

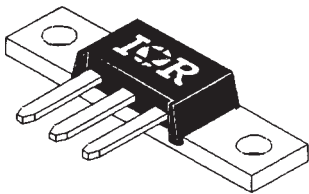
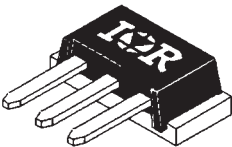
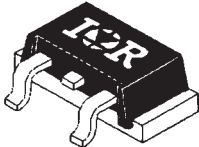
Major Ratings and Characteristics

Characteristics	82CNQ030	Units
$I_{F(AV)}$ Rectangular waveform	80	A
V_{RRM}	30	V
I_{FSM} @ tp=5 μ s sine	5100	A
V_F @ 40 Apk, $T_J=125^{\circ}C$ (per leg)	0.37	V
T_J range	-55 to 150	$^{\circ}C$

Description/Features

The 82CNQ030 center tap Schottky rectifier module has been optimized for very low forward voltage drop, with moderate leakage. 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
- Center tap module
- Very low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, small footprint, high current package

Case Styles		
82CNQ030  D61-8	82CNQ030SM  D61-8-SM	82CNQ030SL  D61-8-SL

Voltage Ratings

Part number	82CNQ030
V_R Max. DC Reverse Voltage (V)	30
V_{RWM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters		82CNQ	Units	Conditions		
I _{F(AV)}	Max. Average Forward Current * See Fig. 5	80	A	50% duty cycle @ T _C = 119°C, rectangular wave form		
I _{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg) * See Fig. 7	5100	A	5μs Sine or 3μs Rect. pulse	Following any rated load condition and with rated V _{RRM} applied	
		880		10ms Sine or 6ms Rect. pulse		
E _{AS}	Non-Repetitive Avalanche Energy (Per Leg)	36	mJ	T _J = 25 °C, I _{AS} = 8 Amps, L = 1.12 mH		
I _{AR}	Repetitive Avalanche Current (Per Leg)	8	A	Current decaying linearly to zero in 1μsec Frequency limited by T _J max. V _A = 1.5 x V _R typical		

Electrical Specifications

Parameters		82CNQ	Units	Conditions	
V _{FM}	Max. Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	0.47	V	@ 40A	T _J = 25 °C
		0.55	V	@ 80A	
		0.37	V	@ 40A	T _J = 125 °C
		0.47	V	@ 80A	
I _{RM}	Max. Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	5	mA	T _J = 25 °C	V _R = rated V _R
		280	mA	T _J = 125 °C	
C _T	Max. Junction Capacitance (Per Leg)	3700	pF	V _R = 5V _{DC} , (test signal range 100Khz to 1Mhz) 25°C	
L _S	Typical Series Inductance (Per Leg)	5.5	nH	Measured lead to lead 5mm from package body	
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	82CNQ	Units	Conditions
T_J Max. Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance Junction to Case (Per Leg)	0.85	$^\circ\text{C/W}$	DC operation * See Fig. 4
R_{thJC} Max. Thermal Resistance Junction to Case (Per Package)	0.42	$^\circ\text{C/W}$	DC operation
R_{thCS} Typical Thermal Resistance, Case to Heatsink (D61-8 Only)	0.30	$^\circ\text{C/W}$	Mounting surface, smooth and greased
wt Approximate Weight	7.8(0.28)	g(oz.)	
T Mounting Torque (D61-8 Only)	Min.	40(35)	Kg-cm (lbf-in)
	Max.	58(50)	

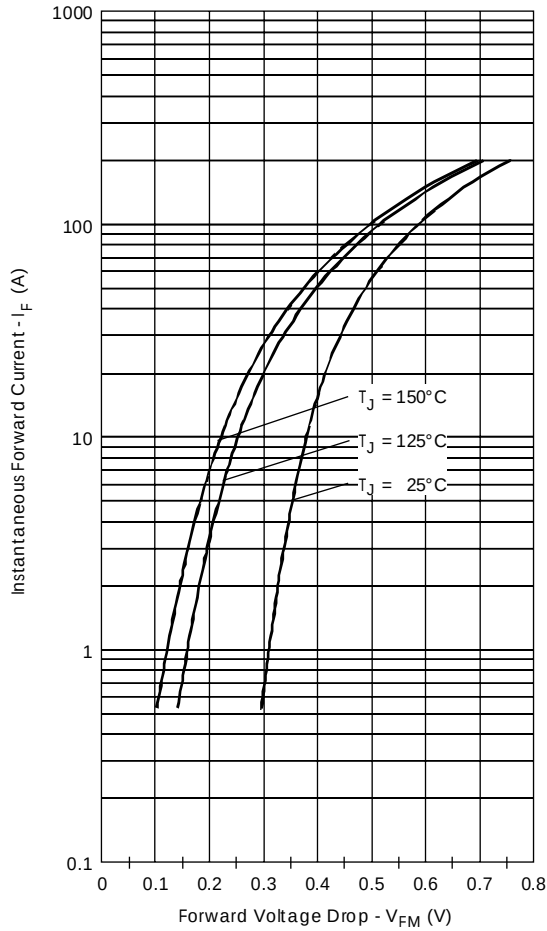


Fig. 1 - Max. Forward Voltage Drop Characteristics (PerLeg)

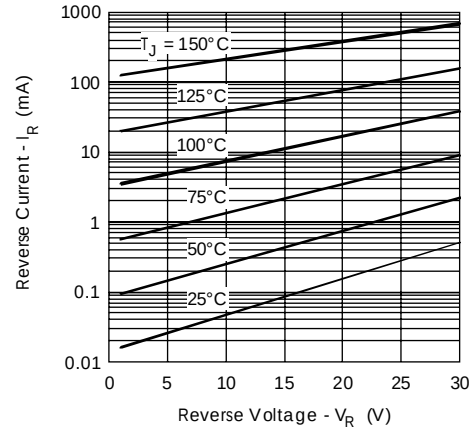


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

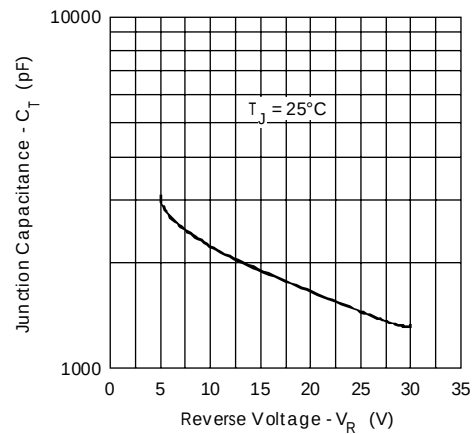


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

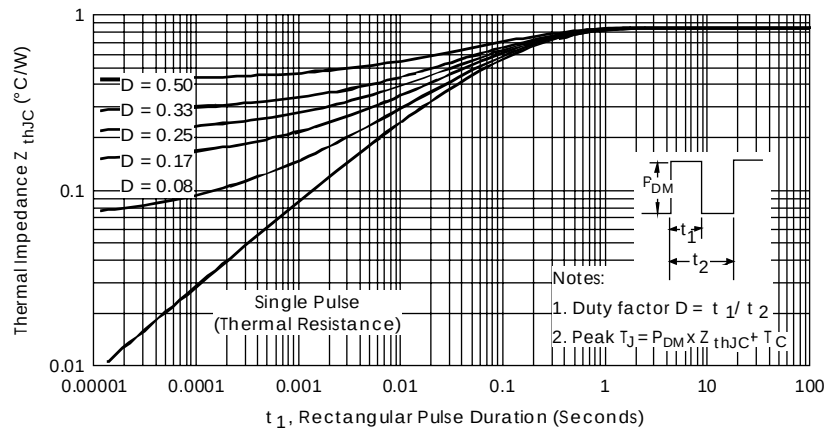


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

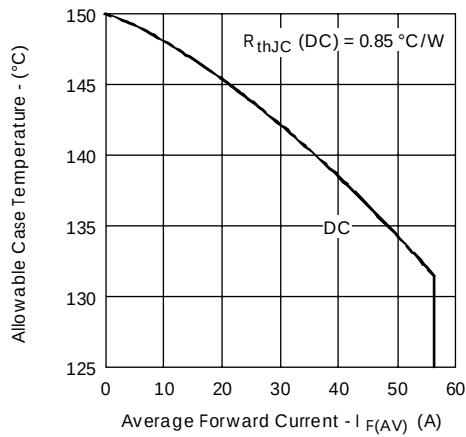


Fig. 5- Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

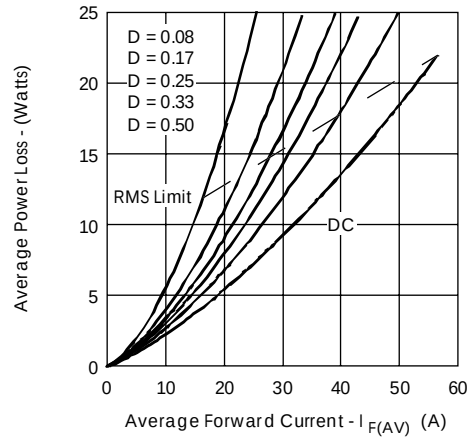


Fig. 6- Forward Power Loss Characteristics (Per Leg)

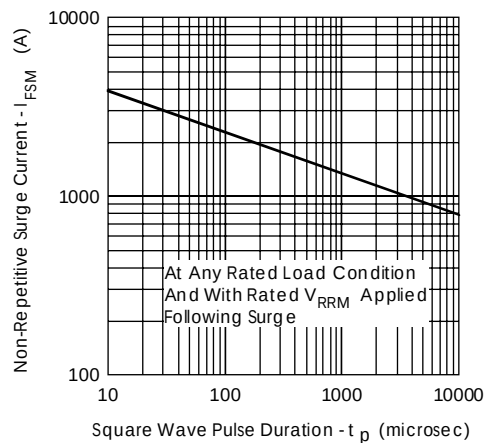


Fig. 7- Max. Non-Repetitive Surge Current (Per Leg)

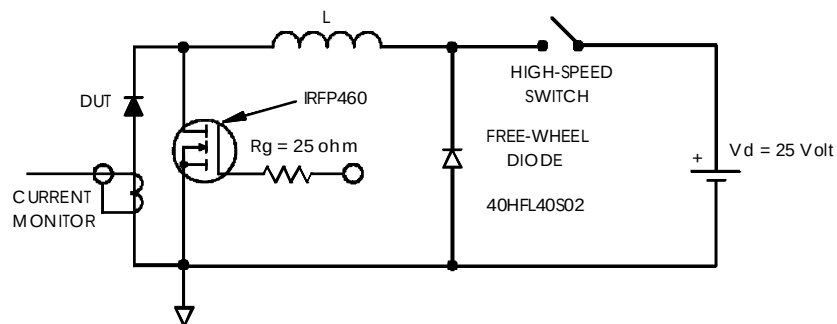
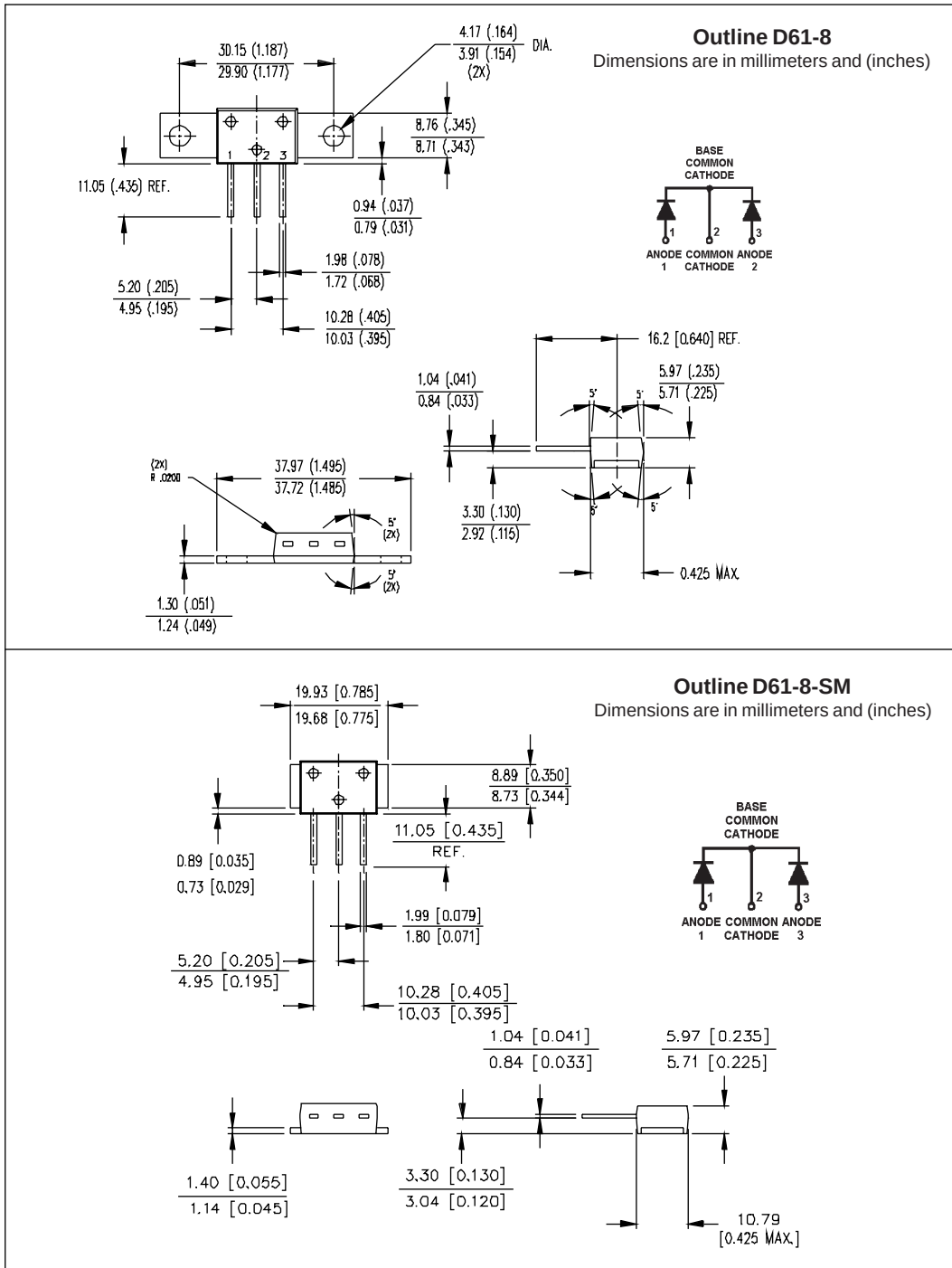
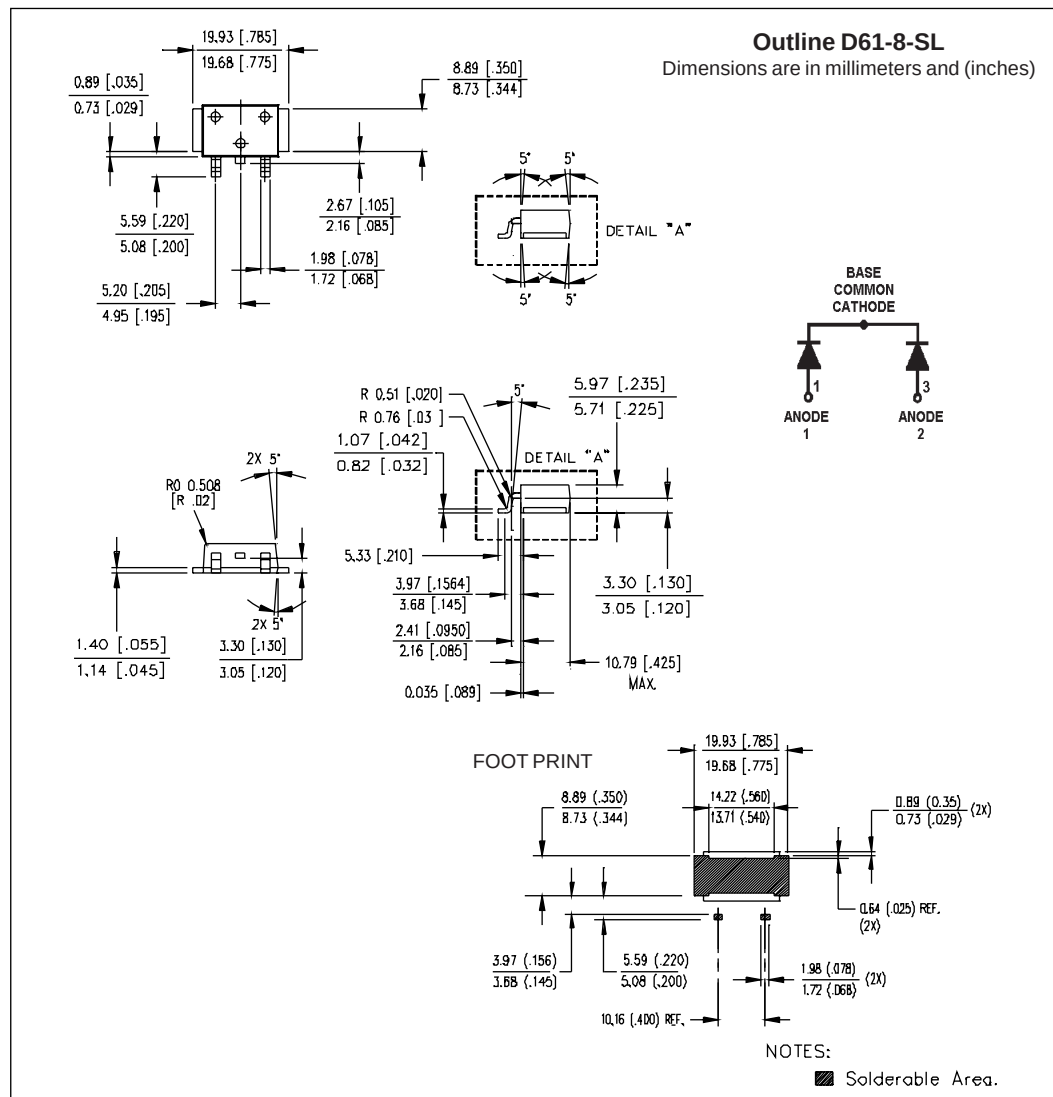


Fig. 8- Unclamped Inductive Test Circuit

Outline Table



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