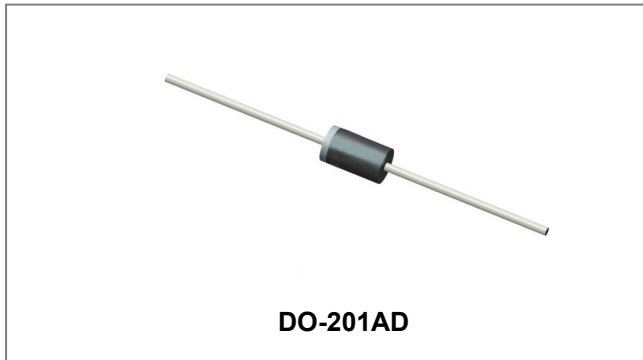


## 90SQ035/90SQ040/90SQ045 SCHOTTKY RECTIFIER



### Features

- 150°C T<sub>J</sub> 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
- 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:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	35(90SQ035) 40(90SQ040) 45(90SQ045)	V
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>C</sub> = 69°C, rectangular wave form	9	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3 ms, half Sine pulse	400	A
Non-Repetitive Avalanche Energy	E <sub>AS</sub>	T <sub>J</sub> =25°C, I <sub>AS</sub> =1.8A, L=7.4mH	12	mJ
Repetitive Avalanche Current	I <sub>AR</sub>	Current decaying linearly to zero in 1 µsec Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub> typical	1.8	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 9A, Pulse, T <sub>J</sub> = 25 °C @ 18A, Pulse, T <sub>J</sub> = 25 °C	0.46 0.55	0.48 0.57	V
	V <sub>F2</sub>	@ 9A, Pulse, T <sub>J</sub> = 125 °C @ 18A, Pulse, T <sub>J</sub> = 125 °C	0.40 0.50	0.42 0.52	V
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated VR T <sub>J</sub> = 25 °C	0.06	2	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated VR T <sub>J</sub> = 125 °C	35	70	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C, f <sub>SIG</sub> = 1MHz	650	900	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/us

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

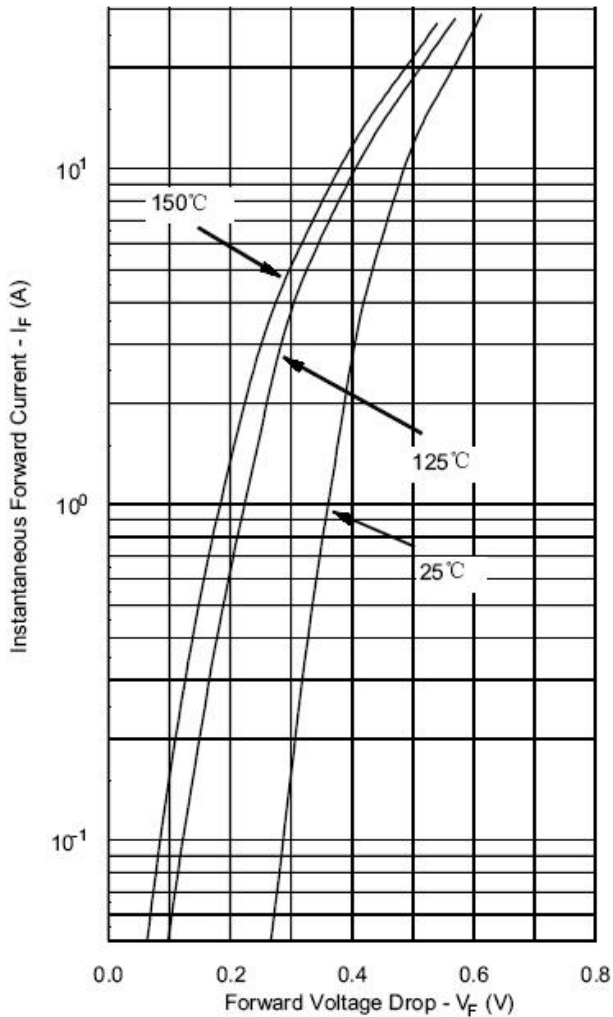
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Thermal-Mechanical Specifications:**

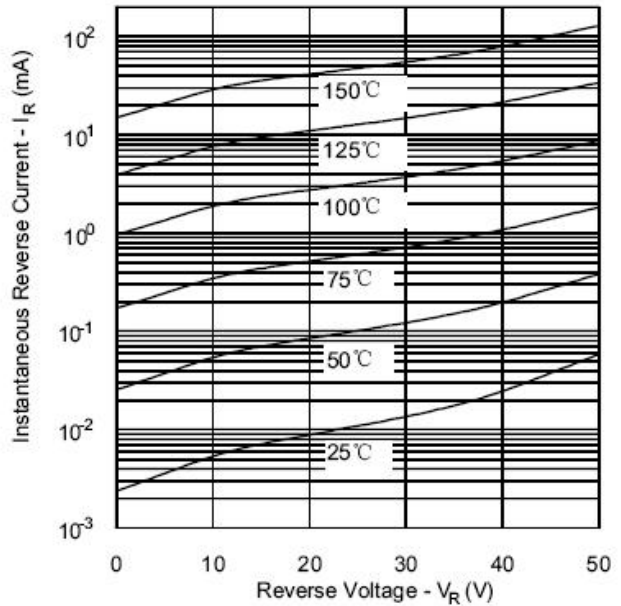
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	DC operation	8	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	DC operation	44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

**Ratings and Characteristics Curves**

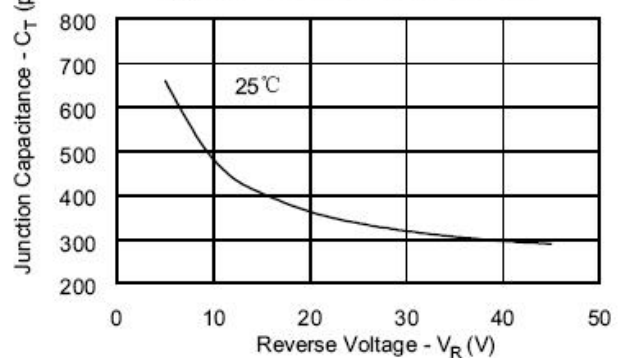
Typical Forward Characteristics



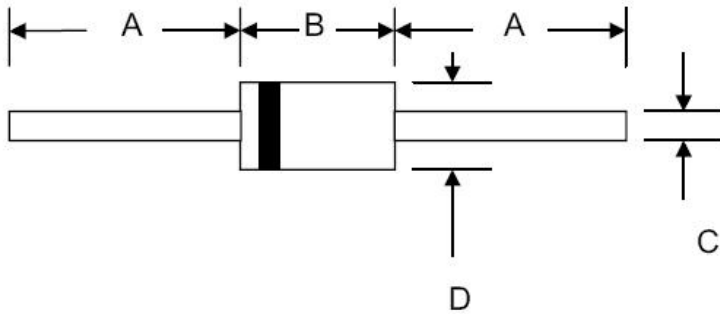
Typical Reverse Characteristics



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

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

**Marking Diagram**

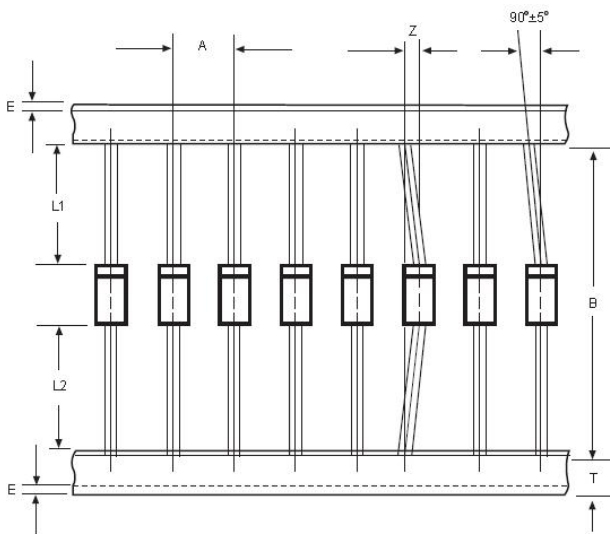


Where XXXXX is YYWWL

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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