International
IOR Rectifier

225CNQ015

SCHOTTKY RECTIFIER

220 Amp

Major Ratings and Characteristics

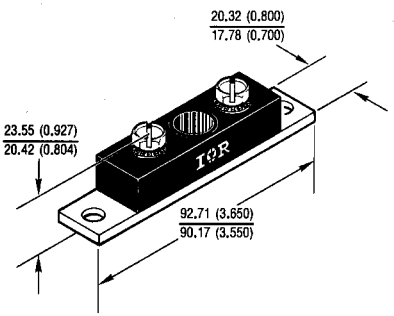
Characteristics	225CNQ015	Units
$I_{F(AV)}$ Rectangular waveform	220	A
V_{RRM}	15	V
I_{FSM} @ tp = 5 µs sine	10,800	A
V_F @ 110Apk, T_J=75°C (per leg)	0.32	V
T_J	-55 to 100	°C

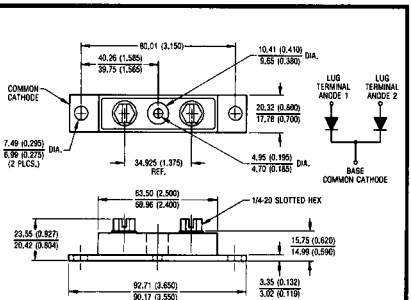
Description/Features

The 225CNQ015 high current, center tap Schottky modules have 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 100° C junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

- 100° C T_J operation
- Center tap module
- Optimized for OR ' ing applications
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Ultra low forward voltage drop
- High frequency operation
- Guard ring enhanced ruggedness and long term reliability

CASE STYLE AND DIMENSIONS





Modified JEDEC Outline TO - 244AB
Dimensions in millimeters and inches

TO-244 MODULES

Voltage Ratings

	Part number	225CNQ015
V_R	Max. DC Reverse Voltage (V)	15
V_{RWM}	Max. Working Peak Reverse Voltage (V)	25

Absolute Maximum Ratings

	Parameters	225CNQ	Units	Conditions	
$I_{F(AV)}$	Max. Average Forward Current *See Fig. 5	220	A	50% duty cycle @ T_C = 74 °C, rectangular wave form	
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg) * See Fig. 7	10,800	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
		1700		10ms Sine or 6ms Rect. pulse	
E_{AS}	Non-Repetitive Avalanche Energy (Per Leg)	9	mJ	T_J = 25 °C, I_{AS} = 2 Amps, L = 4.5 mH	
I_{AR}	Repetitive Avalanche Current (Per Leg)	2	A	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A = 3.0 x V_R typical	

Electrical Specifications

	Parameters	225CNQ	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	0.38	V	@ 110A	T_J = 25 °C
		0.49	V	@ 220A	
		0.32	V	@ 110A	T_J = 75 °C
		0.42	V	@ 220A	
I_{RM}	Max. Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	40	mA	T_J = 25 °C	V_R = rated V_R
		2000	mA	T_J = 125 °C	
		1780	mA	T_J = 100 °C	V_R = 12 V
		1080	mA	T_J = 100 °C	V_R = 5 V
C_T	Max. Junction Capacitance (Per Leg)	7700	pF	V_R = 5V_{DC}, (test signal range 100Khz to 1Mhz) 25°C	
L_S	Typical Series Inductance (Per Leg)	7.0	nH	From top of terminal hole to mounting plane	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	10,000	V/ µs		

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

Thermal-Mechanical Specifications

	Parameters		225CNQ	Units	Conditions
T_J	Max. Junction Temperature Range		-55 to 100	°C	
T_{stg}	Max. Storage Temperature Range		-55 to 100	°C	
R_{thJC}	Max. Thermal Resistance Junction to Case (Per Leg)		0.40	°C/W	DC operation *See Fig. 4
R_{thJC}	Max. Thermal Resistance Junction to Case (Per Package)		0.20	°C/W	DC operation
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.10	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight		79 (2.80)	g (oz.)	
T	Mounting Torque Base	Min.	40 (35)	Kg-cm (lbf-in)	
		Max.	58 (50)		
	Mounting Torque Center Hole	Typ.	17 (15)		
	Terminal Torque	Min.	58 (50)		
		Max.	86 (75)		
	Case Style		TO-244AB		Modified JEDEC

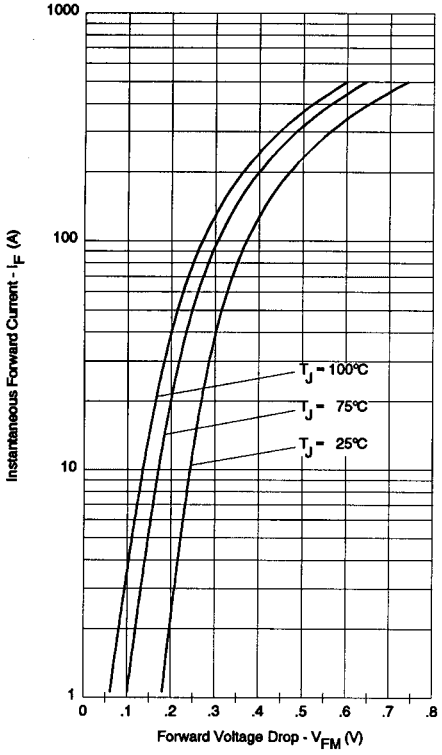


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

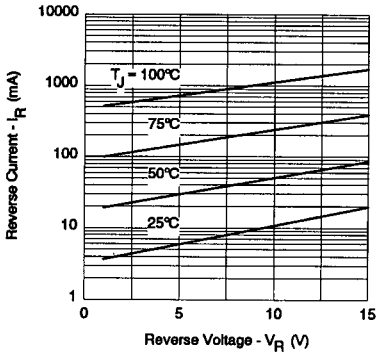


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

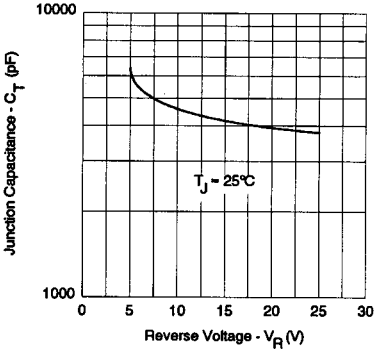


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

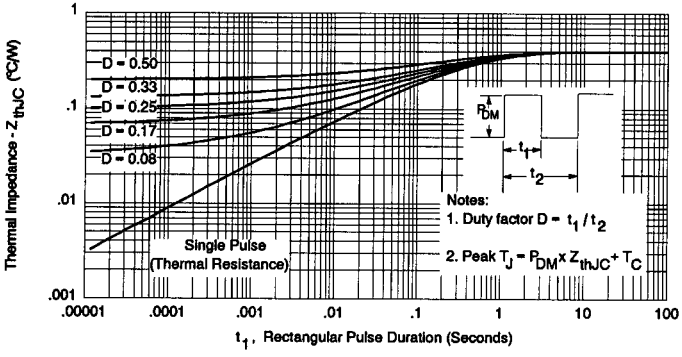


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

TO-244 MODULES

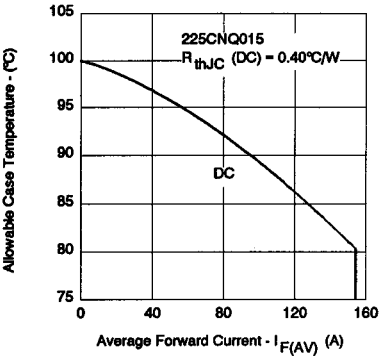


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

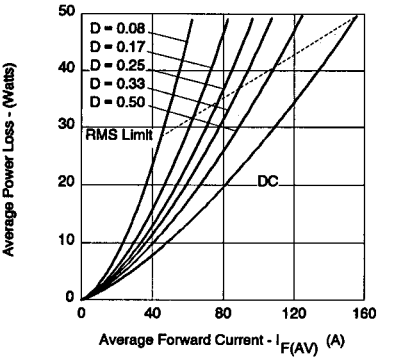


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

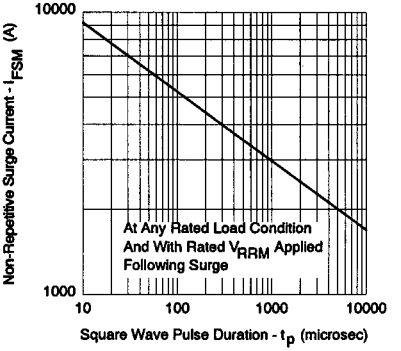


Fig. 7 - Max. Non-Repetitive Surge Current (Per Leg)

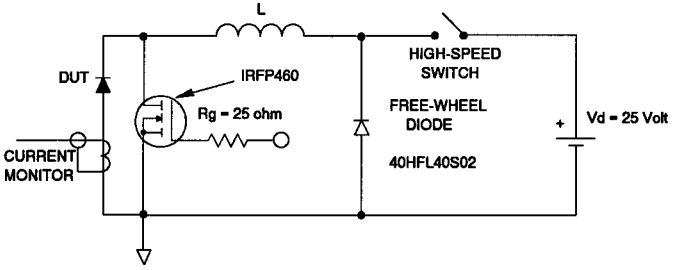


Fig. 8 - Unclamped Inductive Test Circuit