



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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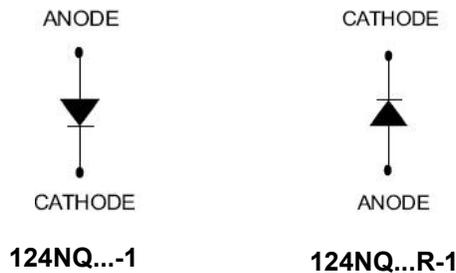
## 124NQ035/R-1 124NQ040/R-1 124NQ045/R-1 SCHOTTKY RECTIFIER



### Features

- 125°C T<sub>J</sub> 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
- 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

### Maximum Ratings:

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

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 120A, Pulse, $T_J = 25\text{ }^\circ\text{C}$ @ 240A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.49 -	0.54 0.71	V
	$V_{F2}$	@ 120A, Pulse, $T_J = 125\text{ }^\circ\text{C}$ @ 240A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.43 -	0.52 0.71	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25\text{ }^\circ\text{C}$	4	10	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125\text{ }^\circ\text{C}$	1000	1200	mA
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}, T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	4300	5200	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/ $\mu\text{s}$

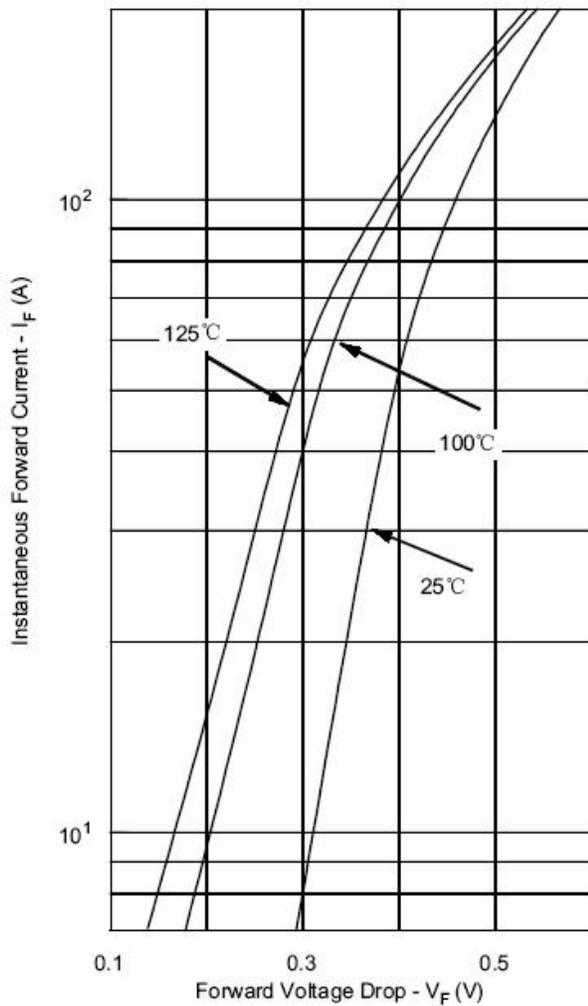
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

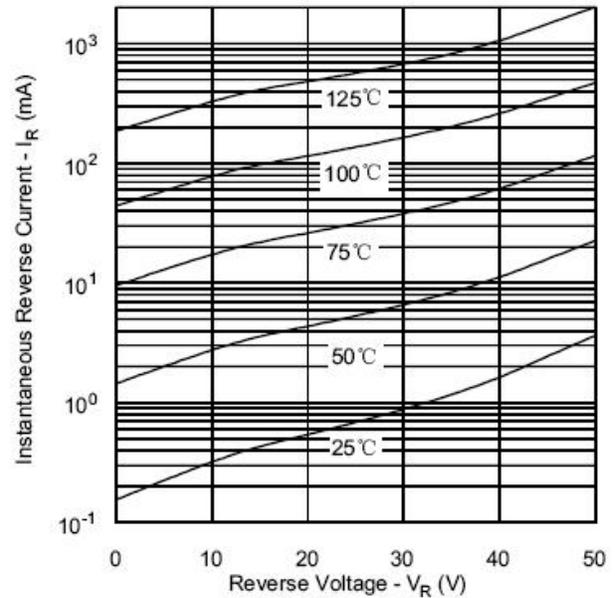
Characteristics	Symbol	Condition	Specification	Units	
Junction Temperature	$T_J$	-	-55 to +125	$^\circ\text{C}$	
Storage Temperature	$T_{stg}$	-	-55 to +125	$^\circ\text{C}$	
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.40	$^\circ\text{C/W}$	
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.15	$^\circ\text{C/W}$	
Mounting Torque	$T_M$	Non-lubricated threads	Mounting Torque	23(min) 29(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	25.6	g	
Case Style	PRM1-1				

**Ratings and Characteristics Curves**

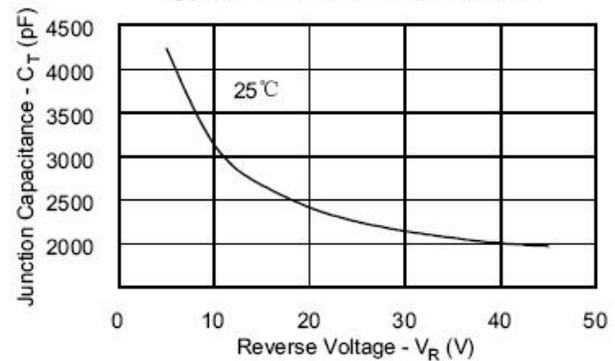
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Ordering Information**

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

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

**Marking Diagram**

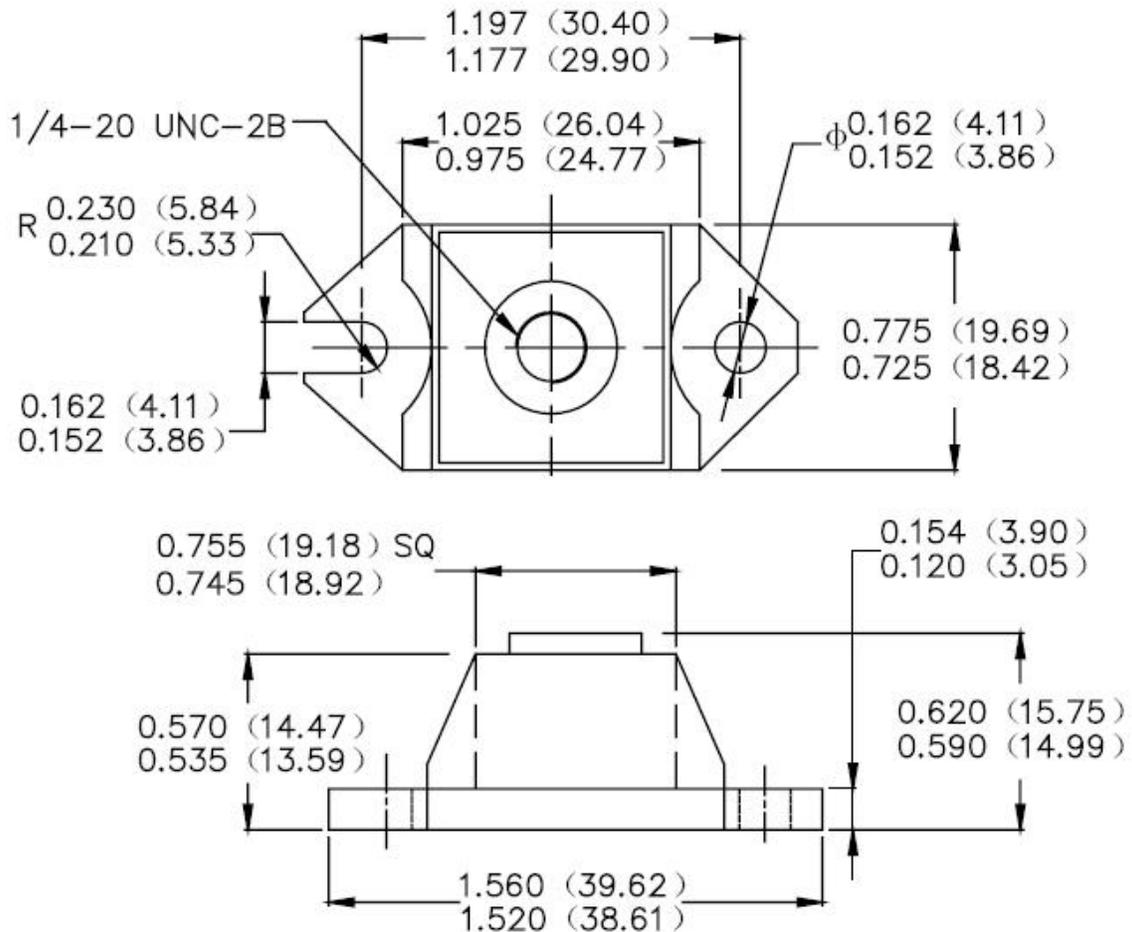


Where XXXX is YYWW

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)**





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