

# Diodes

## S1 Series

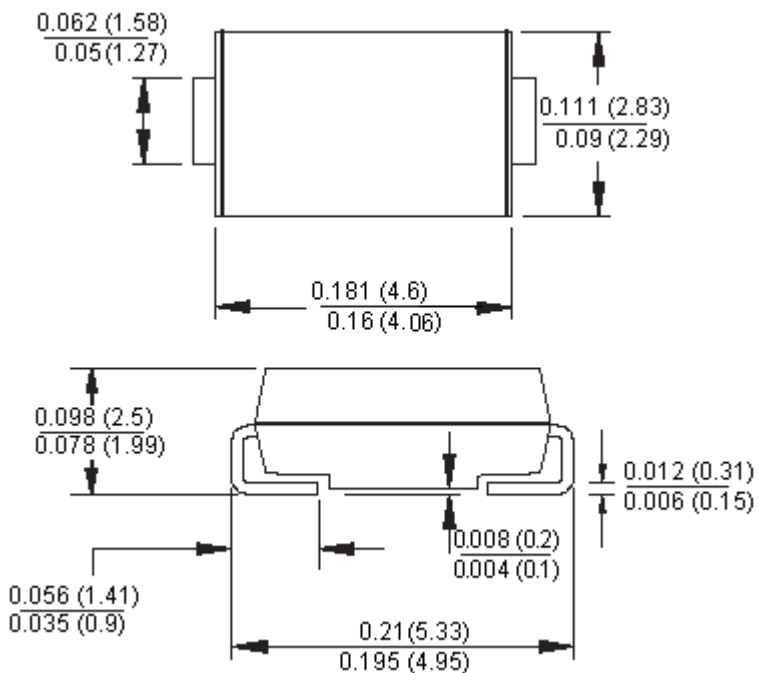


### Features:

- For surface mounted application
- Glass passivated junction chip
- Low forward voltage drop
- High current capability
- Easy pick and place
- High surge current capability
- Plastic material
- High temperature soldering: 260°C / 10 seconds at terminals
- High reliability grade (AEC Q101 qualified)



### SMA/DO-214AC



Dimensions : Inches (Millimetres)

### Mechanical Data

Cases	: Moulded plastic
Terminals	: Pure tin plated, lead free solderable per J-STD-002B and JESD22-B102D
Polarity	: Indicated by cathode band
Packing	: 12 mm tape per EIA STD RS-481
Weight	: 0.064 g

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%

Type Number	Symbol	S1K	S1M	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	800	1,000	V
Maximum RMS Voltage	$V_{RMS}$	560	700	
Maximum DC Blocking Voltage	$V_{DC}$	800	1,000	
Maximum Average Forward Rectified Current $T_L = 110^\circ\text{C}$	$I_{(AV)}$	1		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	$I_{FSM}$	30		
Maximum Instantaneous Forward Voltage at 1 A	$V_F$	1.1		V
Maximum DC Reverse Current at $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage at $T_A = 125^\circ\text{C}$	$I_R$	1 50		$\mu\text{A}$
Maximum Reverse Recovery Time (Note 1)	$T_{rr}$	1.5		$\mu\text{s}$
Typical Junction Capacitance (Note 2)	$C_j$	12		pF
Non-Repetitive Peak Reverse Avalanche Energy at 25°C, $I_{AS} = 1\text{A}$ , $L = 10\text{ mH}$	$E_{AS}$	5		mJ
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$ $R_{\theta JA}$	30 85		$^\circ\text{C} / \text{W}$
Operating Temperature Range	$T_J$	-55 to +150		$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$			

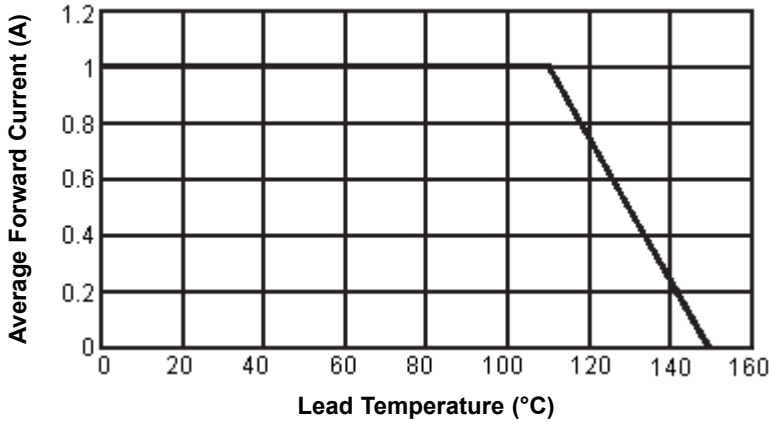
- Notes :**
- Reverse recovery test conditions :  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_{RR} = 0.25\text{ A}$
  - Measured at 1 MHz and applied  $V_R = 4\text{ V}$
  - Measured on PC board with  $0.2 \times 0.2$  inches ( $5 \times 5$ ) copper pad areas

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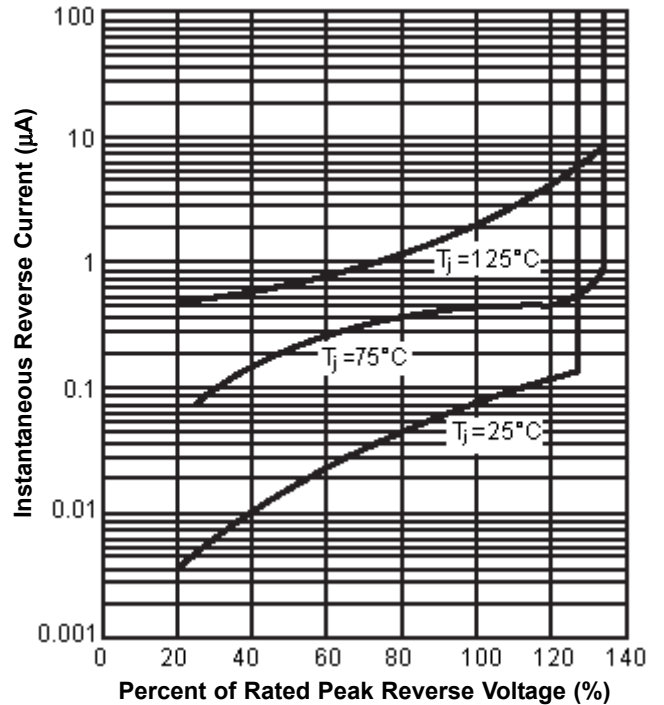
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### Ratings and Characteristic Curves (S1K and S1M)

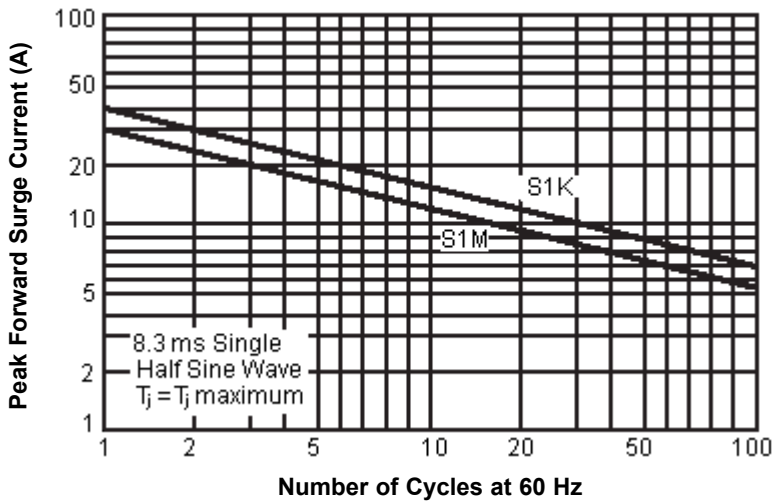
Maximum Forward Current Derating Curve



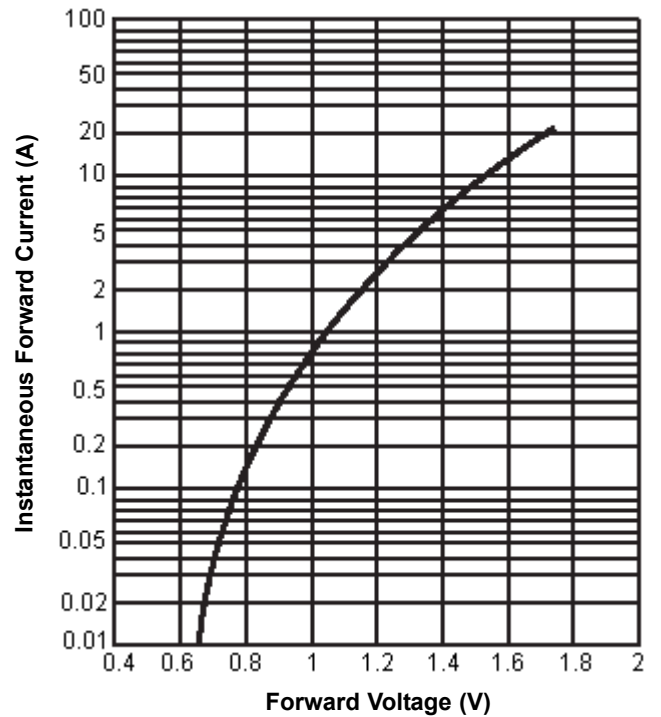
Typical Reverse Characteristics



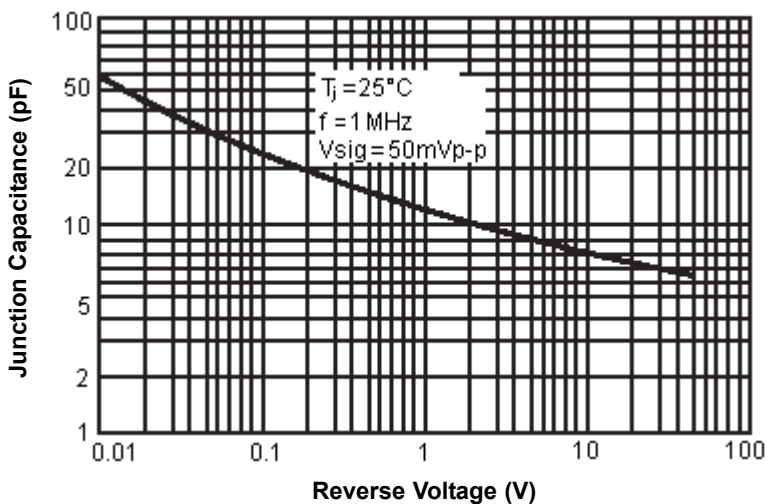
Maximum Non-Repetitive Forward Surge Current



Typical Forward Characteristics



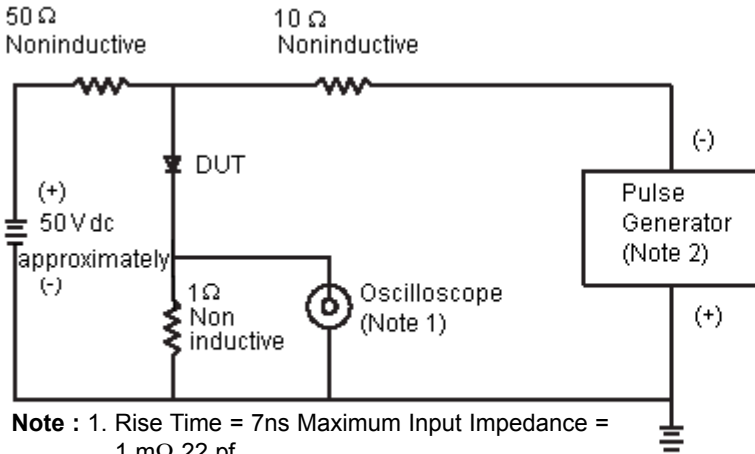
Typical Junction Capacitance



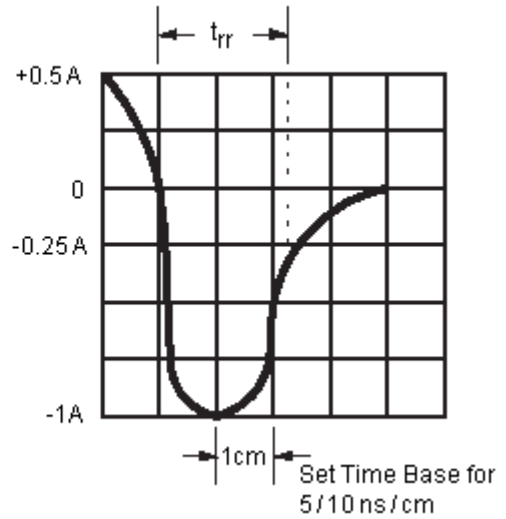
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Reverse Recovery Time Characteristic and Test Circuit Diagram



**Note :** 1. Rise Time = 7ns Maximum Input Impedance = 1 mΩ 22 pf  
 2. Rise Time = 10ns Maximum Source Impedance = 50 Ω



### Part Number Table

Description	Part Number
Diode, Standard, 1 A, 800 V	S1K
Diode, Standard, 1 A, 1,000 V	S1M

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