



# THE DATASHEET OF 90SQ045



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

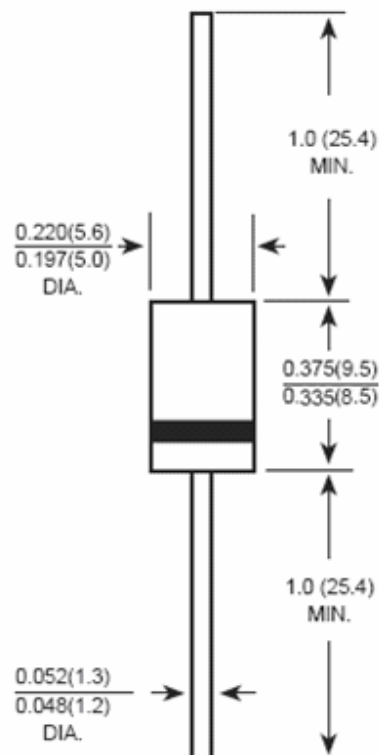
### Applications:

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

### 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

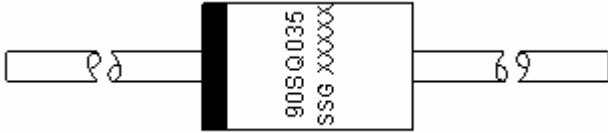
### Mechanical Dimensions: In Inches / mm



**DO-201AD**



**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

**Ordering Information:**

Device	Package	Shipping
90SQ035	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.



**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	35(90SQ035) 40(90SQ040) 45(90SQ045)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 69^\circ\text{C}$ , rectangular wave form	9	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	400	A
Non-Repetitive Avalanche Energy(peg leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 1.8\text{A}$ , $L = 7.4\text{mH}$	12	mJ
Repetitive Avalanche Current(peg leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	1.8	A

**Electrical Characteristics:**

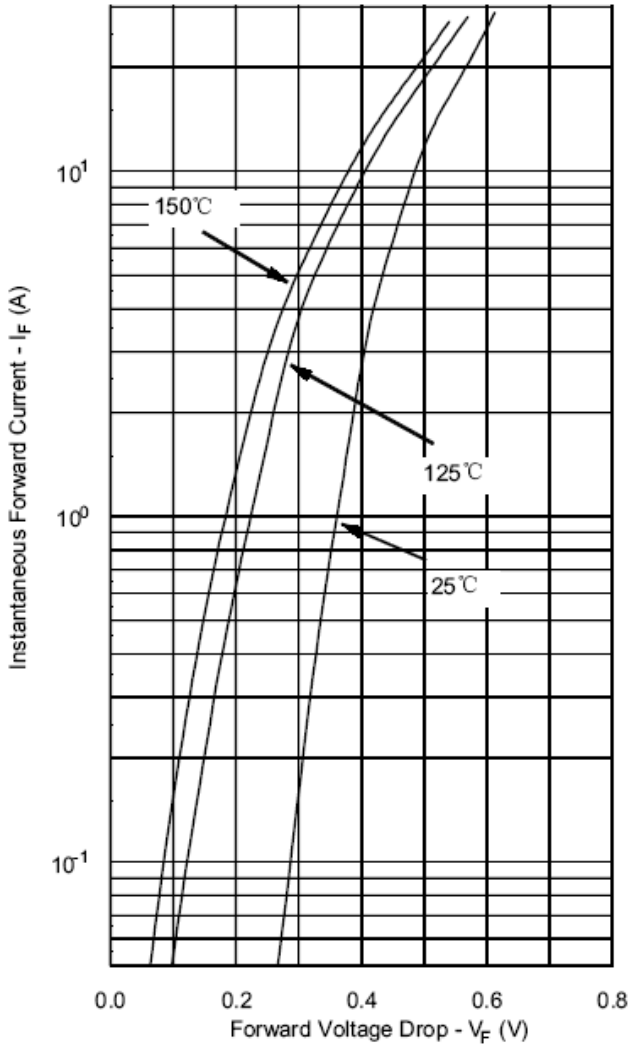
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 9A, Pulse, $T_J = 25^\circ\text{C}$ @ 18A, Pulse, $T_J = 25^\circ\text{C}$	0.48 0.57	V
	$V_{F2}$	@ 9A, Pulse, $T_J = 125^\circ\text{C}$ @ 18A, Pulse, $T_J = 125^\circ\text{C}$	0.42 0.52	V
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated VR}$ $T_J = 25^\circ\text{C}$	1.75	mA
	$I_{R2}$	@ $V_R = \text{rated VR}$ $T_J = 125^\circ\text{C}$	70	mA
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	900	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	10	nH
Max. Voltage Rate of Change	$dv/dt$	-	10,000	V/ s

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

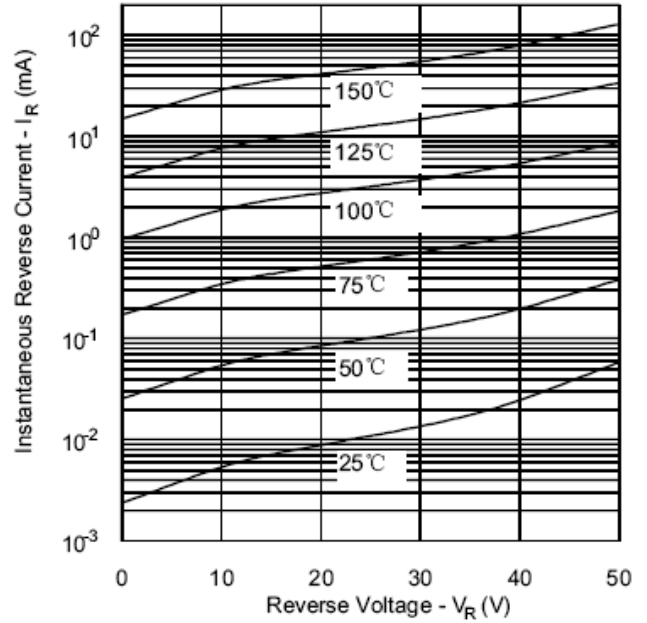
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Lead (per leg)	$R_{\theta JL}$	DC operation	8.0	$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Air	$R_{\theta JA}$	Mounting surface, smooth and greased	44	$^\circ\text{C/W}$
Approximate Weight	wt	-	1.02	g
Case Style	DO-201AD			

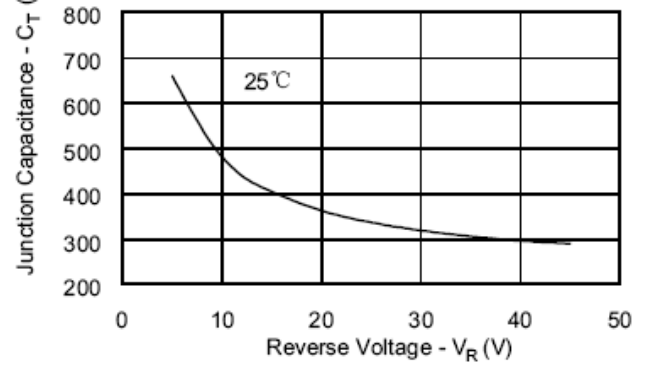
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**







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