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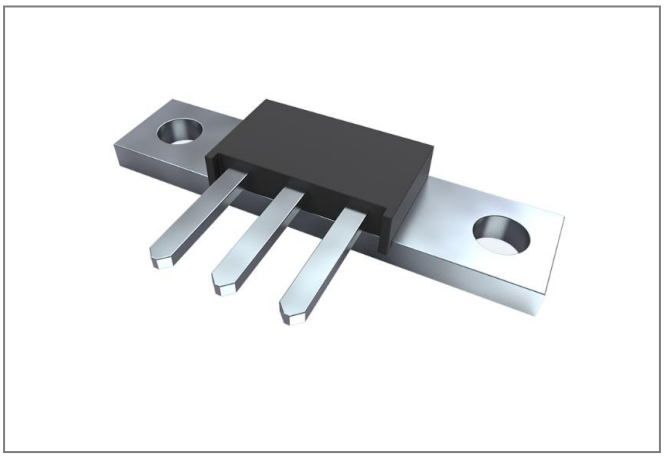
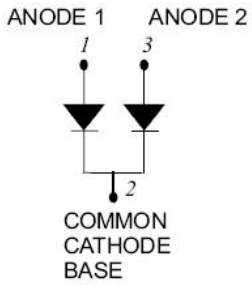
81CNQ045S2 SCHOTTKY RECTIFIER



Features

- 175℃ 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, high current package
- This is a Pb − Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request

Circuit Diagram



Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Maximum Ratings(limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	45	V
Average Rectified Forward Current	$I_{F\ (AV)}$	50% duty cycle @T_C =141°C, rectangular wave form	40(Per Leg) 80(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per leg)	I_{FSM}	8.3 ms, half Sine pulse	950	A
Non-Repetitive Avalanche Energy (Peg leg)	E_{AS}	T_J=25℃,I_{AS}=8A,L=1.7mH	54	mJ
Repetitive Avalanche Current(Peg leg)	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. V_A=1.5×V_R typical	8	A

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Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per leg) *	V_{F1}	@ 40A, Pulse, T_J = 25 °C	0.59	0.68	V
	V_{F2}	@ 40A, Pulse, T_J = 125 °C	0.53	0.60	V
Reverse Current (Per leg) *	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.02	5	mA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	5	45	mA
Junction Capacitance (Per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	2160	2600	pF

* Pulse width < 300 µs, duty cycle < 2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +175	°C
Storage Temperature	T_{stg}	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.5	°C/W
Typical Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.25	°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.21	°C/W
Mounting Torque	TM	-	40(min) 58(max)	Kg-cm
Approximate Weight	wt	-	8.6	g
Case Style	PRM2			

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Ratings and Characteristics Curves

Figure1
Typical Forward Characteristics

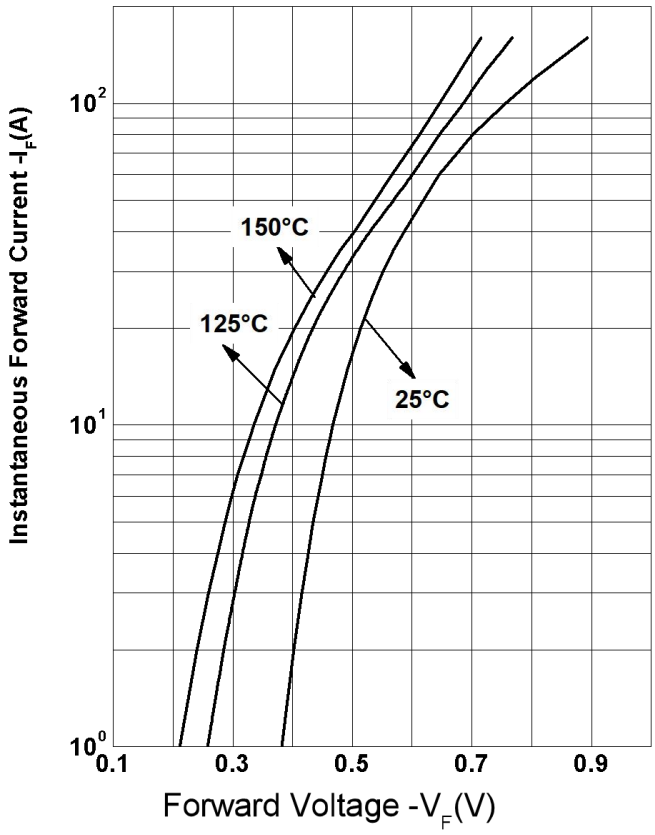


Figure 2
Typical Reverse Characteristics

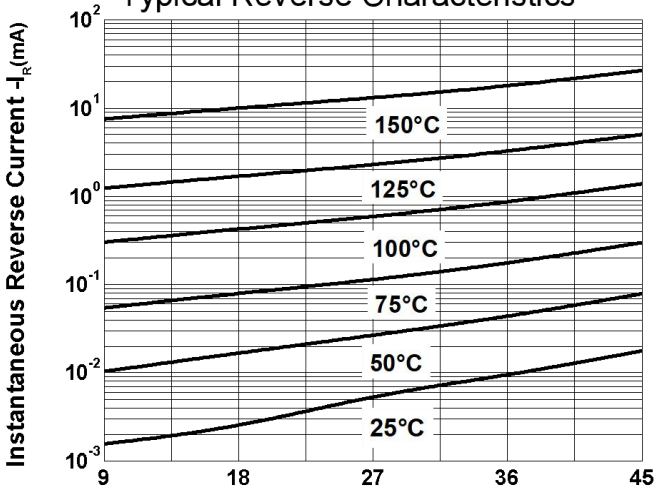
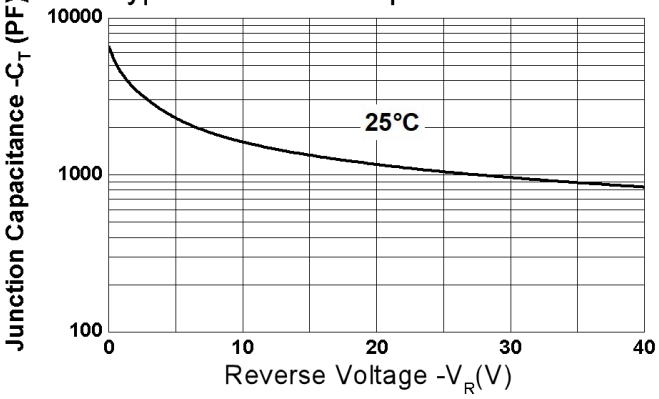
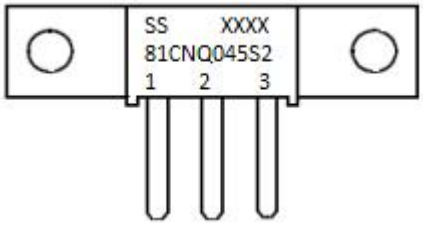


Figure 3
Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

1st row SS YYWWL
2nd row 81CNQ045S2
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

Cautions: Molding resin
Epoxy resin UL:94V-0

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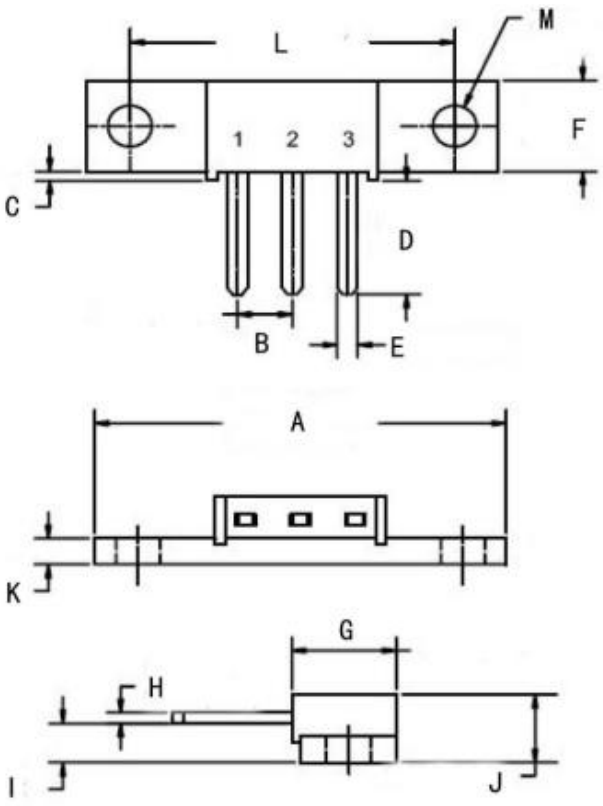
Ordering Information

Device	Package	Terminals finish	Baseplate finish	Shipping
81CNQ045S2	PRM2	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box

Mechanical Dimensions PRM2 (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	37.72	38.23	1.485	1.506
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	1.78	2.28	0.070	0.090
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.75	1.15	0.029	0.046
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.40	2.60	0.094	0.103
L	29.51	30.40	1.161	1.197
M	3.75	4.33	0.147	0.171

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