

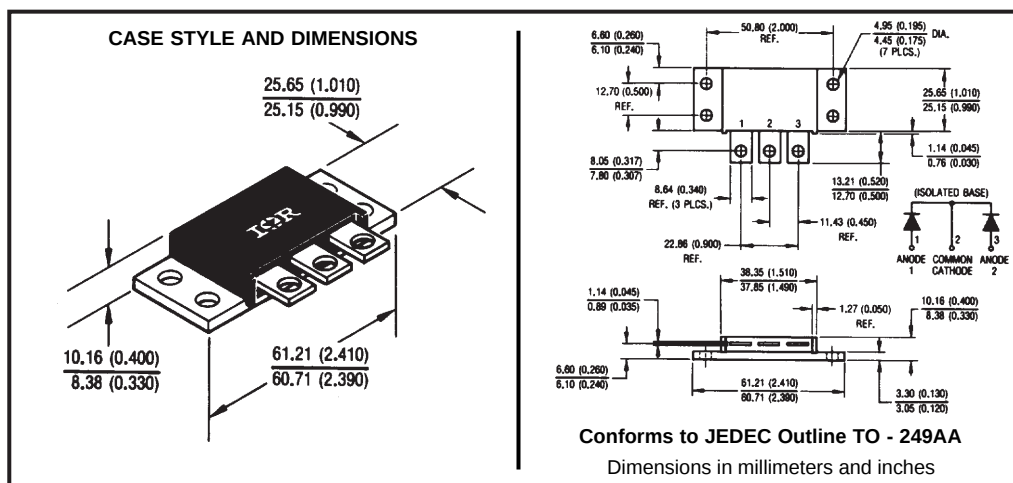
Major Ratings and Characteristics

Characteristics	322CNQ030	Units
$I_{F(AV)}$ Rectangular waveform	300	A
V_{RRM}	30	V
I_{FSM} @ $t_p = 5 \mu s$ sine	10,000	A
V_F @ 150Apk, $T_J = 125^\circ C$ (per leg)	0.56	V
T_J range	-55 to 150	$^\circ C$

Description/Features

The 322CNQ030 isolated center tap Schottky rectifier module series has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to $150^\circ C$ junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- $150^\circ C$ T_J operation
- High Surge Capability
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, high current package



322CNQ030

Preliminary Data Sheet PD-2.550 01/98

International
IR Rectifier

Voltage Ratings

Part number	322CNQ030
V_R Max. DC Reverse Voltage (V)	30
V_{RWM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	322CNQ	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current (Per Leg)	300	A	50% duty cycle @ $T_C = 87^\circ\text{C}$, rectangular wave form
	150	A	
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg)	10,000	A	5 μs Sine or 3 μs Rect. pulse
	1500		10ms Sine or 6ms Rect. pulse
E_{AS} Non-Repetitive Avalanche Energy (Per Leg)	270	mJ	Following any rated load condition and with rated V_{RRM} applied $T_J = 25^\circ\text{C}$, $I_{AS} = 1\text{ Amps}$, $L = 30\text{ mH}$
I_{AR} Repetitive Avalanche Current (Per Leg)	60	A	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical

Electrical Specifications

Parameters	322CNQ	Units	Conditions
V_{FM} Max. Forward Voltage Drop (Per Leg)	0.56	V	@ 150A
	0.70	V	@ 300A
	0.49	V	@ 150A
	0.68	V	@ 300A
I_{RM} Max. Reverse Leakage Current (Per Leg)	10	mA	$T_J = 25^\circ\text{C}$
	650	mA	$T_J = 125^\circ\text{C}$
C_T Max. Junction Capacitance (Per Leg)	5500	pF	$V_R = 5V_{DC}$, (test signal range 100Khz to 1Mhz) 25°C
L_S Typical Series Inductance (Per Leg)	8.0	nH	Measured from terminal hole to terminal hole
dv/dt Max. Voltage Rate of Change (Rated V_R)	10,000	V/ μs	

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

Thermal-Mechanical Specifications

Parameters	322CNQ	Units	Conditions
T_J Max. Junction Temperature Range	-55to150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55to150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance Junction to Case (Per Leg)	0.50	$^\circ\text{C/W}$	DC operation
R_{thJC} Max. Thermal Resistance Junction to Case (Per Package)	0.25	$^\circ\text{C/W}$	DC operation
R_{thCS} Typical Thermal Resistance, Case to Heatsink	0.10	$^\circ\text{C/W}$	Mounting surface , smooth and greased
wt Approximate Weight	58 (2.0)	g (oz.)	
T Mounting Torque	Min. 40 (35)	Kg-cm (lbf-in)	
	Max. 58 (50)		
Case Style	TO - 249AA	JEDEC	