

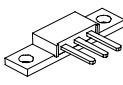
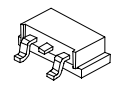
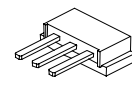
**87CNQ020-G SCHOTTKY RECTIFIER**

**Applications:**

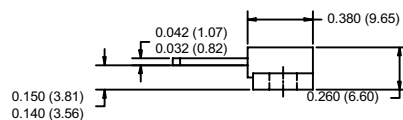
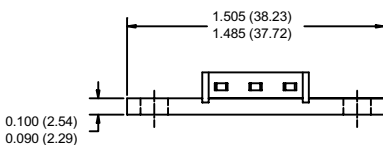
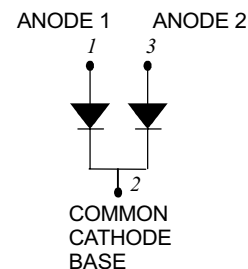
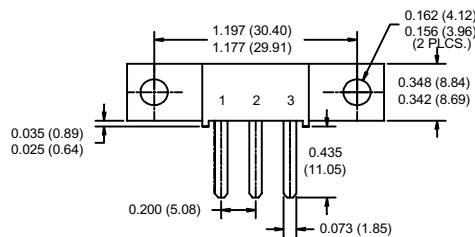
- Parallel switching power supply • Redundant power subsystems • Reverse battery protection
- Converters

**Features:**

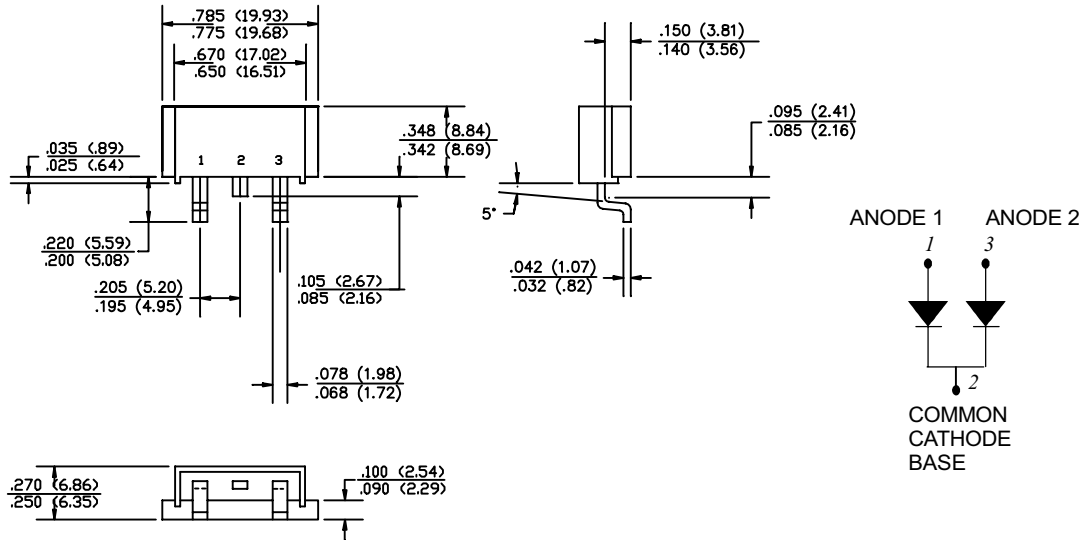
- 150°C T<sub>J</sub> operation
- Center tap module
- Optimized for 3.3V applications
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- New fully transfer-mould low profile, small footprint, high current package
- Green Products in Compliance with the RoHS Directive

Case styles		
<p><b>87CNQ020-G</b></p>  <p><b>PRM2</b></p>	<p><b>87CNQ020SL-G</b></p>  <p><b>PRM2-SL</b></p>	<p><b>87CNQ020SM-G</b></p>  <p><b>PRM2-SM</b></p>

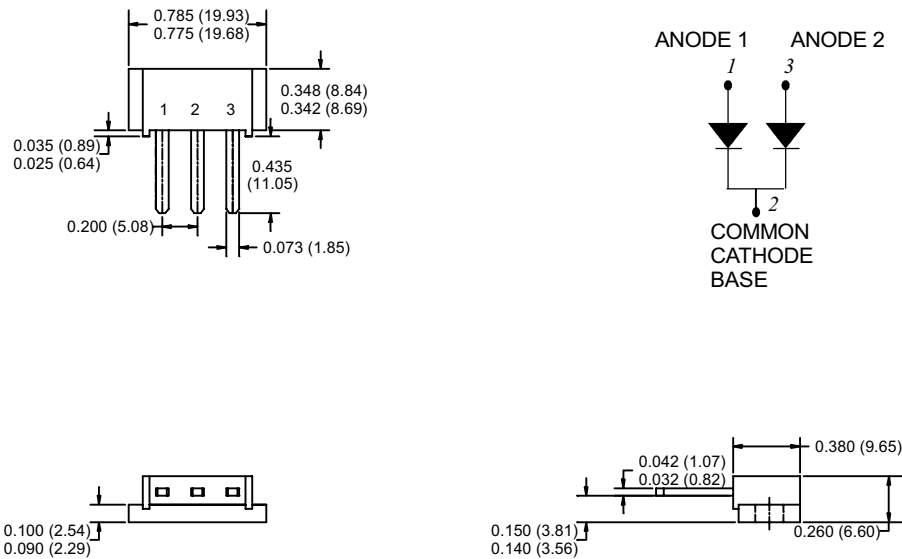
**Mechanical Dimensions: In Inches / mm**



**PRM2**



**PRM2-SL**



**PRM2-SM**

Data Sheet 3772, Rev. -  
Maximum Ratings:

**Green Products**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	20 (DC,@125°C) 10 (DC,@150°C)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 135^\circ\text{C}$ , rectangular wave form	40 (per leg) 80 (per device)	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	1320	A
Non-Repetitive Avalanche Energy (per leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 8\text{A}$ , $L = 1.12\text{ mH}$	36	mJ
Repetitive Avalanche Current (per leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	8	A

**Electrical Characteristics:**

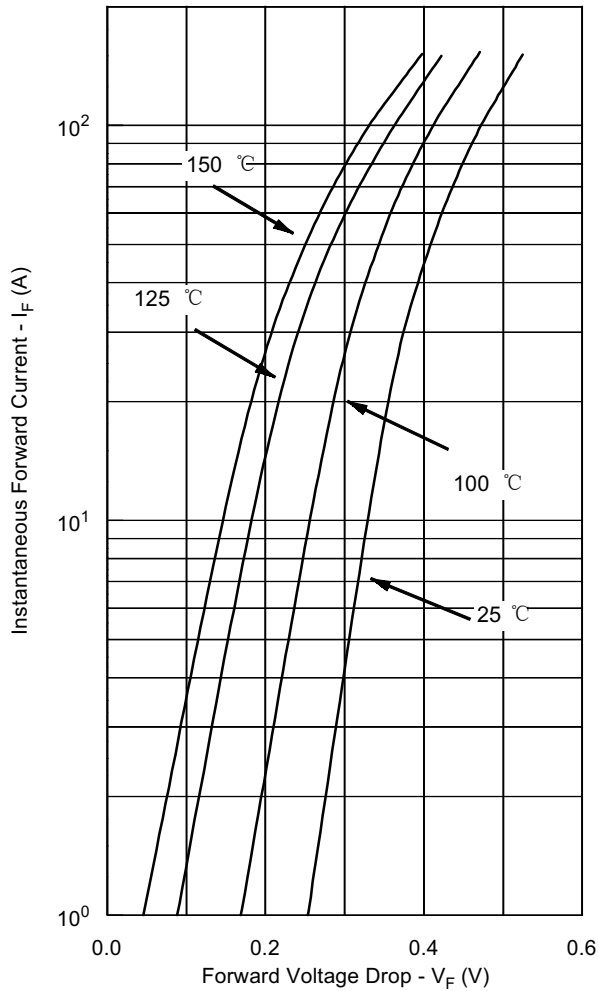
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 40 A, Pulse, $T_J = 25^\circ\text{C}$ @ 80 A, Pulse, $T_J = 25^\circ\text{C}$	0.45 0.51	V
	$V_{F2}$	@ 40 A, Pulse, $T_J = 125^\circ\text{C}$ @ 80 A, Pulse, $T_J = 125^\circ\text{C}$	0.32 0.39	V
	$V_{F3}$	@ 40 A, Pulse, $T_J = 150^\circ\text{C}$ @ 80 A, Pulse, $T_J = 150^\circ\text{C}$	0.29 0.37	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	5.5	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	550	mA
	$I_{R3}$	@ $V_R = 5\text{ V}$ $T_J = 125^\circ\text{C}$	90	mA
	$I_{R4}$	@ $V_R = 3.3\text{ V}$ $T_J = 125^\circ\text{C}$	70	mA
	$I_{R5}$	@ $V_R = 10\text{ V}$ $T_J = 150^\circ\text{C}$	480	mA
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	6500	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	5.5	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu\text{s}$

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

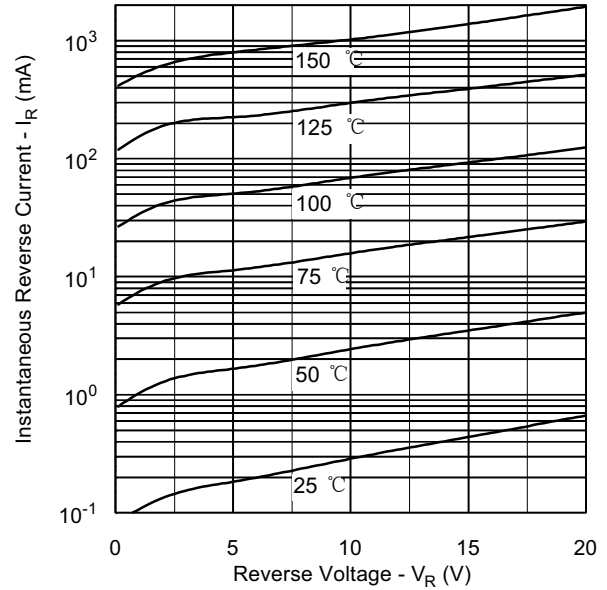
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.42	$^\circ\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink (D61-8 Only)	$R_{\theta CS}$	Mounting surface, smooth and greased Device flatness < 5 mils	0.30	$^\circ\text{C/W}$
Approximate Weight	wt	-	7.8	
Mounting Torque (D61-8 Only)	$T_M$	-	40 (min) 58 (max)	Kg-cm
Case Style	PRM2 PRM2-SL PRM2-SM			

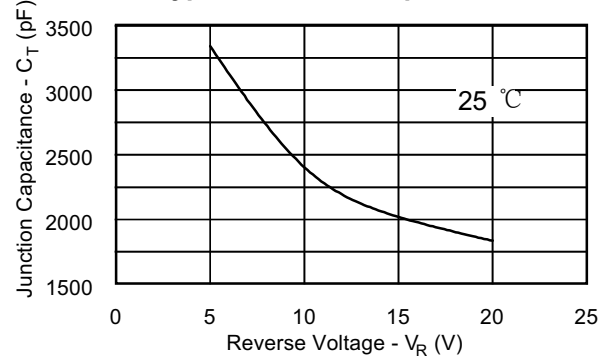
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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