Diodes

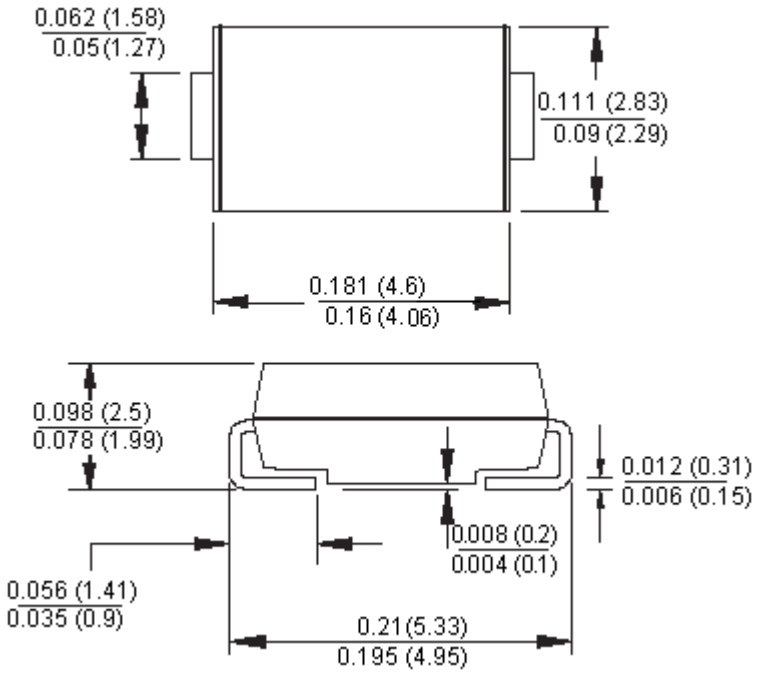
S1 Series

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)

RoHS Compliant

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

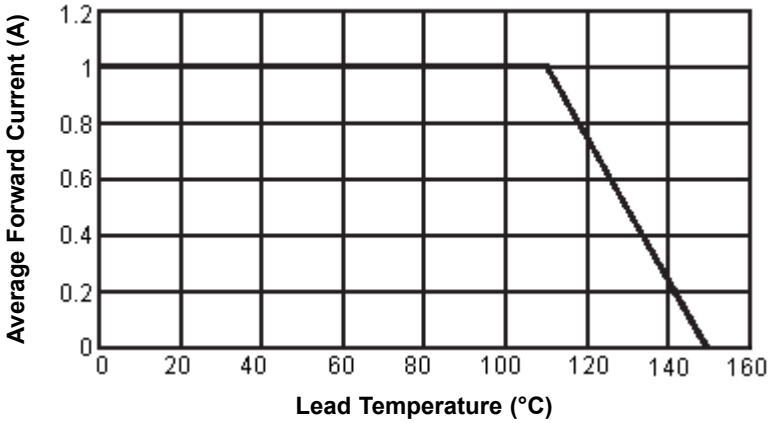
Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%

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°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°C at Rated DC Blocking Voltage at T_A = 125°C	I_R	1 50		µA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	1.5		uS
Typical Junction Capacitance (Note 2)	C_j	12		pF
Non-Repetitive Peak Reverse Avalanche Energy at 25°C, I_{AS} = 1_A, L = 10 mH	E_{AS}	5		mJ
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$ $R_{\theta JA}$	30 85		°C / W
Operating Temperature Range	T_J	-55 to +150		°C
Storage Temperature Range	T_{STG}			

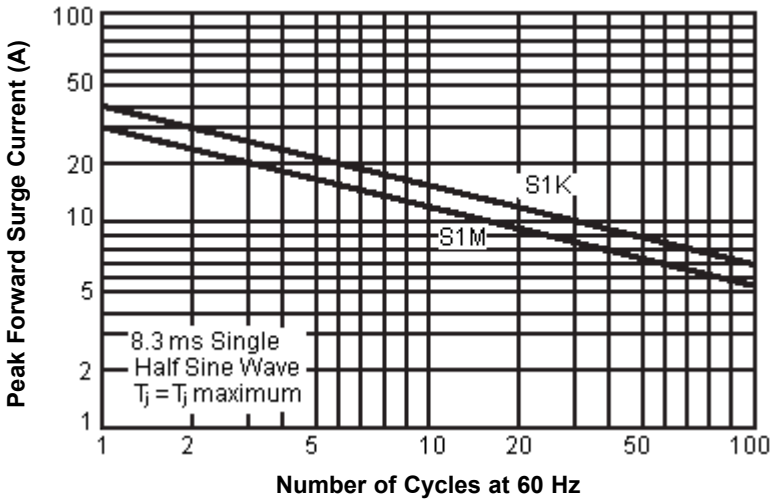
Notes : 1. Reverse recovery test conditions : I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A
2. Measured at 1 MHz and applied V_R = 4 V
3. Measured on PC board with 0.2 × 0.2 inches (5 × 5) copper pad areas

Ratings and Characteristic Curves (S1K and S1M)

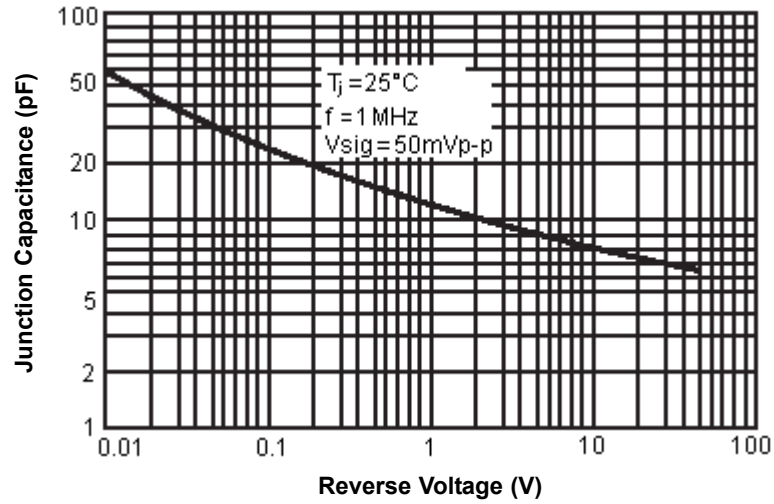
Maximum Forward Current Derating Curve



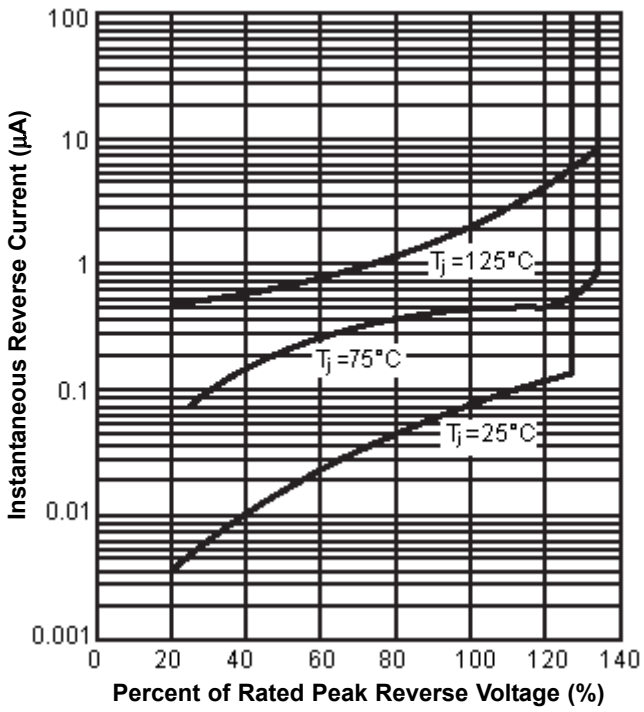
Maximum Non-Repetitive Forward Surge Current



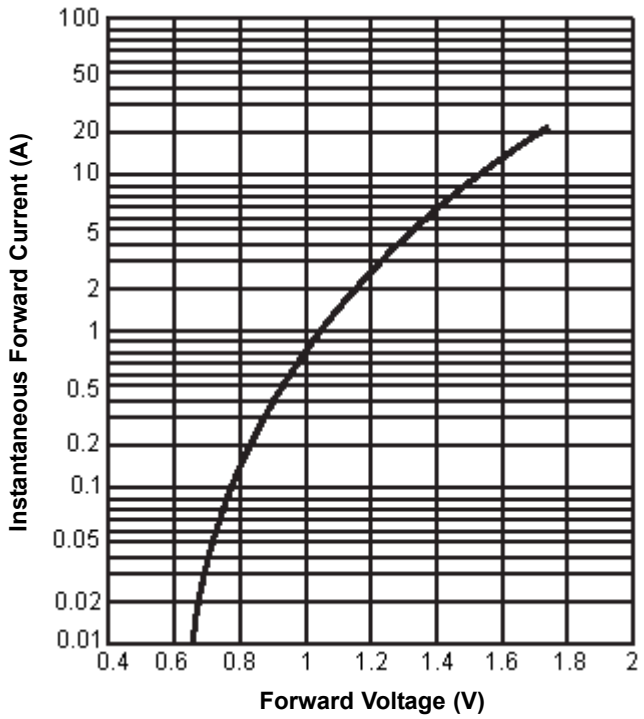
Typical Junction Capacitance



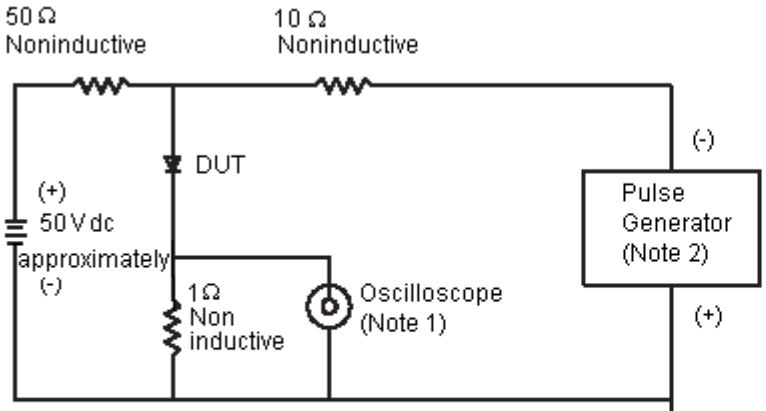
Typical Reverse Characteristics

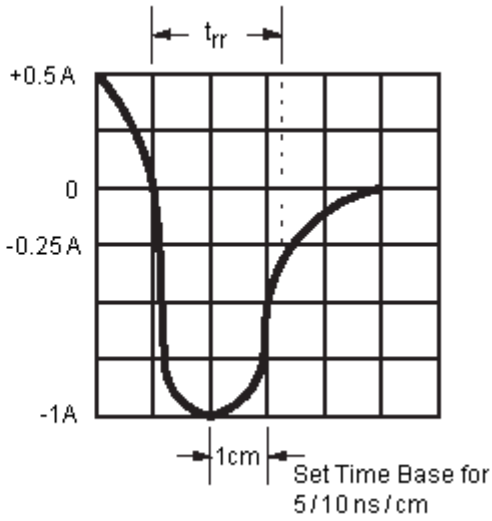


Typical Forward Characteristics



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