



THE DATASHEET OF 60CNQ040



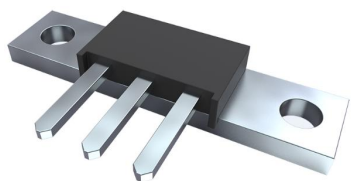
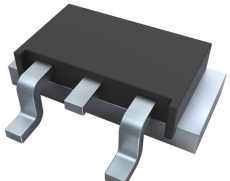
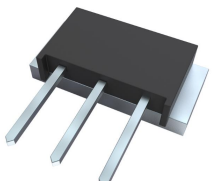
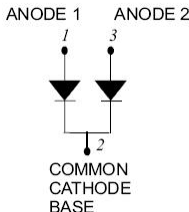
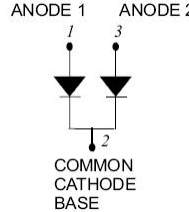
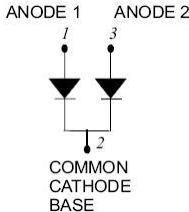
60CNQ SERIES SCHOTTKY RECTIFIER

Applications

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

Features

- 150°C T_J operation
- Center tap module
- Very Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, high current package
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request

60CNQ...	60CNQ...SL	60CNQ...SM
		
		
PRM3	PRM3-SL	PRM3-SM

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

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	35(60CNQ035) 40(60CNQ040) 45(60CNQ045)	V
Average Rectified Forward Current	I _{F (AV)}	50% duty cycle @T _C =116°C, rectangular wave form	30(Per Leg) 60(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per leg)	I _{FSM}	8.3 ms, half Sine pulse	1020	A
Non-Repetitive Avalanche Energy (Per leg)	E _{AS}	T _J =25°C, I _{AS} =6A, L=2.2mH	40	mJ
Repetitive Avalanche Current(Per leg)	I _{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T _J max. V _A =1.5×V _R typical	6	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per leg) *	V _{F1}	@ 30A, Pulse, T _J = 25 °C	0.49	0.55	V
		@ 60A, Pulse, T _J = 25 °C	0.58	0.64	
	V _{F2}	@ 30A, Pulse, T _J = 125 °C	0.42	0.44	V
		@ 60A, Pulse, T _J = 125 °C	0.55	0.59	
Reverse Current (Per leg) *	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.2	5	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	33	200	mA
Junction Capacitance (Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	2166	2600	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 +150	°C
Storage Temperature	T _{stg}	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case (per leg)	R _{θJC}	DC operation	0.5	°C/W
Typical Thermal Resistance Junction to Case (per package)	R _{θJC}	DC operation	0.25	°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth and greased	0.21	°C/W
Mounting Torque	TM	-	40(min)	Kg-cm
			58(max)	
Case Style	PRM3 PRM3-SL PRM3-SM			

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

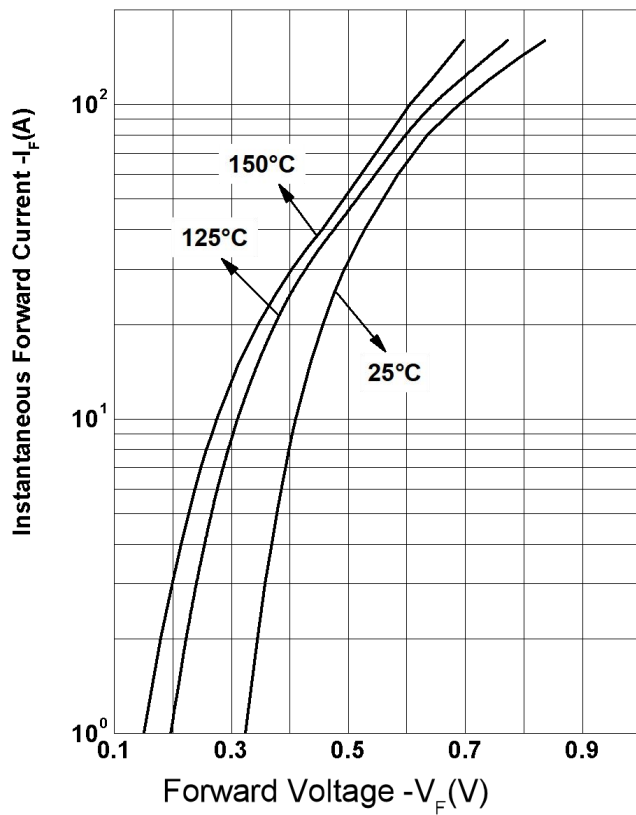


Figure 2
Typical Reverse Characteristics

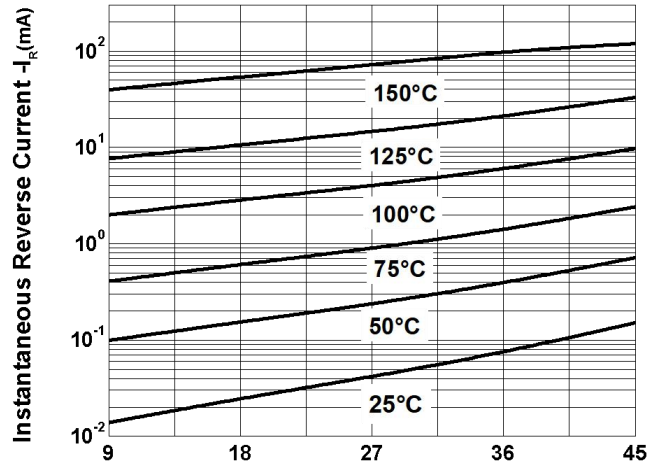
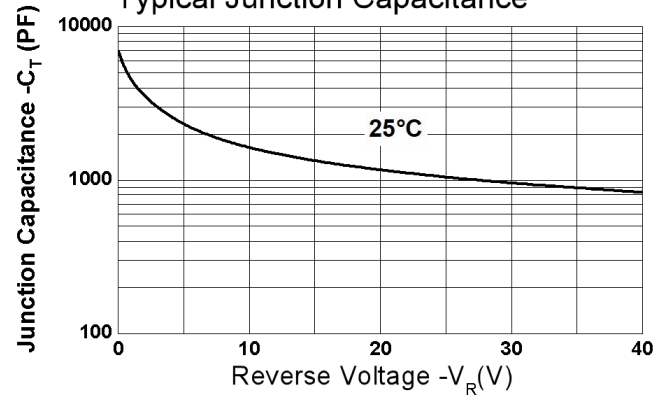
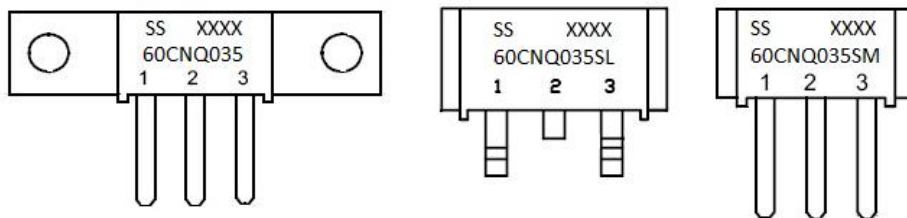


Figure 3
Reverse Voltage $-V_R$ (V)
Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

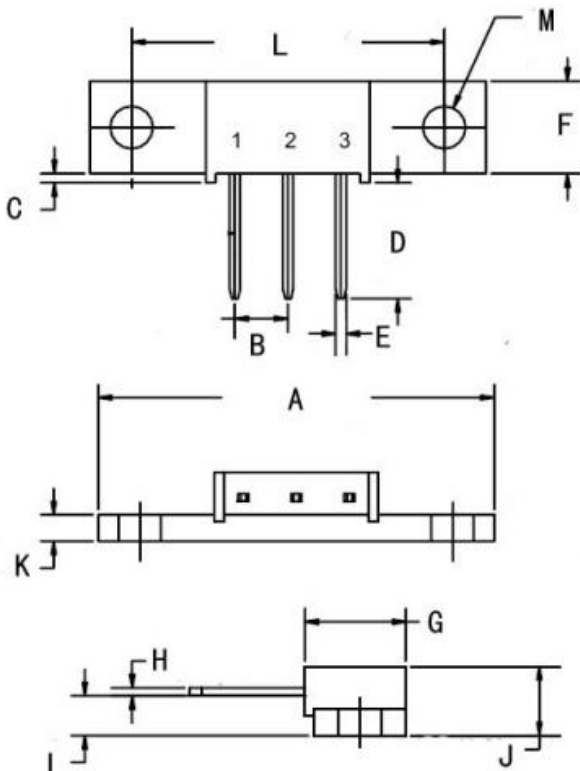
1st row SS YYWWL
2nd row 60CNQ035/SL/SM
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

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

Ordering Information

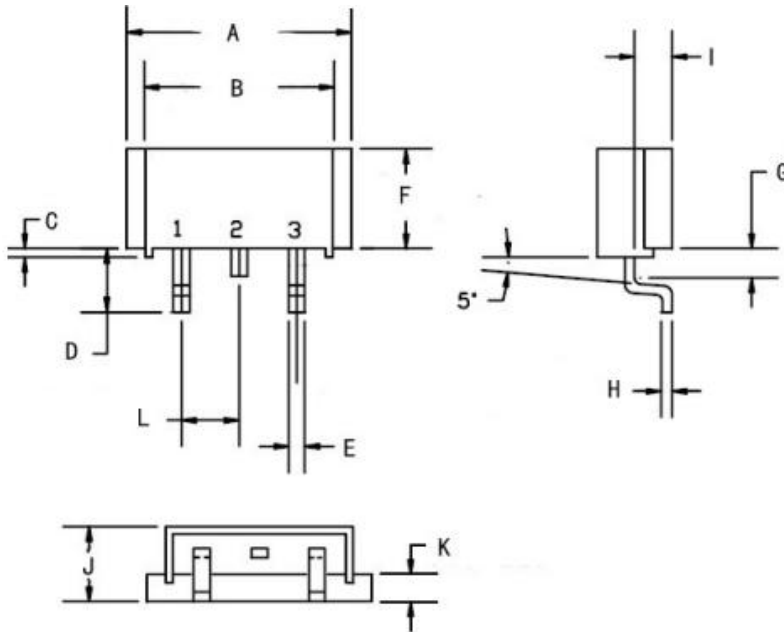
Device	Package	Approximate Weight(g)	Terminals finish	Base plate finish	Shipping
60CNQ035	PRM3	8.6	Nickel plated	Nickel plated	48pcs / box
60CNQ035S2	PRM3	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
60CNQ040	PRM3	8.6	Nickel plated	Nickel plated	48pcs / box
60CNQ040S2	PRM3	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
60CNQ045	PRM3	8.6	Nickel plated	Nickel plated	48pcs / box
60CNQ045S2	PRM3	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
60CNQ035SL	PRM3-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
60CNQ040SL	PRM3-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
60CNQ045SL	PRM3-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
60CNQ035SM	PRM3-SM	5.6	Nickel plated	Nickel plated	48pcs / box
60CNQ035SMS2	PRM3-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
60CNQ040SM	PRM3-SM	5.6	Nickel plated	Nickel plated	48pcs / box
60CNQ040SMS2	PRM3-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
60CNQ045SM	PRM3-SM	5.6	Nickel plated	Nickel plated	48pcs / box
60CNQ045SMS2	PRM3-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box

Mechanical Dimensions PRM3 (Inches/Millimeters)



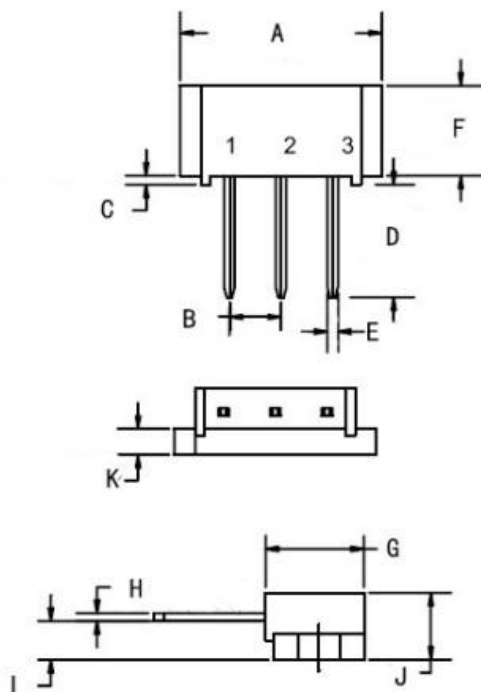
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	37.72	38.23	1.485	1.506
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	0.88	1.22	0.034	0.048
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.61	0.92	0.024	0.037
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.40	2.60	0.094	0.103
L	29.51	30.40	1.161	1.197
M	3.75	4.33	0.147	0.171

Mechanical Dimensions PRM3-SL (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	19.70	20.30	0.776	0.799
B	16.51	17.02	0.650	0.670
C	0.62	1.02	0.024	0.040
D	4.97	5.97	0.196	0.235
E	0.88	1.22	0.034	0.048
F	8.46	9.06	0.333	0.357
G	2.04	2.54	0.080	0.100
H	0.61	0.92	0.024	0.037
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.274	0.297
K	2.21	2.71	0.087	0.106
L	5.08		0.200	

Mechanical Dimensions PRM3-SM (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	19.70	20.30	0.776	0.799
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	0.88	1.22	0.034	0.048
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.61	0.92	0.024	0.037
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.40	2.60	0.094	0.103





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