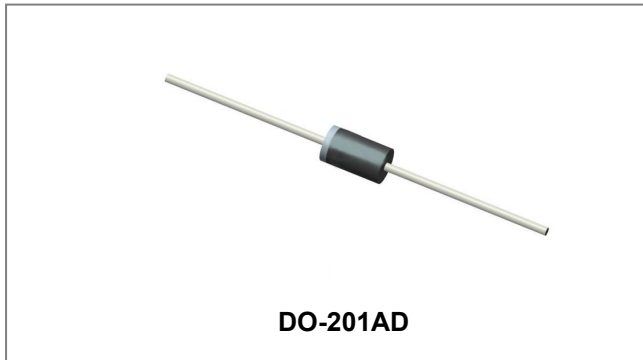


90SQ035/90SQ040/90SQ045 SCHOTTKY RECTIFIER



Features

- 150°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
- Terminals finish: 100% Pure Tin
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Maximum Ratings@T_C=25°C unless otherwise specified

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	35(90SQ035) 40(90SQ040) 45(90SQ045)	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C = 69°C, rectangular wave form	9	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	340	A
Non-Repetitive Avalanche Energy	E _{AS}	T _J =25°C, I _{AS} =1.8A, L=7.4mH	12	mJ
Repetitive Avalanche Current	I _{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T _J max. V _A =1.5×V _R typical	1.8	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 9A, Pulse, T _J = 25 °C @ 18A, Pulse, T _J = 25 °C	0.46 -	0.48 0.57	V
	V _{F2}	@ 9A, Pulse, T _J = 125 °C @ 18A, Pulse, T _J = 125 °C	0.40 -	0.42 0.52	V
Reverse Current*	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.04	2	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	17	70	mA
Junction Capacitance	C _T	@V _R = 5V, T _C = 25 °C, f _{SIG} = 1MHz	512	900	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/us

* Pulse width < 300 µs, duty cycle < 2%

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta\text{JL}}$	DC operation	8	$^{\circ}\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta\text{JA}}$	DC operation	44	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	1.02	g

Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

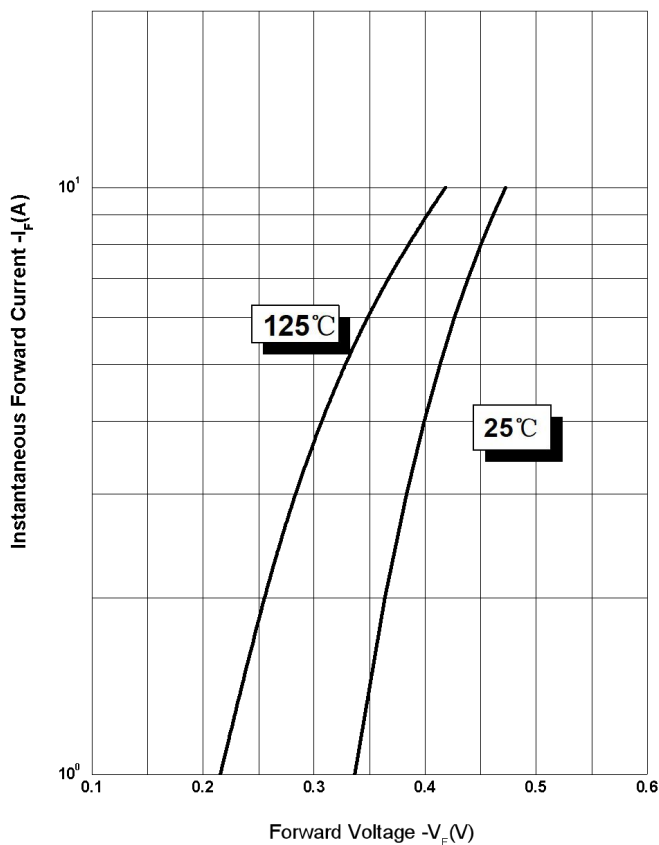


Figure 2 Typical Reverse Characteristics

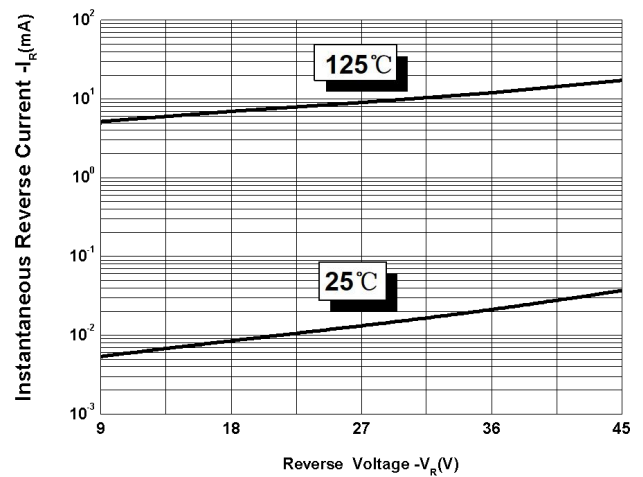
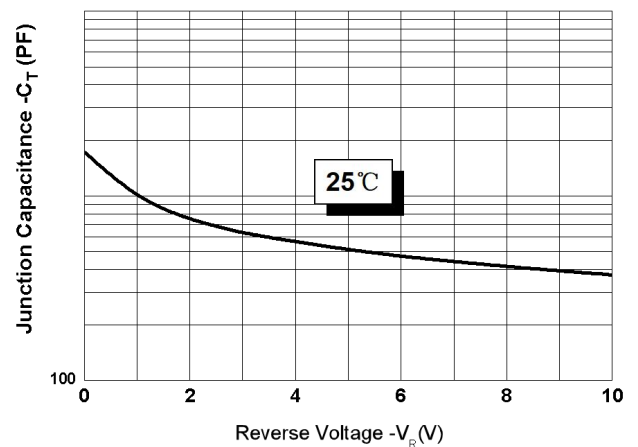
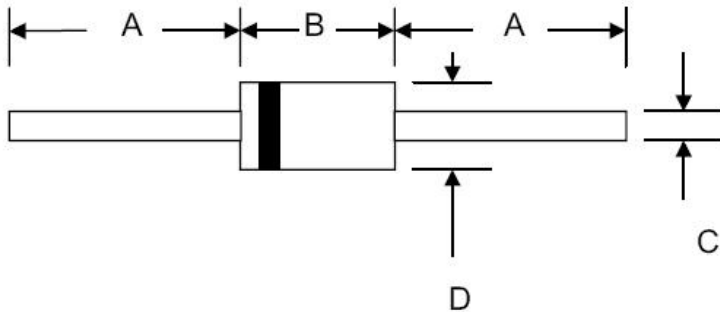


Figure 3 Typical Junction Capacitance



Mechanical Dimensions DO-201AD



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	-	1.000	-
B	8.50	9.50	0.335	0.374
C	1.2	1.3	0.048	0.052
D	5.0	5.6	0.197	0.220

Ordering Information

Device	Package	Shipping
90SQ SERIES	DO-201AD (Pb-Free)	1250pcs / tape
90SQ SERIESTA	DO-201AD (Pb-Free)	1250pcs / tape

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram

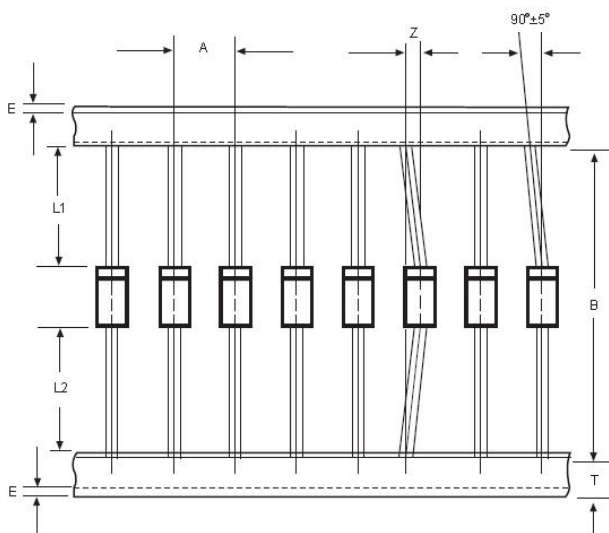


Where XXXXX is YYWWL

90SQ035 = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification DO-201AD



SYMBOL	Millimeters	
	Min.	Max.
A	9.50	10.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0

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