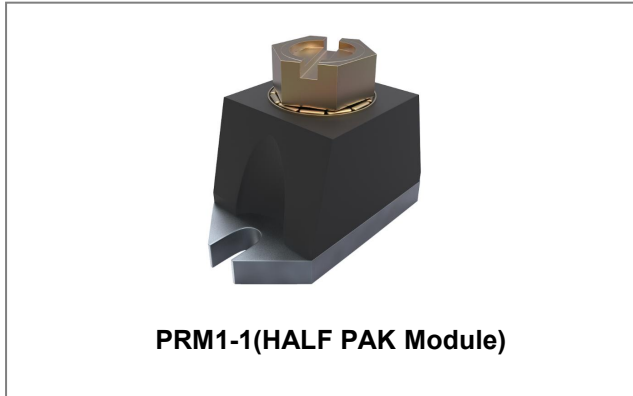


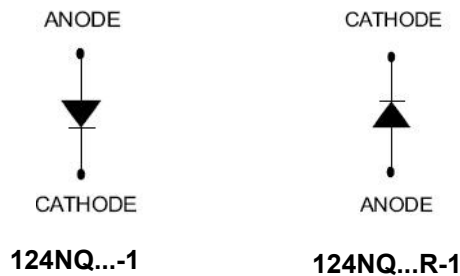
124NQ035/R-1 124NQ040/R-1 124NQ045/R-1 SCHOTTKY RECTIFIER



Features

- 125°C T_J operation
- Unique high power, Half-Pak 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
- Base plate: 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

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

The top side is terminal, the bottom side is base plate.

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

Characteristics	Symbol	Condition	Max.	Units	
Peak Repetitive Reverse Voltage	V _{RRM}	-	35	124NQ035(R)-1	V
Working Peak Reverse Voltage	V _{RWM}		40	124NQ040(R)-1	
DC Blocking Voltage	V _R		45	124NQ045(R)-1	
Average Forward Current	I _{F(AV)}	50% duty cycle @T _C =76°C, rectangular wave form	120		A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	2880		A
Non-Repetitive Avalanche Energy	E _{AS}	T _J =25°C, I _{AS} =20A, L=0.67mH	135		mJ
Repetitive Avalanche Current	I _{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T _J max. V _A =1.5×V _R typical	20		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 120A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.49	0.54	V
		@ 240A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.56	0.71	
	V_{F2}	@ 120A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.42	0.52	V
		@ 240A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.49	0.71	
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25\text{ }^\circ\text{C}$	1.7	10	mA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125\text{ }^\circ\text{C}$	122	1200	mA
Junction Capacitance	C_T	@ $V_R = 5\text{V}, T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	4290	5200	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/ μs

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	T_J	-	-55 to +125		$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +125		$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.25		$^\circ\text{C/W}$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.07		$^\circ\text{C/W}$
Mounting Torque	T_M	Non-lubricated threads	Mounting Torque	23(min) 29(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	36		g
Case Style	PRM1-1				

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

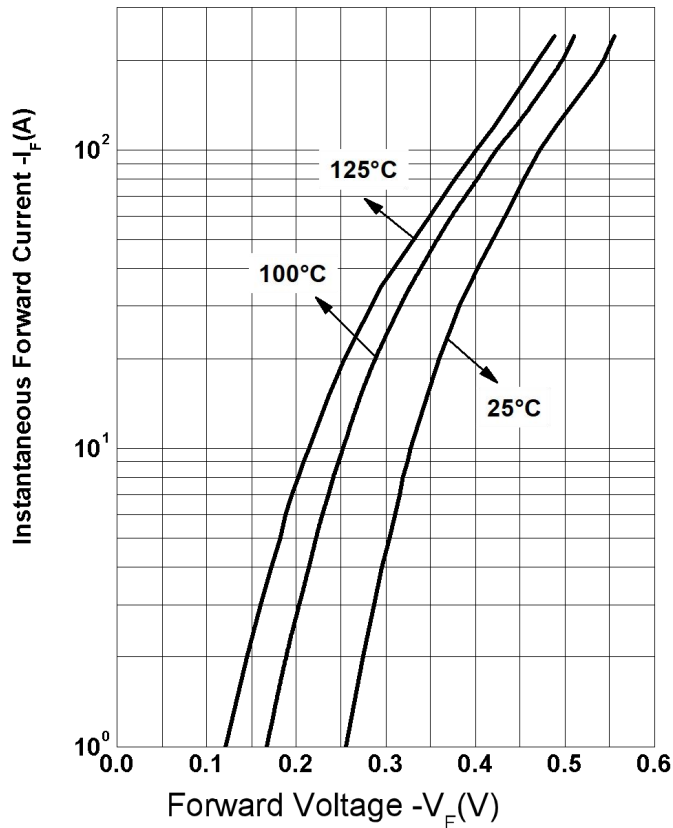


Figure 2
Typical Reverse Characteristics

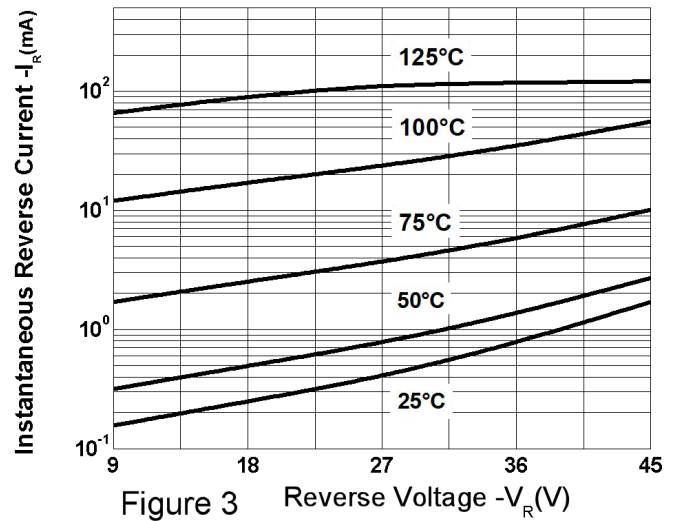
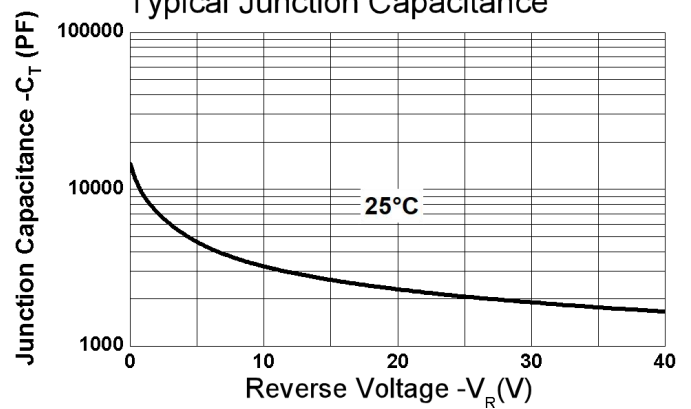


Figure 3
Typical Junction Capacitance



Ordering Information

Device	Package	Shipping
124NQ SERIES	PRM1-1(Pb-Free)	27pcs/ box

Marking Diagram

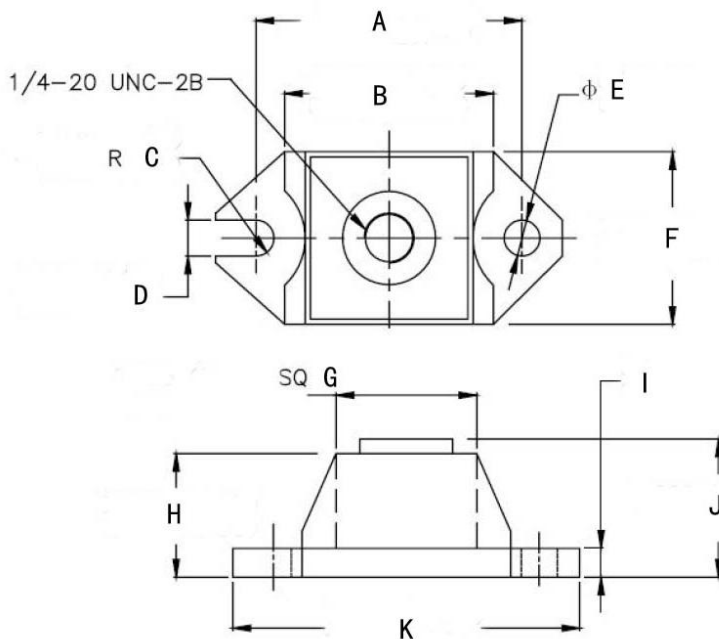


Where XXXX is YYWW

1st row SS YYWW
2nd row 124NQ035-1
SS = SS
YY = Year
WW = Week

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

Mechanical Dimensions PRM1-1 (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	29.35	30.95	1.155	1.219
B	24.77	26.04	0.975	1.026
C	1.79	2.19	0.070	0.087
D	3.73	4.24	0.146	0.167
E	3.73	4.24	0.146	0.167
F	18.42	19.69	0.725	0.775
G	18.55	19.55	0.730	0.770
H	13.59	14.47	0.535	0.570
I	3.05	3.90	0.120	0.154
J	14.87	15.87	0.585	0.625
K	38.61	39.62	1.520	1.560

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