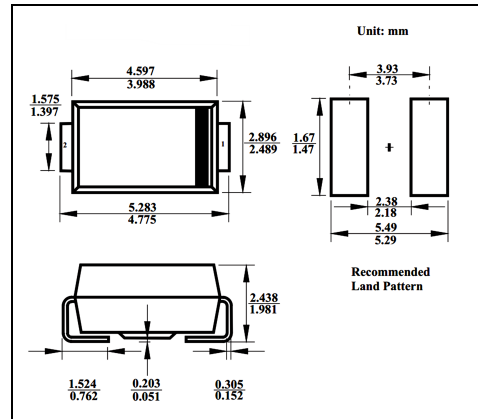


## SMA(DO-214AC) Plastic-Encapsulate Diodes

### ES1A - ES1D 1.0A Superfast Rectifiers

#### Features

- For surface mount applications
- Glass passivated junction
- Low profile package
- Easy pick and place
- Built-in strain relief
- Superfast recovery times for high efficiency



#### Maximum Ratings\* ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	1A	1B	1C	1D	Unit
$V_{RRM}$	Peak Repetitive Reverse Voltage	50	100	150	200	
$V_{RMS}$	Maximum RMS Voltage	35	70	105	140	
$V_R$	DC Reverse Voltage (Rated $V_R$ )	50	100	150	200	
$I_o$	Average Rectified Current @ $T_A = 120^\circ\text{C}$	1.0				A
$i_{f(surge)}$	Peak Forward Surge Current 8.3ms single half-sine-wave Superimposed on rated load (JEDEC method)	30				A
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	1.47 11.76				W mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient**	85				$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead**	35				$^\circ\text{C}/\text{W}$
$T_{stg}$	Storage Temperature Range	-50 to +150				$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-50 to +150				$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

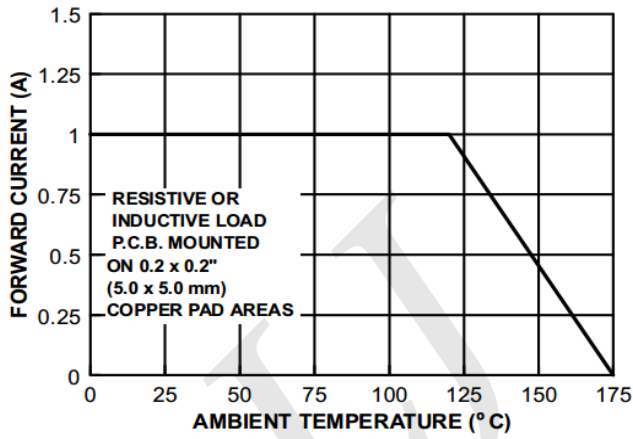
\*\*Device mounted on FR-4 PCB 0.013 mm.

#### Electrical Characteristics ( $T_a=25^\circ\text{C}$ unless otherwise specified)

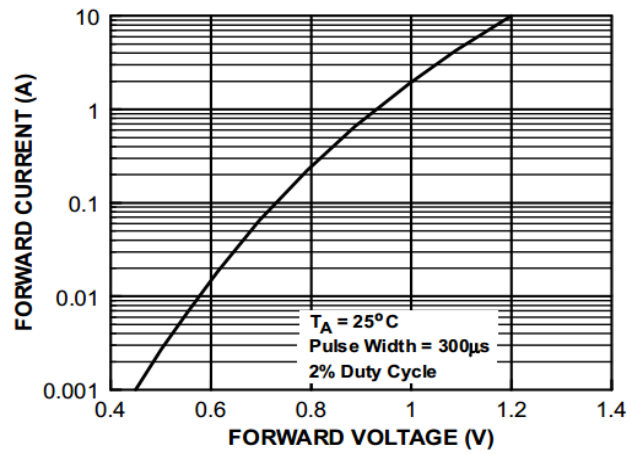
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$I_R$	Maximum Reverse Current	$T_A = 25^\circ\text{C}$			5.0	$\mu\text{A}$
		$T_A = 100^\circ\text{C}$			100	$\mu\text{A}$
$V_F$	Maximum Forward Voltage	$I_F = 1.0\text{A}$			0.92	V
$C_J$	Typical Junction Capacitance	$V_R = 4.0\text{V}, f = 1.0\text{MHz}$		7.0		pF
$t_{rr}$	Maximum Reverse Recovery Time	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$		15		ns

# Typical Characteristics

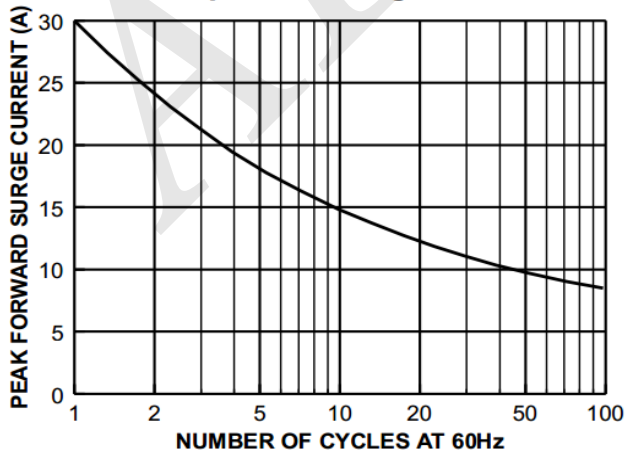
## Forward Current Derating Curve



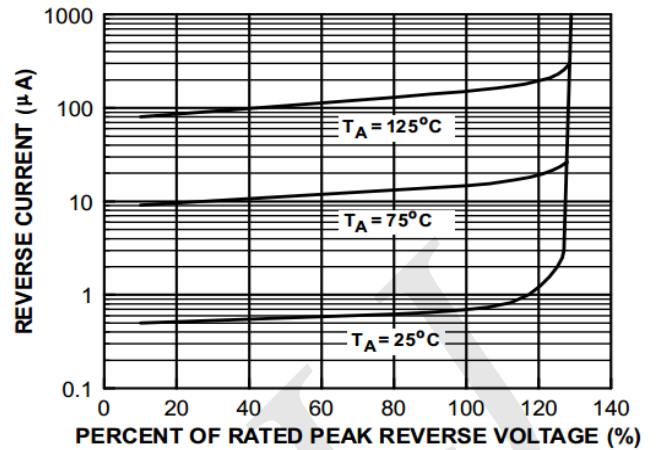
## Forward Characteristics



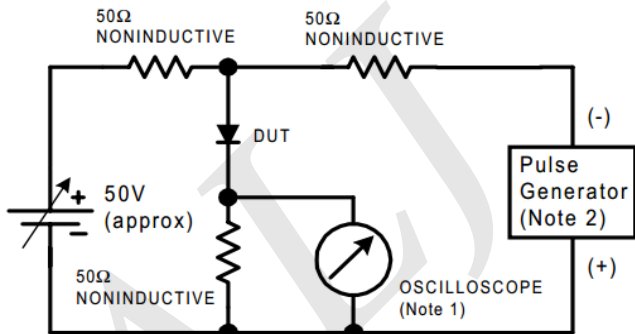
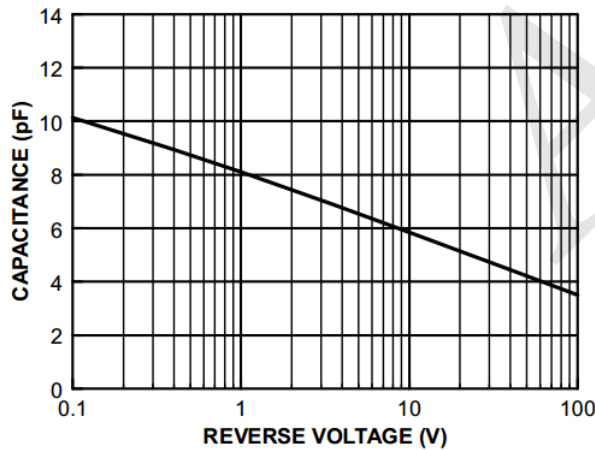
## Non-Repetitive Surge Current



## Reverse Characteristics

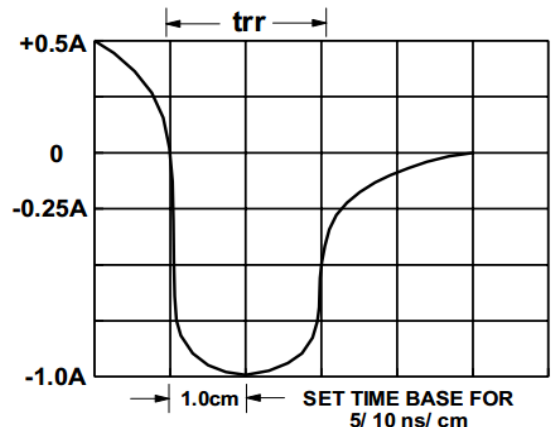


## Junction Capacitance



### NOTES:

1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.



## Reverse Recovery Time Characteristic and Test Circuit Diagram