

Technical Data
Data Sheet 2866, Rev.-

50SQ080/50SQ100 SCHOTTKY RECTIFIER

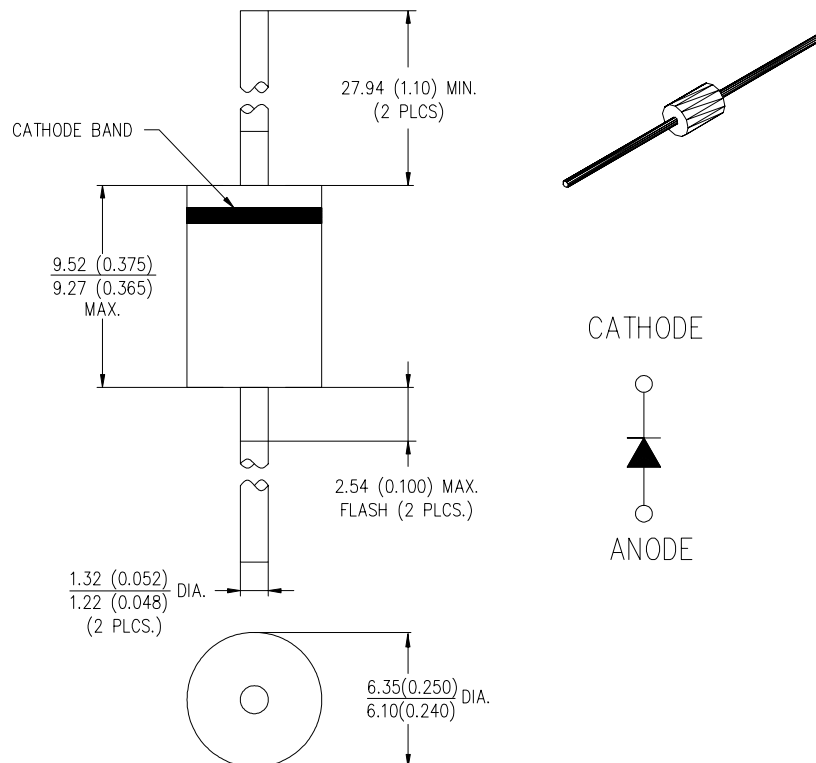
Applications:

- Switching power supply • Converters • Free-Wheeling Diodes • Reverse battery protection

Features:

- 175°C T_J operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Mechanical Dimensions: In Inches / mm



DO-204AR

SEMICONDUCTOR

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	V_{RWM}	-	80	50SQ080	V
			100	50SQ100	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 119^\circ\text{C}$, rectangular wave form	5		A
Max. Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine pulse	350		A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 1.0\text{ A}$, $L = 30\text{ mH}$	15		mJ
Repetitive Avalanche Current	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical	1.0		A

Electrical Characteristics:

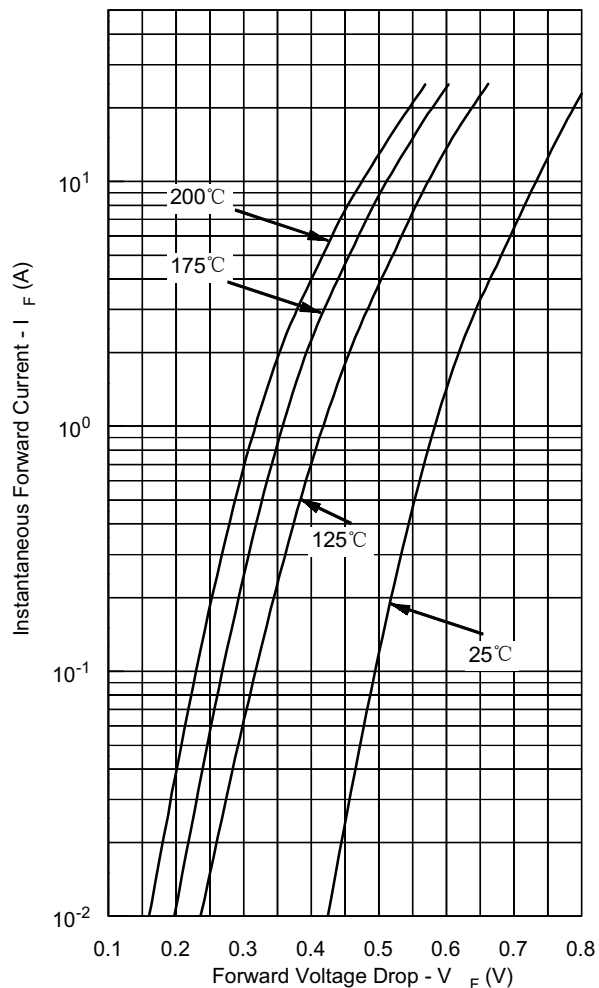
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop	V_{F1}	@ 5A, Pulse, $T_J = 25^\circ\text{C}$	0.66	V
		@ 10 A, Pulse, $T_J = 25^\circ\text{C}$	0.77	
	V_{F2}	@ 5 A, Pulse, $T_J = 125^\circ\text{C}$	0.52	V
		@ 10 A, Pulse, $T_J = 125^\circ\text{C}$	0.62	
Max. Reverse Current	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	0.55	mA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$	7	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	500	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	10.0	NH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ μs

* Pulse Width < 300 μs , Duty Cycle <2%**Thermal-Mechanical Specifications:**

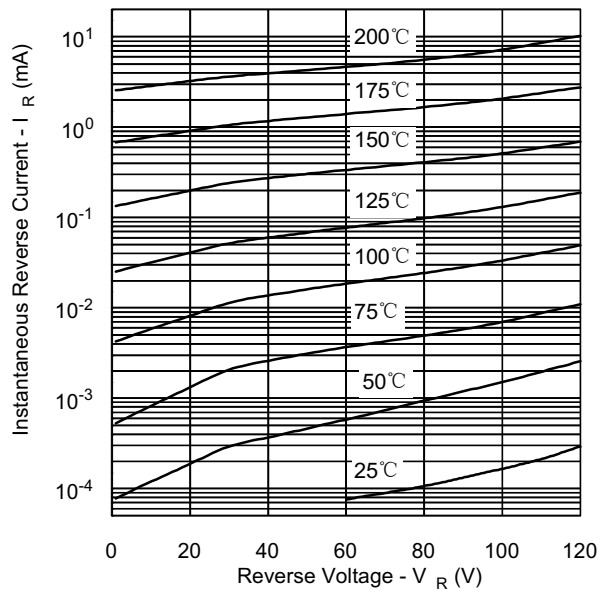
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +175	$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-55 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Lead	$R_{\theta JL}$	DC operation	8.0	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Air	$R_{\theta JA}$	Mounting surface, smooth and greased	44	$^\circ\text{C/W}$
Approximate Weight	wt	-	1.4	g
Case Style	DO-204AR			

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Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

