

Technical Data  
Data Sheet 3192, Rev. A

## 303CNQ080/303CNQ100 SCHOTTKY RECTIFIER

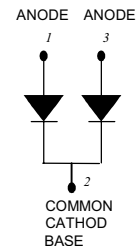
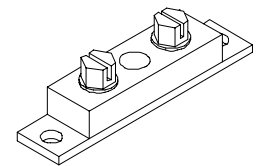
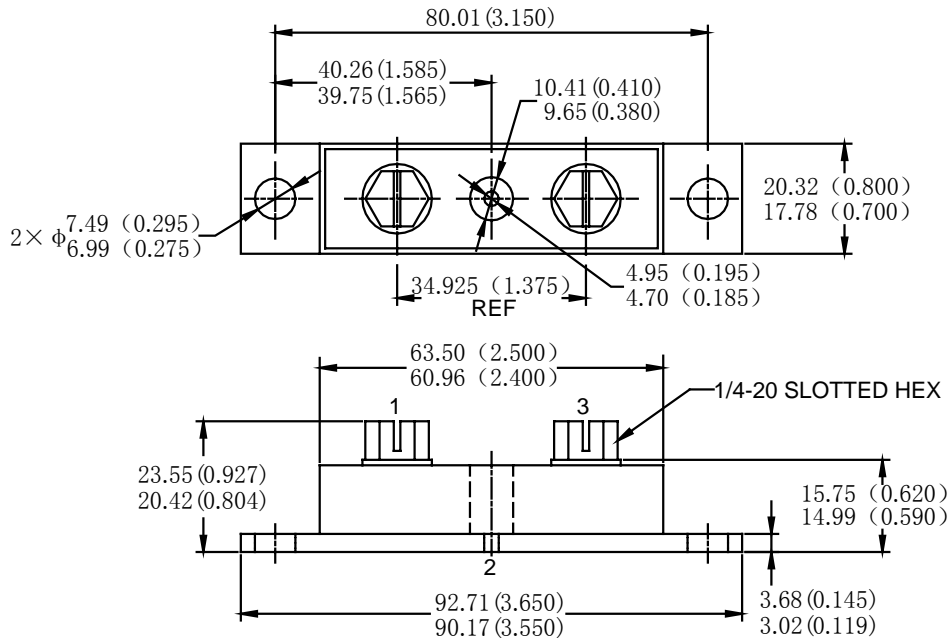
### Applications:

- High current switching power supply
- Plating power supply
- Free-Wheeling diodes
- Reverse battery protection
- Converters
- UPS System
- Welding

### Features:

- 175 °C T<sub>J</sub> operation
- Center tap 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

### Mechanical Dimensions: In Inches / mm



### PRM4(Non-Isolated)

Data Sheet 3192, Rev. A  
Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units	
Peak Inverse Voltage	$V_{RWM}$	-	80(303CNQ080) 100(303CNQ100)	V	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 126^\circ\text{C}$ , rectangular wave form	150	per leg	A
			300	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	3000	A	
Non-Repetitive Avalanche Energy (per leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 1\text{ A}$ , $L = 30\text{ mH}$	15	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	1	A	

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 150 A, Pulse, $T_J = 25^\circ\text{C}$	0.91	V
		@ 300 A, Pulse, $T_J = 25^\circ\text{C}$	1.09	
	$V_{F2}$	@ 150 A, Pulse, $T_J = 125^\circ\text{C}$	0.72	V
		@ 300 A, Pulse, $T_J = 125^\circ\text{C}$	0.85	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$	4.5	mA
		$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$	60
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	4150	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	6.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu\text{s}$

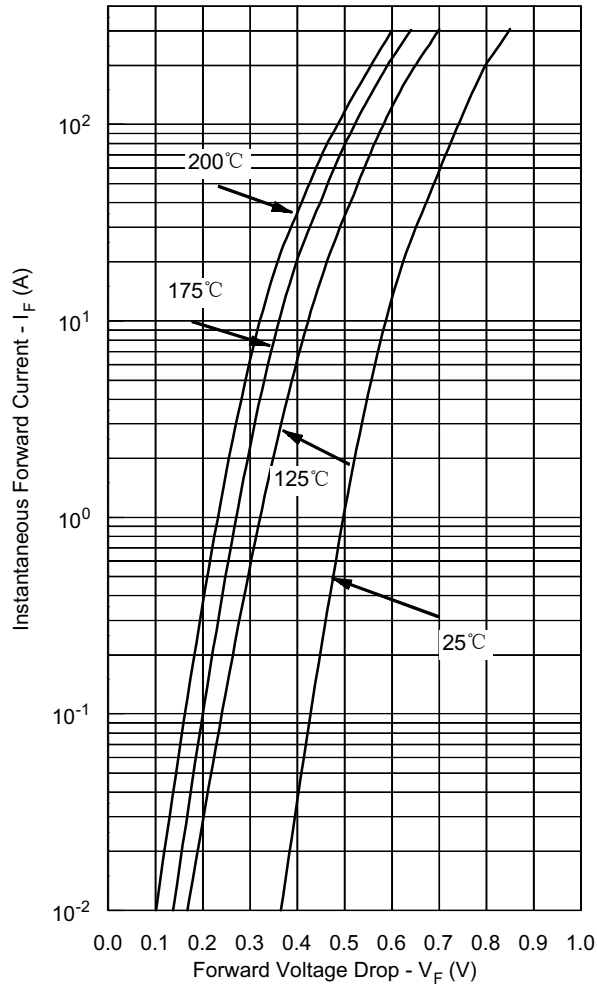
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

Thermal-Mechanical Specifications:

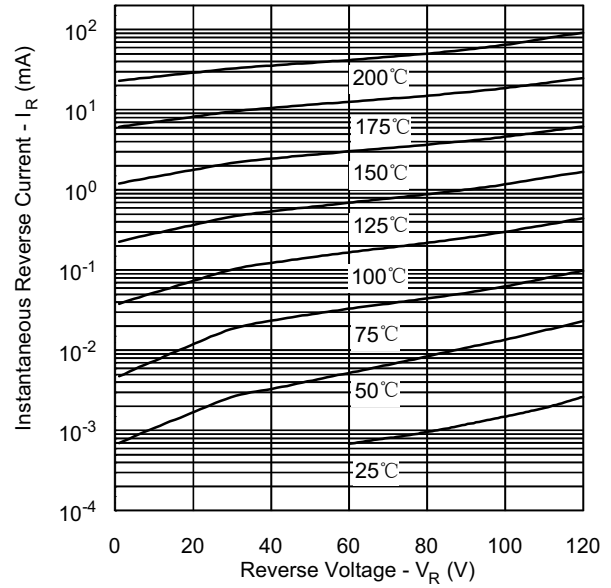
Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$	
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$	
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.40	$^\circ\text{C/W}$	
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.20	$^\circ\text{C/W}$	
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.10	$^\circ\text{C/W}$	
Approximate Weight	wt	-	79	g	
Mounting Torque	$T_M$	-	Mounting Torque Base	24 (min) 35 (max)	Kg-cm
			Terminal Torque	35 (min) 46 (max)	
Case Style	PRM4 Non-Isolated				

Data Sheet 3192, Rev. A

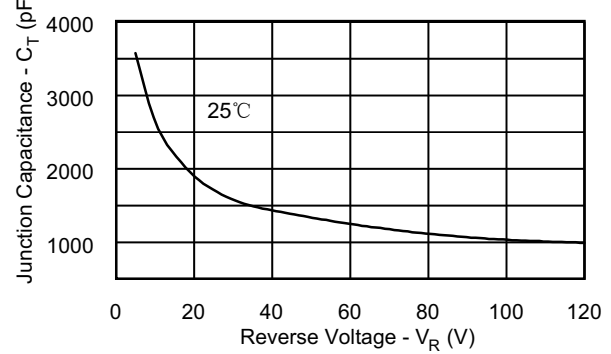
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Data Sheet 3192, Rev. A**

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