

TECHNICAL DATA
DATA SHEET 4090, REV. A

HERMETIC POWER SCHOTTKY RECTIFIER

Very Low Forward Voltage Drop

Applications:

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

Features:

- Soft Reverse Recovery at Low and High Temperature
- Very Low Forward Voltage Drop
- Low Reverse Leakage Current
- Low Power Loss, High Efficiency
- High Surge Capacity
- Guard Ring for Enhanced Durability and Long Term Reliability
- Guaranteed Reverse Avalanche Characteristics

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	200	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle, rectangular wave form	15	A
Max. Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine wave (per leg)	200	A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J = 25\text{ }^\circ\text{C}$, $I_{AS} = 0.6\text{ A}$, $L = 40\text{mH}$	11.4	mJ
Repetitive Avalanche Current	I_{AR}	I_{AS} decay linearly to 0 in 1 μs f limited by T_J max $V_A = 1.5V_R$	0.6	A
Thermal Resistance (per leg)	$R_{\theta JC}$	(common cathode, common anode, doubler)	0.72	$^\circ\text{C/W}$
Thermal Resistance (per leg)	$R_{\theta JC}$	(single rectifier)	1.45	$^\circ\text{C/W}$
Max. Junction Temperature	T_J	-	-65 to +175	$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-65 to +175	$^\circ\text{C}$

Electrical Characteristics:

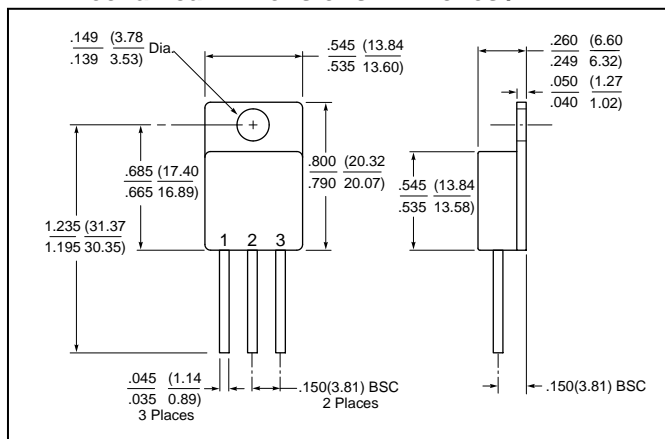
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg)	V_{F1}	@ 15A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	1.01	V
	V_{F2}	@ 15A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.85	V
Max. Reverse Current (per leg)	I_{R1}	@ $V_R = 200\text{V}$, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.35	mA
	I_{R2}	@ $V_R = 200\text{V}$, Pulse, $T_J = 125\text{ }^\circ\text{C}$	8.0	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$, $V_{SIG} = 50\text{mV}$ (p-p)	300	pF
Max. Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{RM} = 0.25\text{ A}$, $T_J = 25\text{ }^\circ\text{C}$	33	nsec

SENSITRON

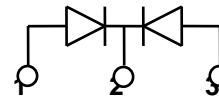
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Mechanical Dimensions: In Inches / mm



COMMON CATHODE



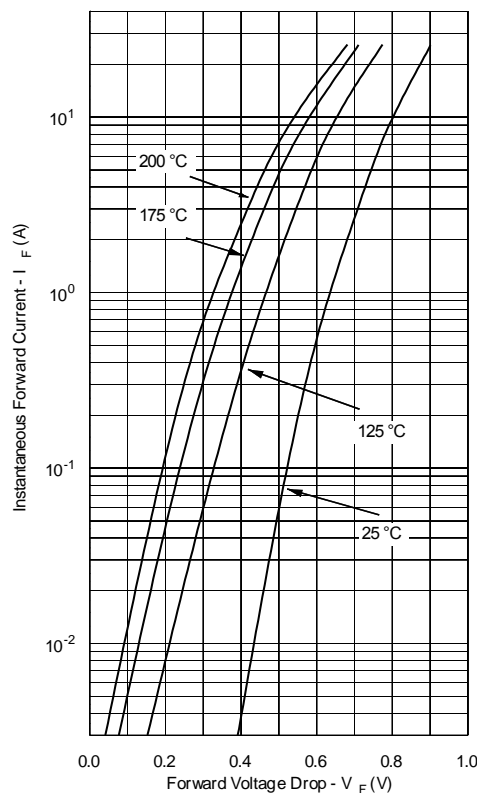
TO-254

PINOUT TABLE

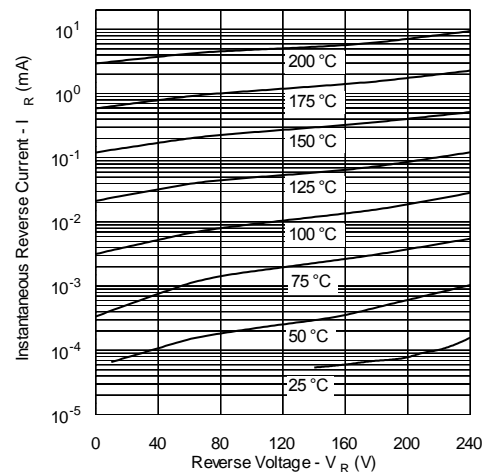
TYPE	PIN 1	PIN 2	PIN 3
DUAL RECTIFIER, COMMON CATHODE	ANODE 1	COMMON CATHODE	ANODE 2

Curves shown are for bare die only

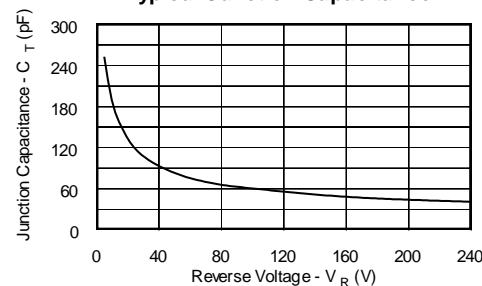
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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PART ORDERING INFORMATION:

12CGQ150 XX X

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Part Number

Screening Level (blank is no screening):

Suffix	Screened in Accordance with:
blank	No screening level
SX*	MIL-PRF-19500, TX Level
SV*	MIL-PRF-19500, TXV Level
SS*	MIL-PRF-19500, S Level

QCI (blank is no QCI):

Suffix	Inspection in Accordance with:
blank	No QCI
Q*	MIL-PRF-19500 QCI

*The 200V schottky diodes may be de-rated to 170V. In addition, PDA requirement may be modified to not include delta removals for reverse leakage current.

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