

# Fast / Ultrafast Diode



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

## Mechanical Data

Case	: Moulded plastic
Terminals	: Pure tin plated, lead free
Polarity	: Indicated by cathode band
Standard Packaging	: 12mm tape (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, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

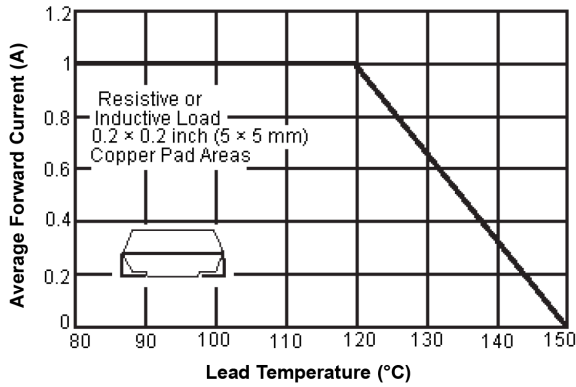
Characteristics	Symbol	ES1A+	ES1G+	ES1J+	Unit
Max. Recurrent Peak Reverse Voltage	$V_{RRM}$	50	400	600	V
Max. RMS Voltage	$V_{RMS}$	35	280	420	
Max. DC Blocking Voltage	$V_{DC}$	50	400	600	
Max. Average Forward Rectified Current	$I_{(AV)}$	1			A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	30			
Max. Instantaneous Forward Voltage at 1 A	$V_F$	0.95	1.3	1.7	V
Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$	$I_R$	5 100			$\mu\text{A}$
Maximum Reverse Recovery Time (Note 1)	$T_{RR}$	35			nS
Typical Junction Capacitance (Note 2)	$C_J$	10	8		pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$	85			$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	35			
Operating Temperature Range	$T_J$	-55 to +150			$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$				

- Notes** : 1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 0.25\text{A}$   
2. Measured at 1MHz and applied  $V_R = 4\text{V}$   
3. PCB mounted on 0.2 x 0.2 inches (5 x 5 mm) copper pad area

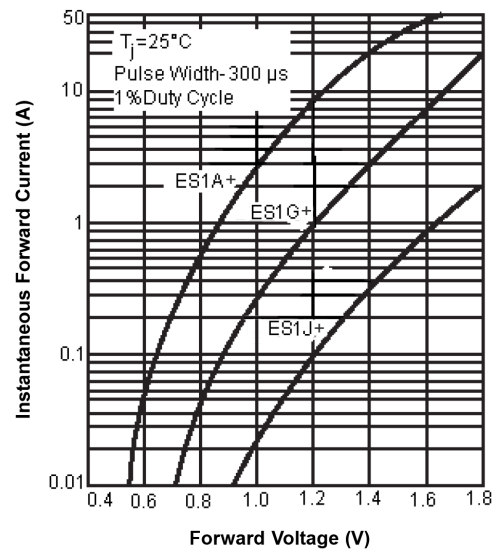


## Ratings and Characteristic Curves

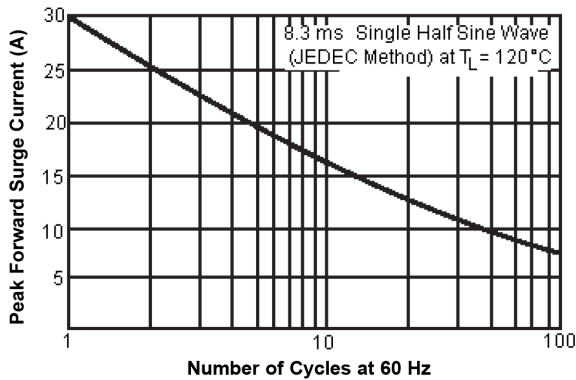
Maximum Forward Current Derating Curve



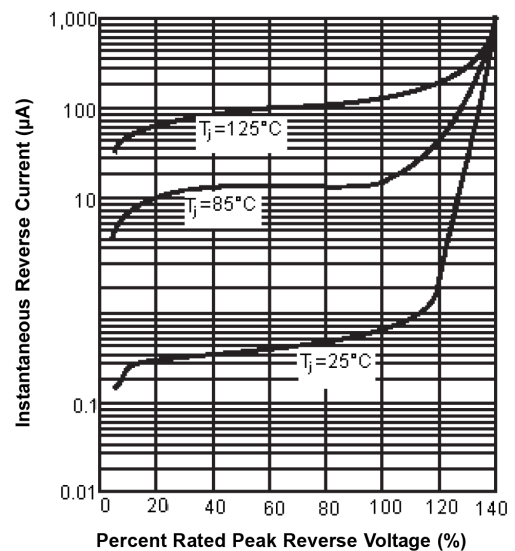
Typical Instantaneous Forward Characteristics



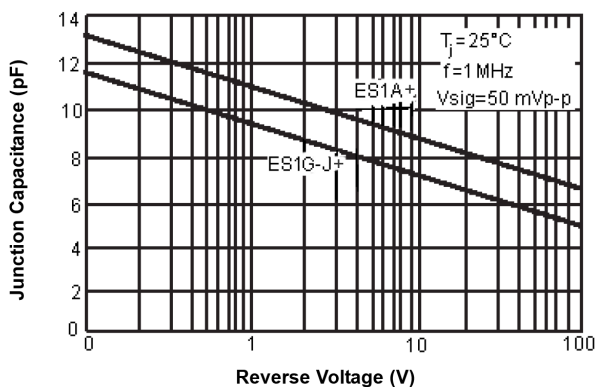
Maximum Non-Repetitive Peak Forward Surge Current



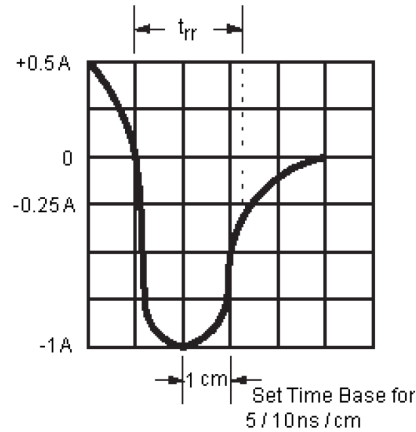
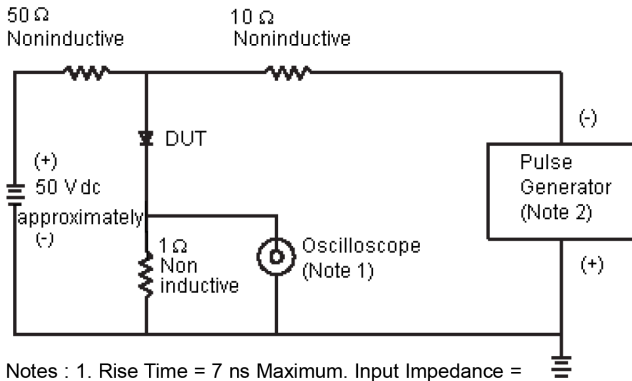
Typical Reverse Characteristics



Typical Junction Capacitance



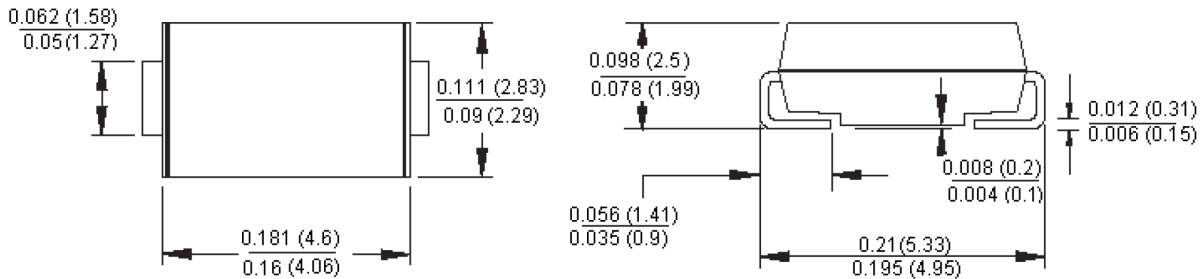
## Reverse Recovery Time Characteristic and Test Circuit Diagram



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

## Dimensions:

### SMA/DO-214AC



Dimensions : Inches (Millimetres)

## Part Number Table

Description	Part Number
Diode, Ultra-Fast, 1A, 50V	ES1A+
Diode, Ultra-Fast, 1A, 400V	ES1G+
Diode, Ultra-Fast, 1A, 600V	ES1J+

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