

TECHNICAL DATA
 DATA SHEET 593, REV. -

HIGH CURRENT PLASTIC POWER SCHOTTKY RECTIFIER (45 V, 80 A)

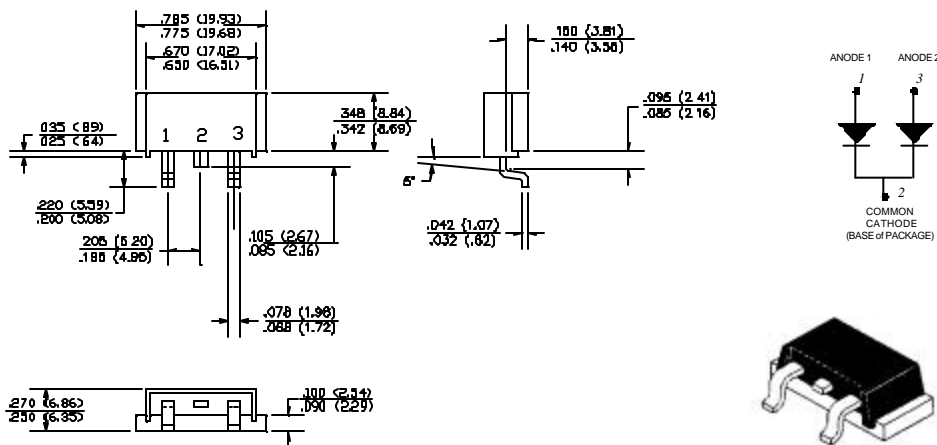
Applications:

- Switching Power Supply · Converters · Free-Wheeling Diodes · Polarity Protection Diode

Features:

- Soft Reverse Recovery at Low and High Temperature
- Extremely Low Forward Voltage Drop and 125 °C Operation
- Low Power Loss, High Efficiency
- High Surge Capacity
- Guard Ring for Enhanced Durability and Long Term Reliability
- Guaranteed Reverse Avalanche Characteristics
- Electrically / Mechanically Stable during and after Packaging

Mechanical Dimensions: In Inches / mm



PRM2-SL

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	45	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 91^\circ\text{C}$, rectangular wave form	80	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	860	A
Non-Repetitive Avalanche Energy (per leg)	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 8.0\text{ A}$, $L = 1.7\text{ mH}$	54	mJ
Repetitive Avalanche Current (per leg)	I_{AR}	I_{AS} decay linearly to 0 in 1 μs f limited by T_J max. $V_A = 1.5V_R$	8.0	A

Electrical Characteristics:

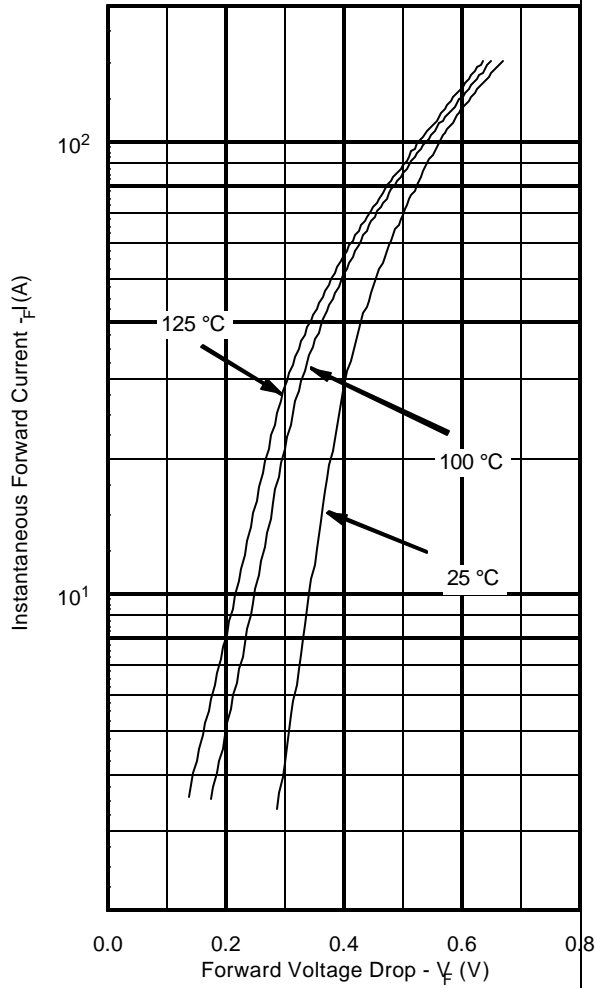
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg)	V_{F1}	@ 40 A, Pulse, $T_J = 25^\circ\text{C}$	0.49	V
		@ 80 A, Pulse, $T_J = 25^\circ\text{C}$	0.62	
	V_{F2}	@ 40 A, Pulse, $T_J = 100^\circ\text{C}$	0.44	V
		@ 80 A, Pulse, $T_J = 100^\circ\text{C}$	0.60	
Max. Reverse Current (per leg)	I_{R1}	@ $V_R = 45\text{ V}$, Pulse, $T_J = 25^\circ\text{C}$	5.0	mA
	I_{R2}	@ $V_R = 45\text{ V}$, Pulse, $T_J = 100^\circ\text{C}$	600	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$, $V_{SIG} = 50\text{ mV (p-p)}$	2600	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/ μs

Thermal-Mechanical Specifications:

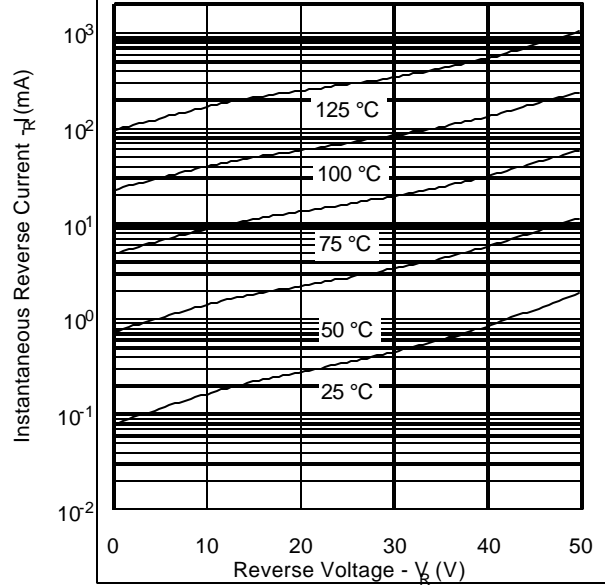
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-65 to +125	$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-65 to +125	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.42	$^\circ\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.30	$^\circ\text{C/W}$
Approximate Weight	wt	-	7.8	g
Mounting Torque	T_M	-	40 (min) 58 (max)	Kg-cm
Case Style	PRM2-SL			

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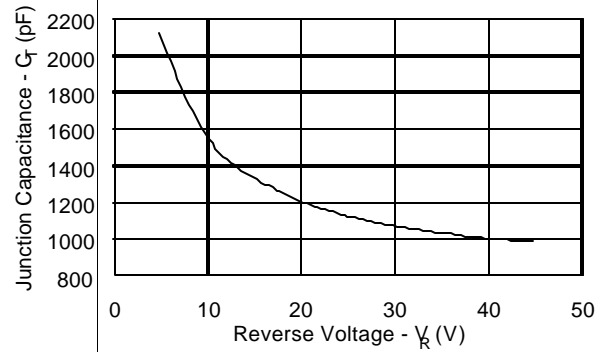
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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