

644CNQ045 SCHOTTKY RECTIFIER

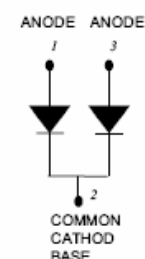
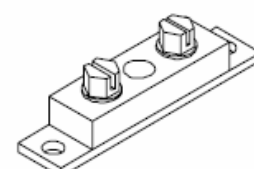
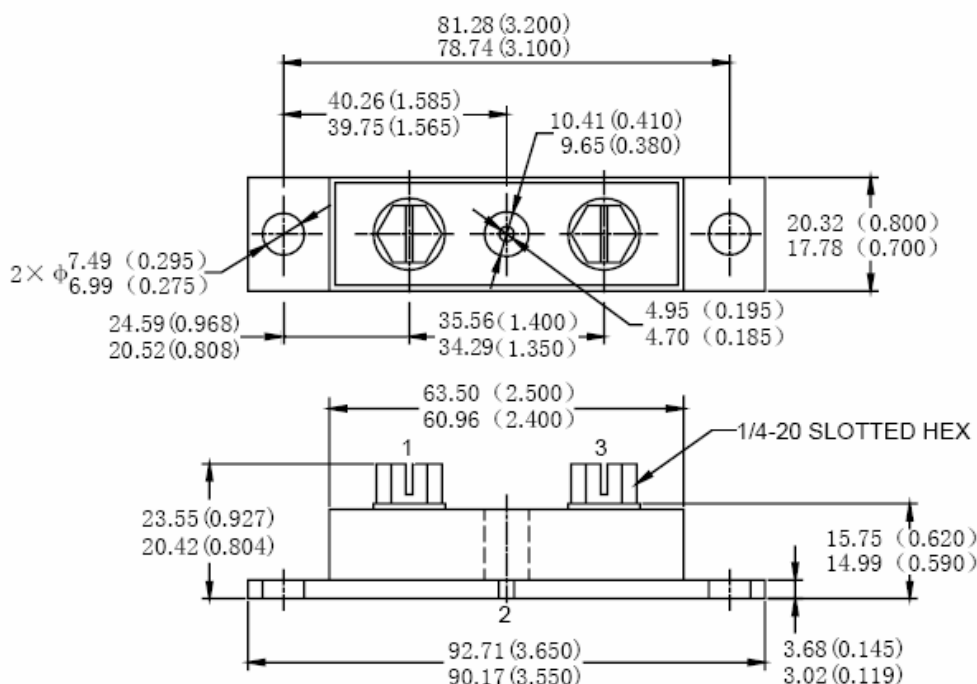
Applications:

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

Features:

- 125 °C 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
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Mechanical Dimensions: In mm/ Inches



PRM4 (Non-Isolated)

MARKING, MOLDING RESIN

Marking for 644CNQ045, 1st row SS YYWW, 2nd row 644CNQ045
 Where YY is the manufacture year
 WW is the manufacture week code
 Molding resin
 Epoxy resin UL:94V-0

Technical Data
Data Sheet N1241, Rev. D
Green Products
Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units	
Peak Inverse Voltage	V_{RWM}	-	45	V	
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=80^{\circ}C$, rectangular wave form	300	per leg	A
			600	per device	
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	4560	A	
Non-Repetitive Avalanche Energy(per leg)	E_{AS}	$T_J=25^{\circ}C, I_{AS}=40A, L=0.34mH$	270	mJ	
Repetitive Avalanche Current(per leg)	I_{AR}	Current decaying linearly to zero in 1 μ sec Frequency limited by T_J max. $V_A=1.5 \times V_R$ typical	40	A	

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop (per leg) *	V_{F1}	@ 300A, Pulse, $T_J = 25^{\circ}C$	0.55	V
	V_{F2}	@ 300A, Pulse, $T_J = 125^{\circ}C$	0.43	V
Reverse Current (per leg) *	I_{R1}	@ $V_R =$ rated V_R $T_J = 25^{\circ}C$	21	mA
	I_{R2}	@ $V_R =$ rated V_R $T_J = 125^{\circ}C$	3	A
Junction Capacitance (per leg)	C_T	@ $V_R = 5V, T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	15000	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	5.0	nH
Voltage Rate of Change	dv/dt	-	10,000	V/ μ s
Insulation Voltage	V_{RMS}	-	1000	V

* Pulse Width < 300 μ s, Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units	
Junction Temperature	T_J	-	-55 to +125	$^{\circ}C$	
Storage Temperature	T_{stg}	-	-55 to +125	$^{\circ}C$	
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.20	$^{\circ}C/W$	
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.10	$^{\circ}C/W$	
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10	$^{\circ}C/W$	
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				

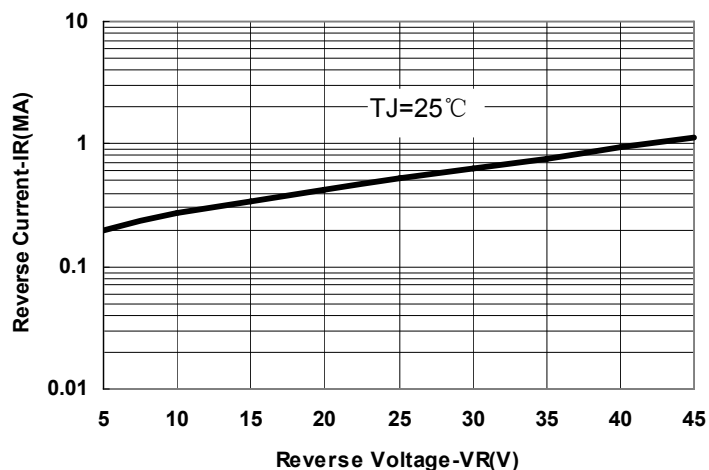


Fig.1-Typical Junction Capacitance

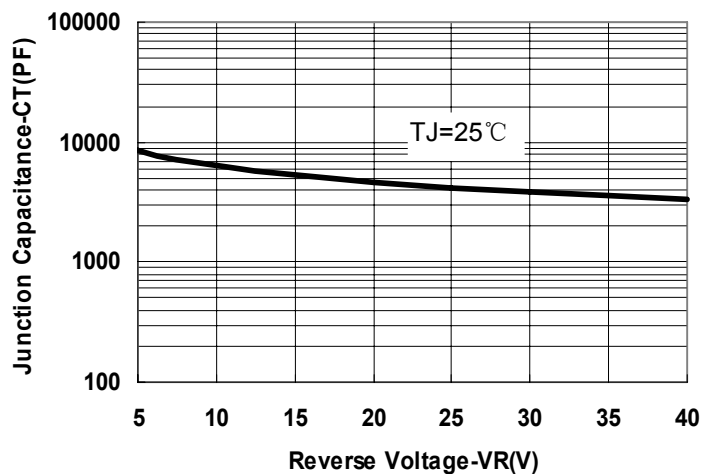


Fig.2-Typical Reverse Characteristics

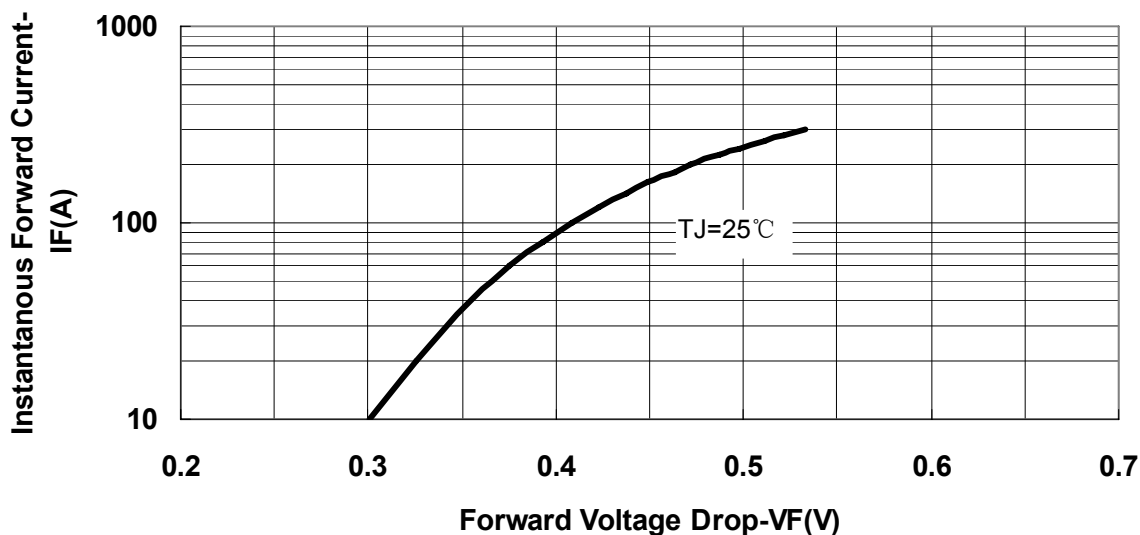


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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