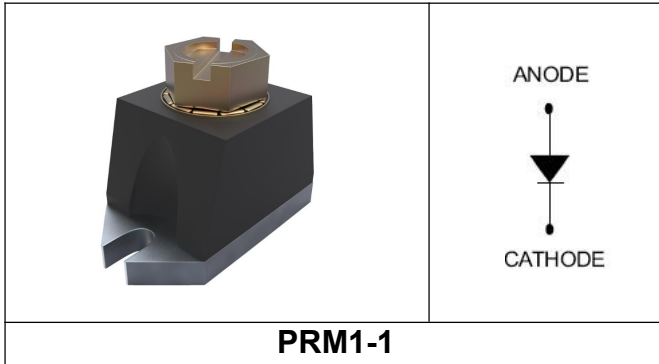


120NQ600-1 Ultrafast Recovery Modules



Features

- Ultra-Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-0
- 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

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	-	600	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=100^{\circ}C$, rectangular wave form	120	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine pulse	1200	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 120A, Pulse, $T_J = 25^{\circ}C$	1.09	1.70	V
Reverse Current *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25^{\circ}C$	0.20	30	μA
Junction Capacitance	C_T	@ $V_R = 5V$, $T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	485	1000	pF
Reverse Recovery Time	t_{rr}	$I_F=0.5A$, $I_R=1A$, and $I_{RR}=0.25A$	110	130	ns
Voltage Rate of Change	dv/dt	-	-	10,000	$V/\mu s$

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units	
Junction Temperature	T_J	-	-55 to +175	°C	
Storage Temperature	T_{stg}	-	-55 to +175	°C	
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.25	°C/W	
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.07	°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

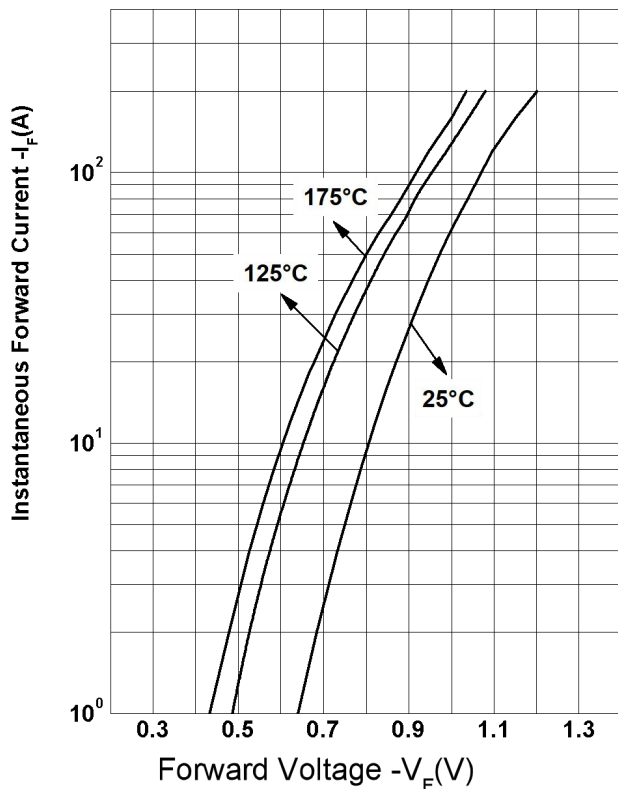


Figure 2
Typical Reverse Characteristics

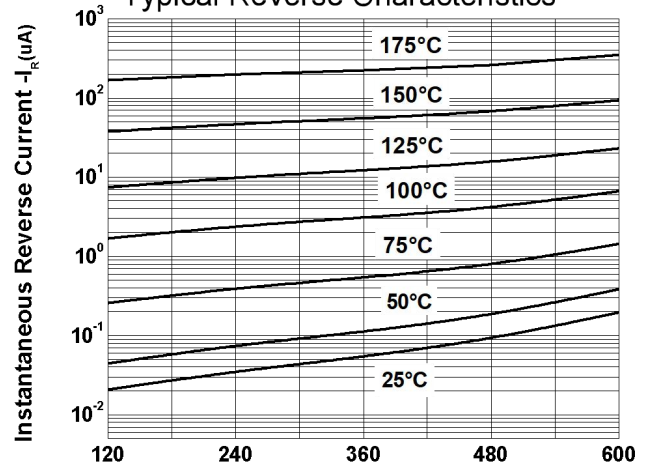
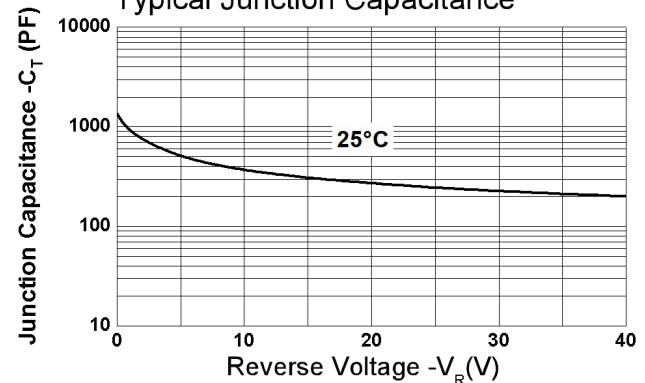


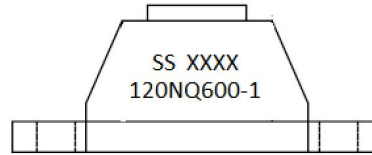
Figure 3
Typical Junction Capacitance



Ordering Information

Device	Package	Shipping
120NQ600-1	PRM1-1(Pb-Free)	27pcs/ box

Marking Diagram

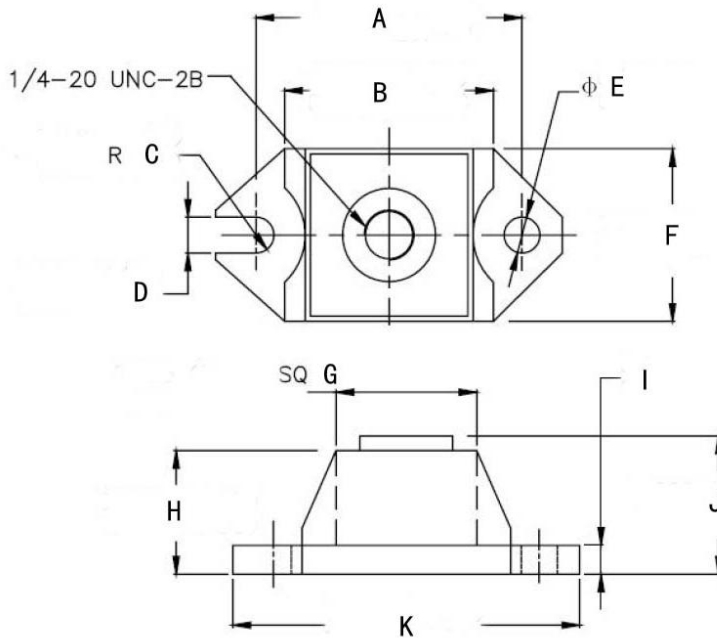


Where XXXX is YYWW

1st row SS YYWW
2nd row 120NQ600-1
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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