Diode
Ultra Fast

RoHS Compliant

Features:

- Glass passivated junction chip
- For surface mounted application
- Low profile package
- Built-in strain relief
- Ideal for automated placement
- Easy pick and place
- Super fast recovery time for high efficiency
- Glass passivated chip junction
- High temperature soldering: 260°C/10 seconds at terminals
- Plastic material

Specifications:

Mechanical Data:

Cases	: Moulded plastic
Terminals	: Pure tin plated, lead free
Polarity	: Indicated by cathode band
Packing	: 16mm tape per EIA STD RS-481
Weight	: 0.21g

Maximum Ratings and Electrical Characteristics

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

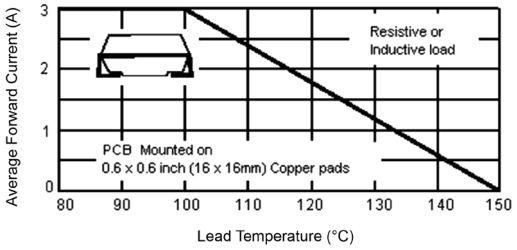
Characteristics	Symbol	Values	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	600	V
Maximum RMS Voltage	V_{RMS}	420	
Maximum DC Blocking Voltage	V_{DC}	600	
Maximum Average Forward Rectified Current	$I_{(AV)}$	3	A
Peak Forward Surge Current, 8.3ms A Single Half Sine-wave Superimposed on Rated Load (JEDEC method) at TL = 100°C	I_{FSM}	100	
Maximum Instantaneous Forward Voltage at 3.0A	V_F	1.7	V
Maximum DC Reverse Current at TA = 25°C at Rated DC Blocking Voltage at TA = 100°C	I_R	10 500	µA µA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	35	nS
Typical Junction Capacitance (Note 2)	C_j	30	pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	47 12	°C/W
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_T		

Notes:

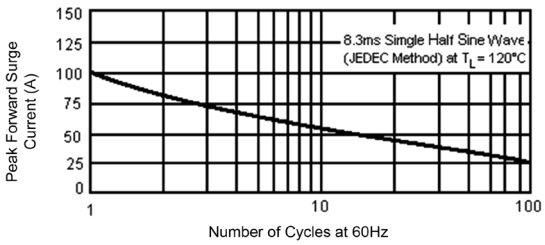
1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
2. Measured at 1MHz and Applied V_R = 4V.
3. Units Mounted on PCB with 0.6" × 0.6" (16mm × 16mm) Copper Pad Areas.

Ratings and Characteristic Curves

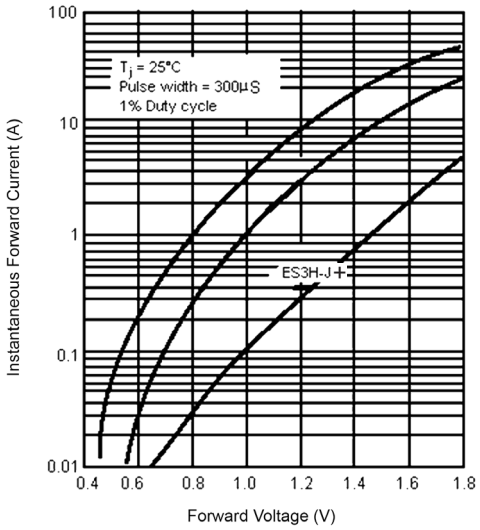
Maximum Forward Current Derating Curve



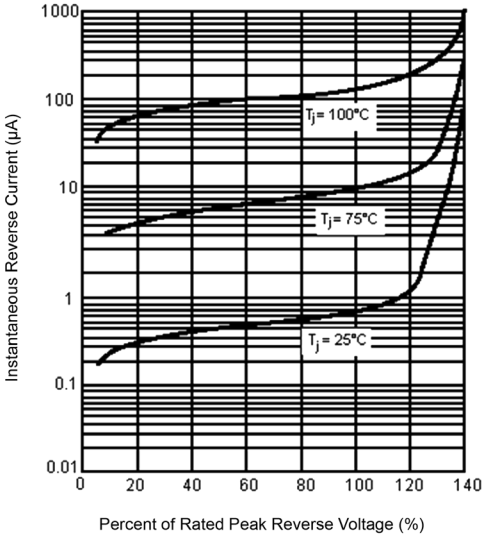
Maximum Non-Repetitive Peak Forward Surge Current



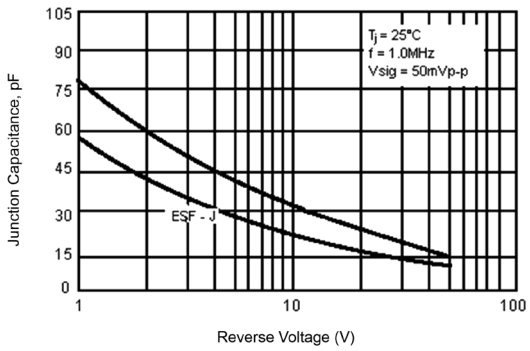
Typical Instantaneous Forward Characteristics



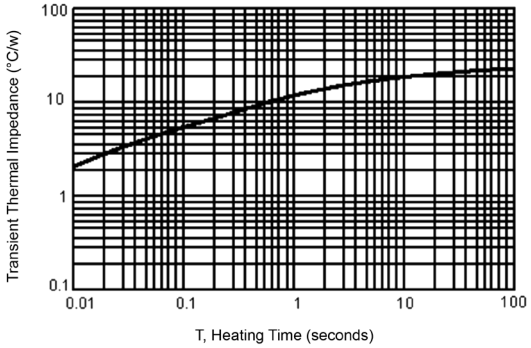
Typical Reverse Characteristics



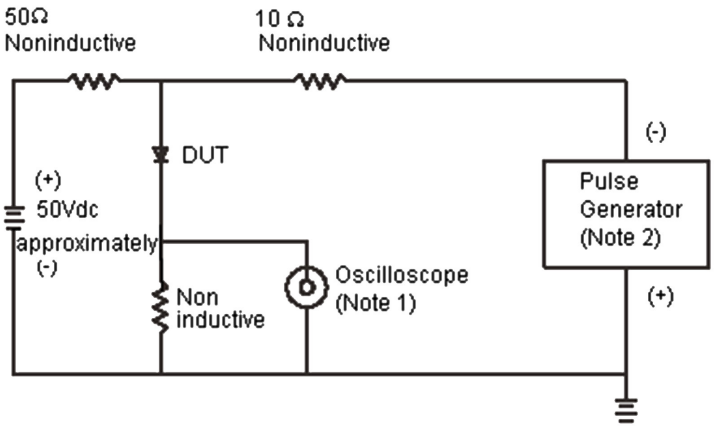
Typical Junction Capacitance

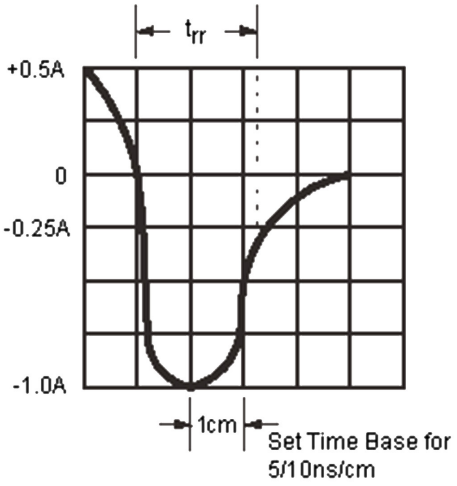


Typical Transient Thermal Impedance



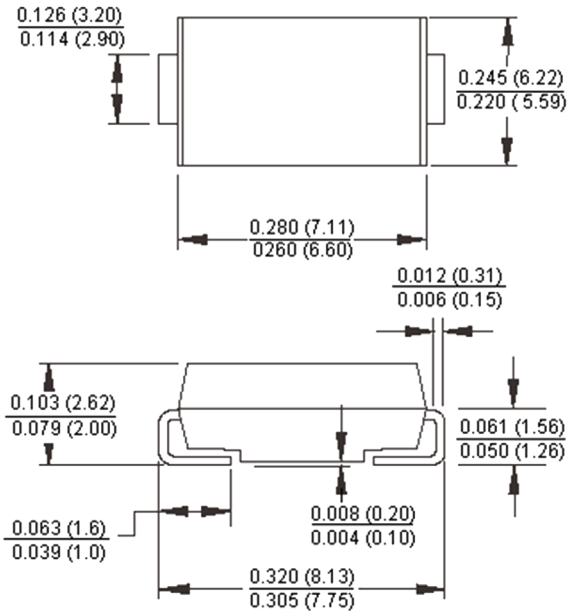
Reverse Recovery Time Characteristic and Test Circuit Diagram





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

SMC/DO-214AB



Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
Diode, Ultra-Fast, 3A, 600V	ES3J+