Technical Data
Data Sheet N1241, Rev E

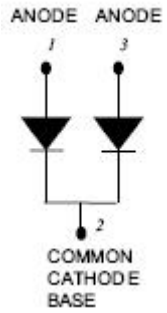
644CNQ045 SCHOTTKY RECTIFIER

PRM4 (Non-Isolated)

Features

- 125℃ T_J operation
- 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
- Baseplate: Nickel plated; Terminals: Nickel plated
- This is a Pb − Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Applications

- High current switching power supply
- Plating power supply
- Free-Wheeling diodes
- Reverse battery protection
- Converters
- UPS System
- Welding

Maximum Ratings:

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 =80°C, rectangular wave form	300(Per Leg) 600(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I_{FSM}	8.3 ms, half Sine pulse	4560	A
Non-Repetitive Avalanche Energy(Peg Leg)	E_{AS}	T_J=25℃,I_{AS}=40A,L=0.34mH	270	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	40	A

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Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V_{F1}	@ 300A, Pulse, T_J = 25 °C	0.53	0.55	V
	V_{F2}	@ 300A, Pulse, T_J = 125 °C	-	0.43	V
Reverse Current(Per Leg)*	I_{R1}	@V_R = rated V_R, T_J = 25 °C	1	21	mA
	I_{R2}	@V_R = rated V_R, T_J = 125 °C	-	3	A
Junction Capacitance(Per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	9000	15000	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs
Insulation Voltage	V_{RMS}	-	-	1000	V

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	T_J	-	-55 to +125		°C
Storage Temperature	T_{stg}	-	-55 to +125		°C
Typical Thermal Resistance Junction to Case(Per leg)	$R_{\theta JC}$	DC operation	0.20		°C/W
Typical Thermal Resistance Junction to Case(Per package)	$R_{\theta JC}$	DC operation	0.10		°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10		°C/W
Mounting Torque	T_M	-	Mounting Torque	24(min) 35(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	79		g
Case Style	PRM4 Non-Isolated				

Ratings and Characteristics Curves

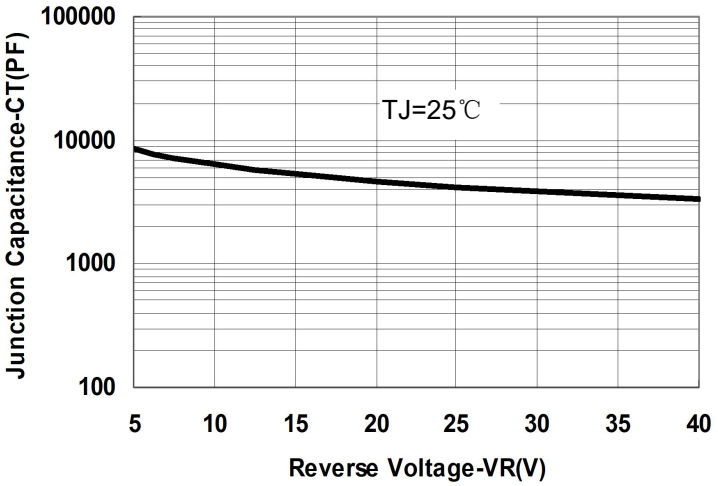

Fig.1-Typical Junction Capacitance

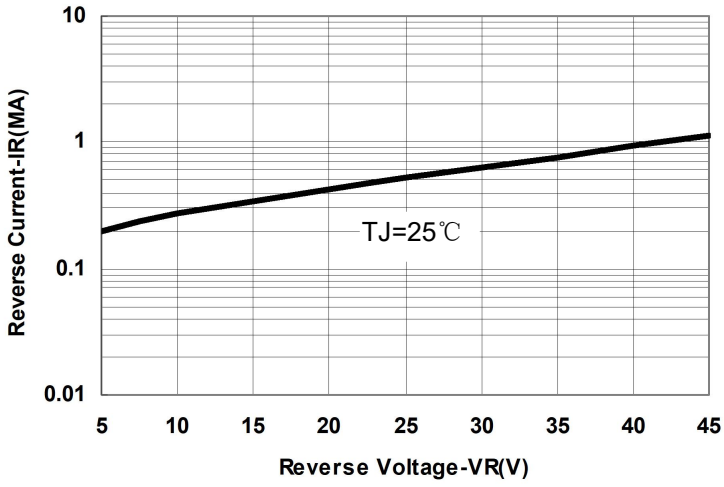

Fig.2-Typical Reverse Characteristics

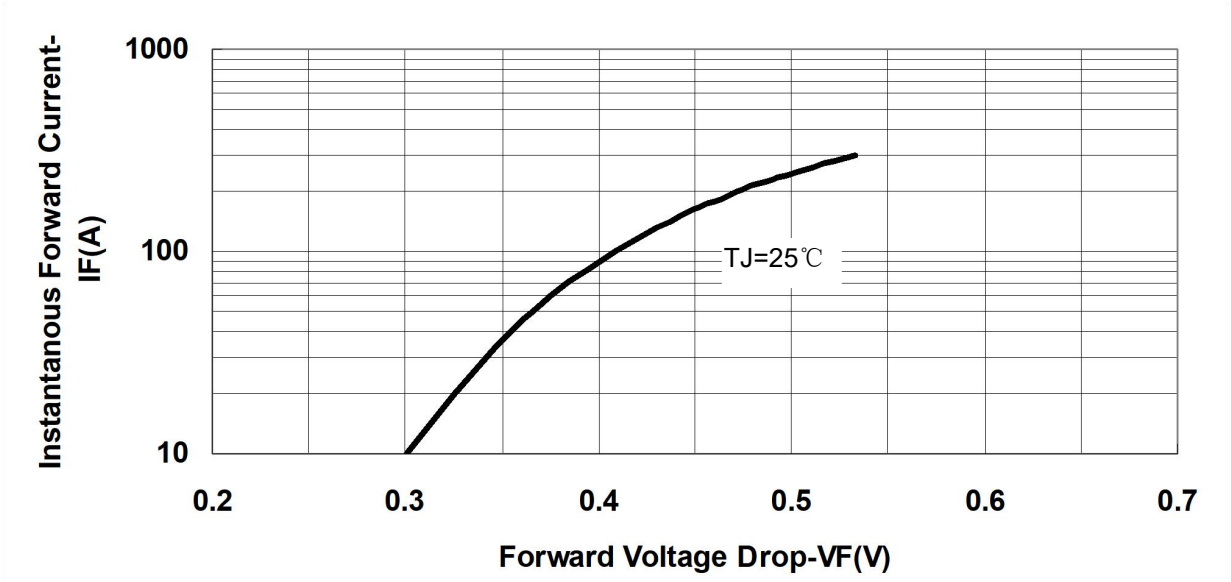

Fig.3-Typical Instantaneous Forward Voltage Characteristics

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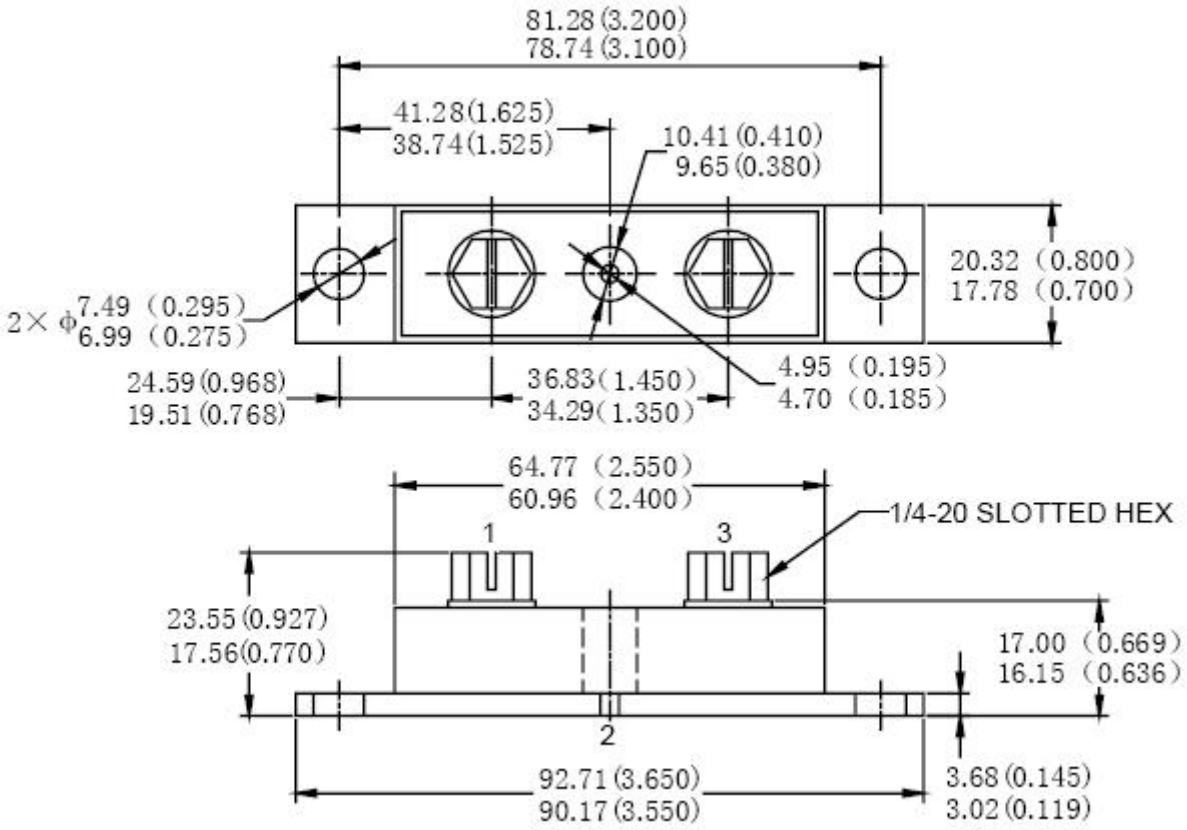
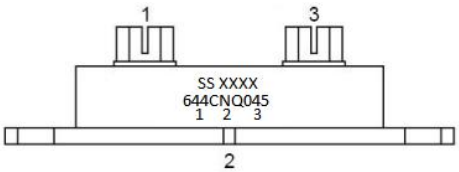
RoHS

Mechanical Dimensions PRM4 Non-Isolated(Millimeters/Inches)



Please Note: Suffix “R” Denotes For Reversed Polarity

Marking Diagram



Where XXXX is YYWW

644CNQ045 = Part name
SS = SS
YY = Year
WW = Week

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

Ordering Information

Device	Package	Shipping
644CNQ045	PRM4(Non- Isolated) (Pb-Free)	9 pcs/box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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