	mJ	T _J = 25°C, I _{AS} = 2 Amps, L = 4.5 mH
I _{AR} Repetitive Avalanche Current	2	A	Current decaying linearly to zero in 1 μsec Frequency limited by T _J max. V _A = 3 x V _R typical

Electrical Specifications

Parameters	185NQ	Units	Conditions
V _{FM} Max. Forward Voltage Drop (1) * See Fig. 1	0.40	V	@ 180A T _J = 25°C
	0.51	V	@ 360A
	0.34	V	@ 180A T _J = 75°C
	0.45	V	@ 360A
I _{RM} Max. Reverse Leakage Current (1) * See Fig. 2	60	mA	T _J = 25°C V _R = rated V _R
	3000	mA	T _J = 100°C
	2670	mA	T _J = 100°C V _R = 12V
	1620	mA	T _J = 100°C V _R = 5V
C _T Max. Junction Capacitance	12,300	pF	V _R = 5V _{DC} , (test signal range 100Khz to 1Mhz) 25°C
L _S Typical Series Inductance	6.0	nH	From top of terminal hole to mounting plane
dv/dt Max. Voltage Rate of Change (Rated V _R)	10,000	V/ μs	

Thermal-Mechanical Specifications

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

Parameters	185NQ	Units	Conditions	
T _J Max. Junction Temperature Range	-55 to 125	°C		
T _{stg} Max. Storage Temperature Range	-55 to 150	°C		
R _{thJC} Max. Thermal Resistance Junction to Case	0.30	°C/W	DC operation * See Fig. 4	
R _{thCS} Typical Thermal Resistance, Case to Heatsink	0.15	°C/W	Mounting surface, smooth and greased	
wt Approximate Weight	25.6 (0.9)	g (oz.)		
T Mounting Torque	Min.	40 (35)	Non-lubricated threads	
	Max.	58 (50)		
	Terminal Torque	Min.		58 (50)
		Max.		86 (75)
Case Style	HALF PAK Module			

International
IOR Rectifier

185NQ015

Bulletin PD-2.279 rev. B 02/01

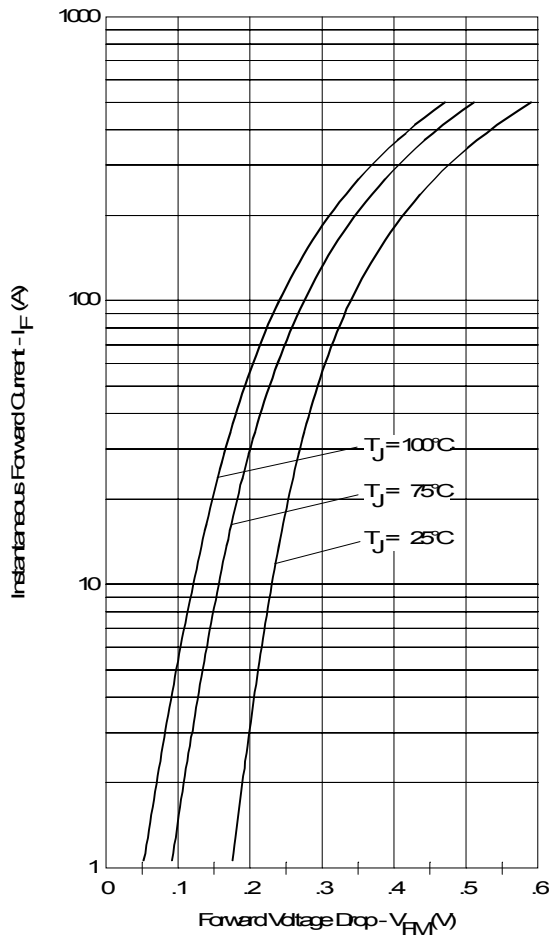


Fig. 1 - Maximum Forward Voltage Drop Characteristics

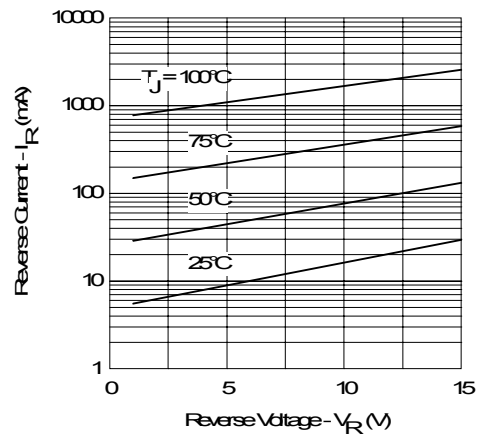


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

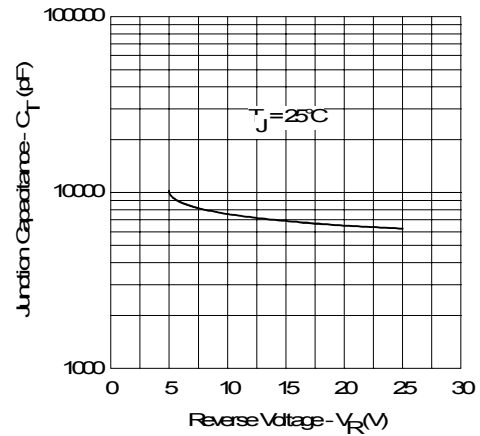


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

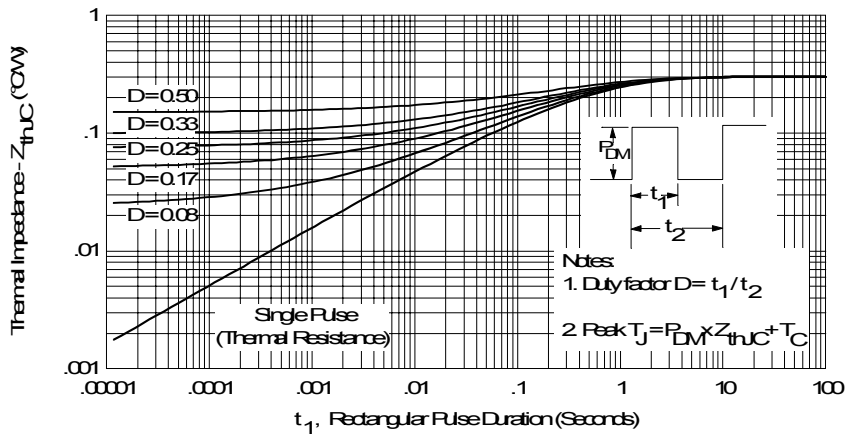


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

185NQ015

Bulletin PD-2.279 rev. B 02/01

International
IR Rectifier

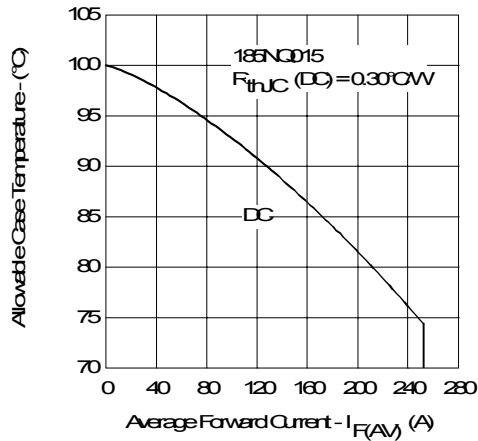


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

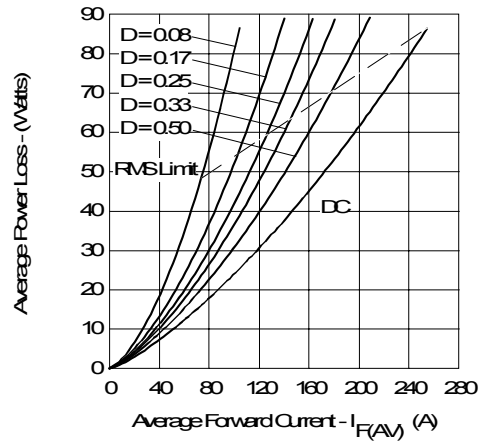


Fig. 6 - Forward Power Loss Characteristics

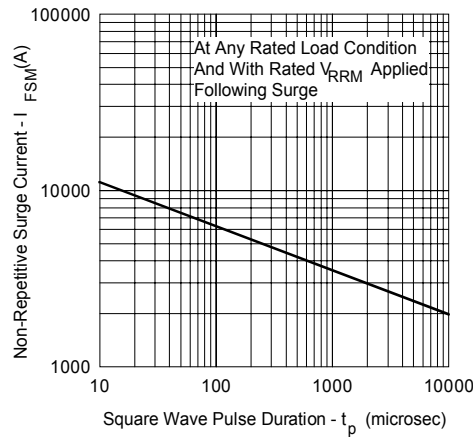


Fig. 7 - Maximum Non-Repetitive Surge Current

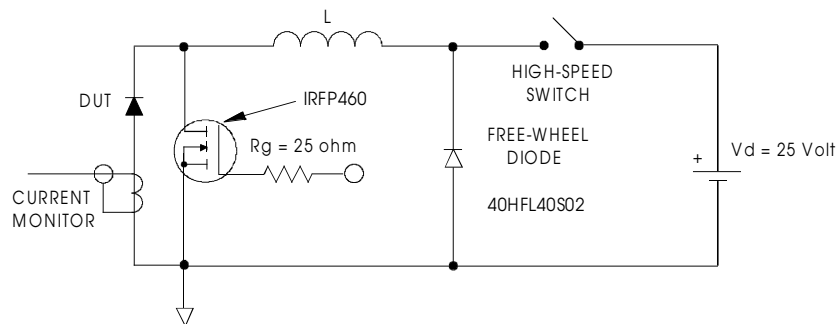


Fig. 8 - Unclamped Inductive Test Circuit