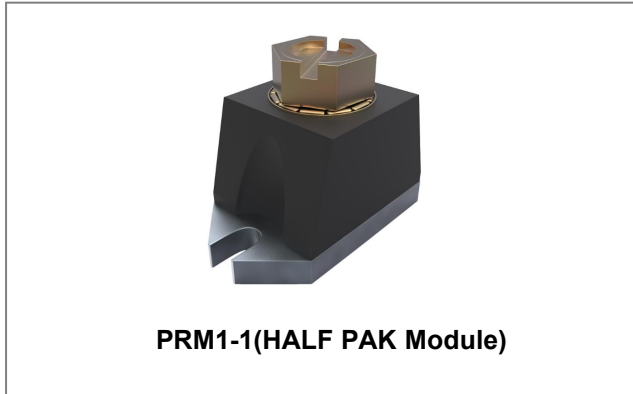


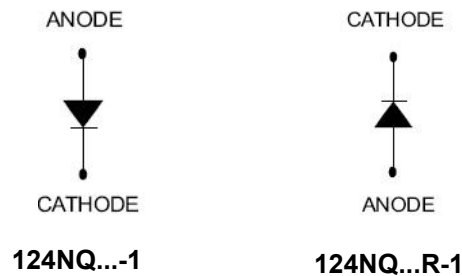
124NQ035/R-1 124NQ040/R-1 124NQ045/R-1 SCHOTTKY RECTIFIER



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
- 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

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

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|---|--------------------|--|------|---------------|
| Peak Repetitive Reverse Voltage | V _{RRM} | - | 35 | 124NQ035(R)-1 |
| 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, $T_J = 25\text{ }^\circ\text{C}$ @ 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/ μs |

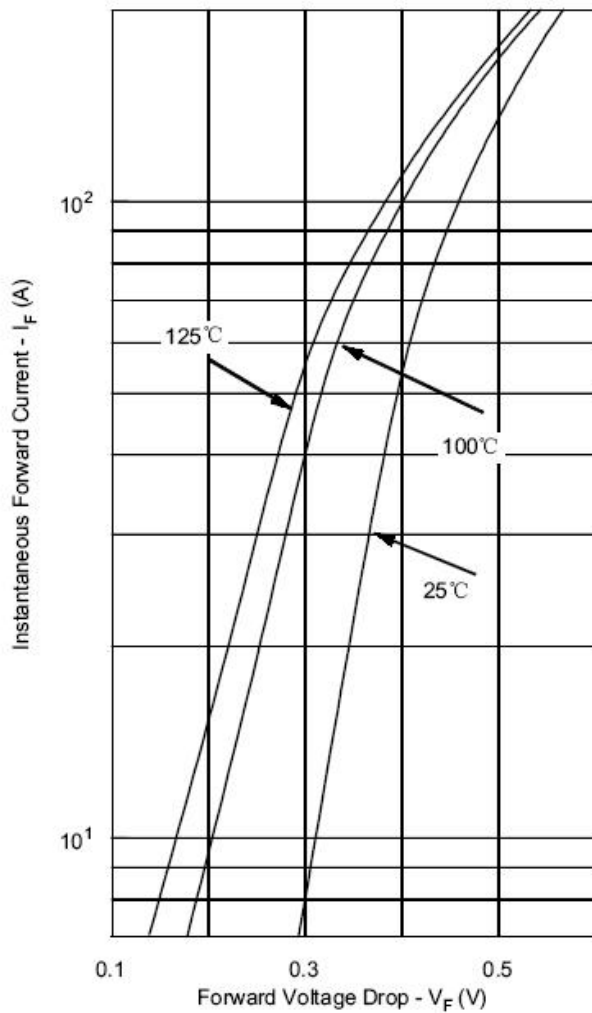
* Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications:

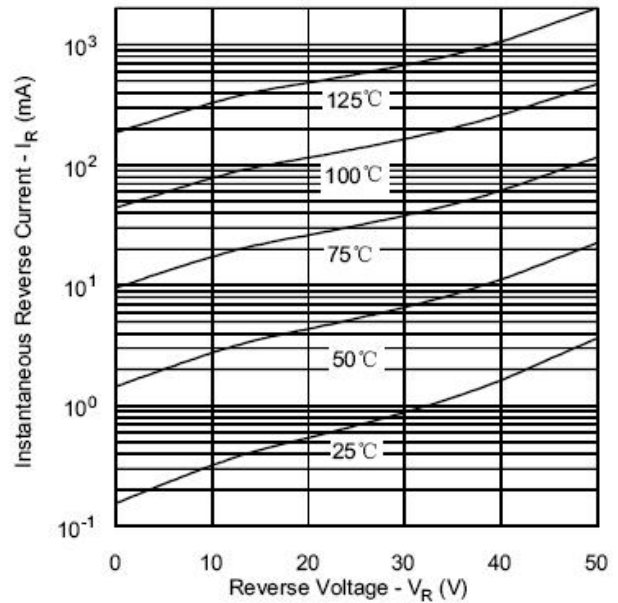
| Characteristics | Symbol | Condition | Specification | | Units |
|--|-----------------|---|--------------------|--------------------|--------------------|
| Junction Temperature | T_J | - | -55 to +125 | | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | - | -55 to +125 | | $^\circ\text{C}$ |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | DC operation | 0.40 | | $^\circ\text{C/W}$ |
| 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

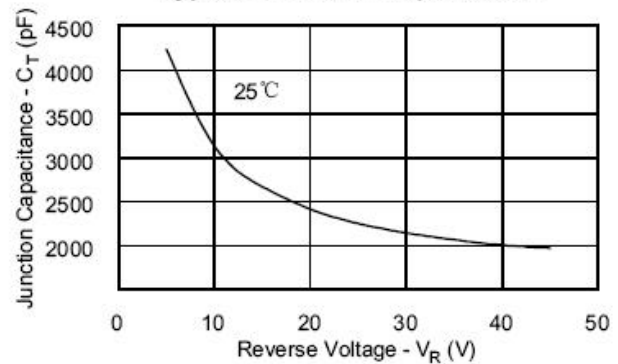
Typical Forward Characteristics



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

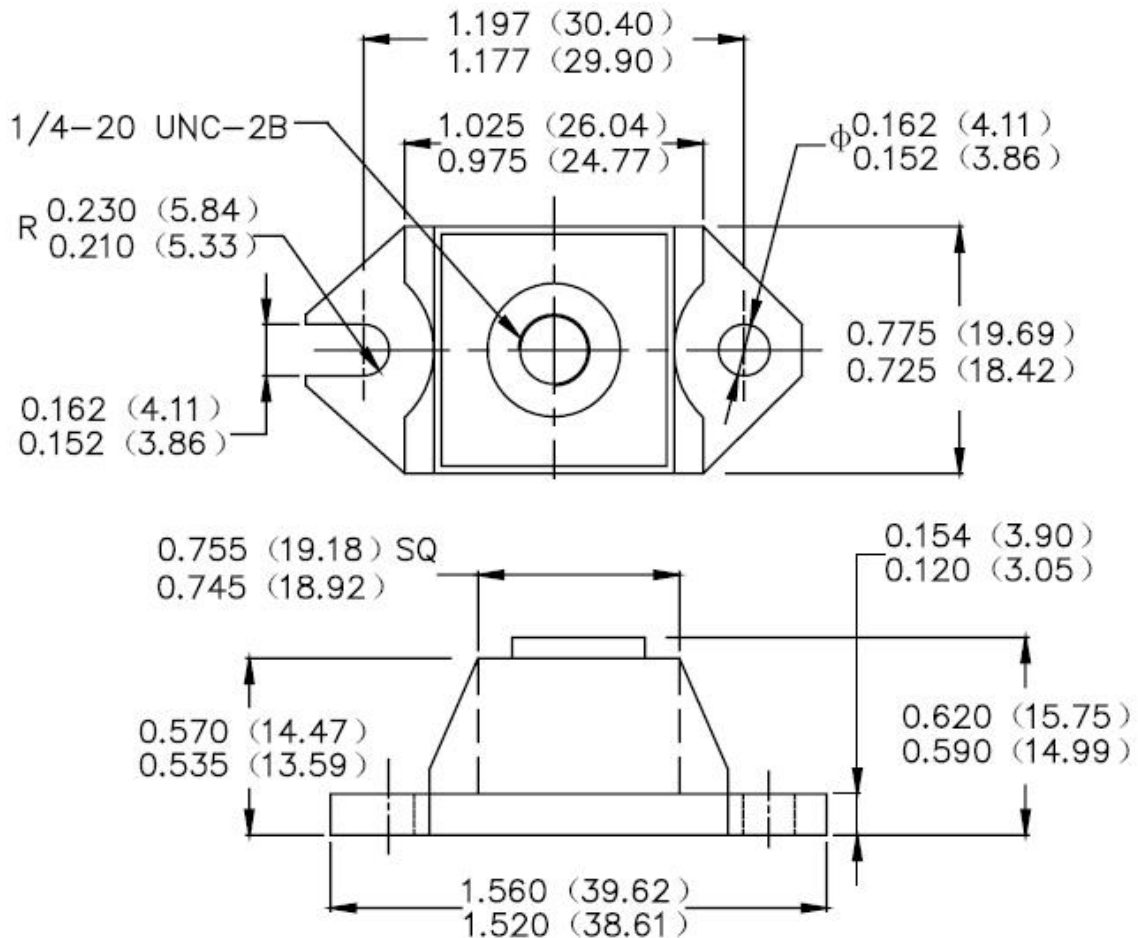


Where XXXX is YYWW

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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