

# Super-Fast Recovery Rectifier

ES1A - ES1D

## Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free



## Mechanical Data

- Case: SMA molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

## Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	ES1A	ES1B	ES1C	ES1D	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	V
RMS Reverse Voltage	V <sub>RMS</sub>	35	70	105	140	V
DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	V
Maximum Average Forward Output Current	I <sub>F_AV</sub>	1.0				A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I <sub>FSM</sub>	30				A

## Thermal Characteristics

Parameter	Symbol	ES1A	ES1B	ES1C	ES1D	Unit
Typical Thermal Resistance *1	R <sub>θJA</sub>	70				°C/W
	R <sub>θJC</sub>	25				
	R <sub>θJL</sub>	30				
Operating Junction Temperature Range	T <sub>J</sub>	-55 ~ +150				°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150				°C

Note \*1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

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

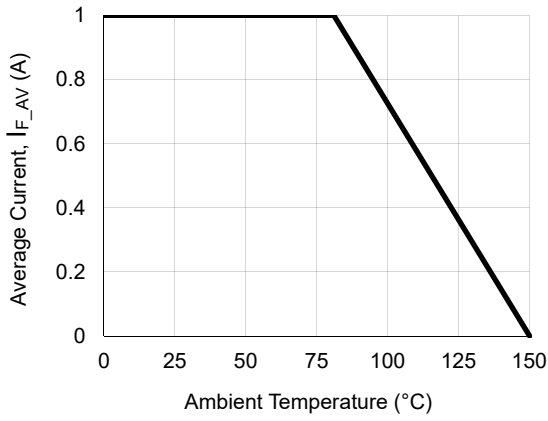
Parameter	Symbol	Test Condition	Typ.	Max.	Unit	
Maximum Instantaneous Forward Voltage	$V_F$	$I_F = 1.0\text{A}$	-	0.98	V	
Maximum Reverse Current	$I_R$	Rated	@ $T_A = 25^\circ\text{C}$	-	5.0	$\mu\text{A}$
		$V_R$	@ $T_A = 125^\circ\text{C}$	-	200	
Maximum Reverse Recovery Time	$t_{rr}$	$I_F = 0.5\text{A}$ , $I_{RM} = 1\text{A}$ , $I_{R(\text{REC})} = 0.25\text{A}$	-	35	ns	

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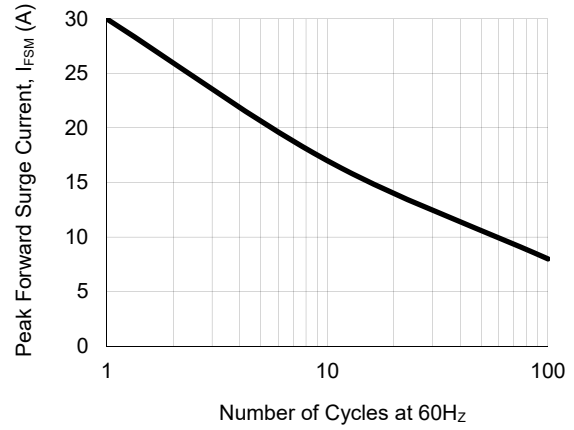
## ES1A - ES1D

### Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

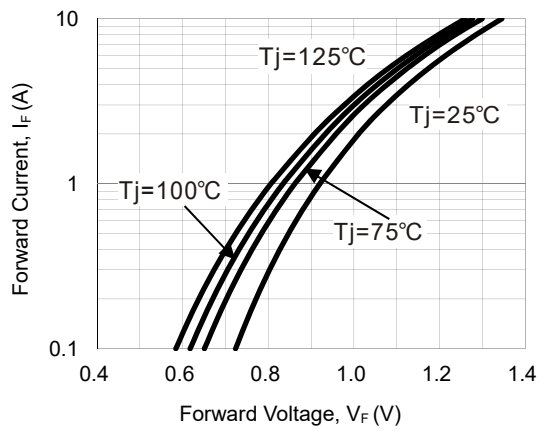
**Fig.1 Forward Current Derating Curve**



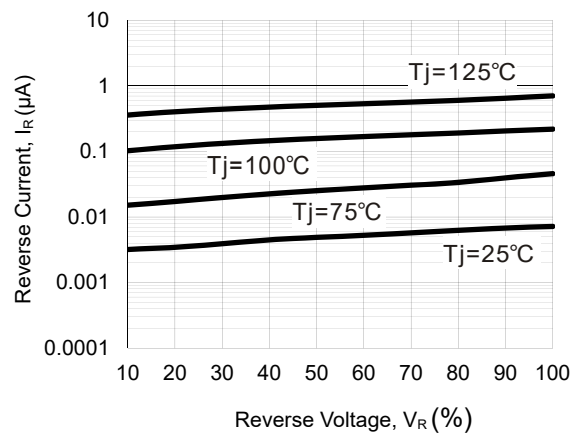
**Fig.2 Surge Current Derating Curve**



**Fig.3 Typical Forward Voltage Characteristics**



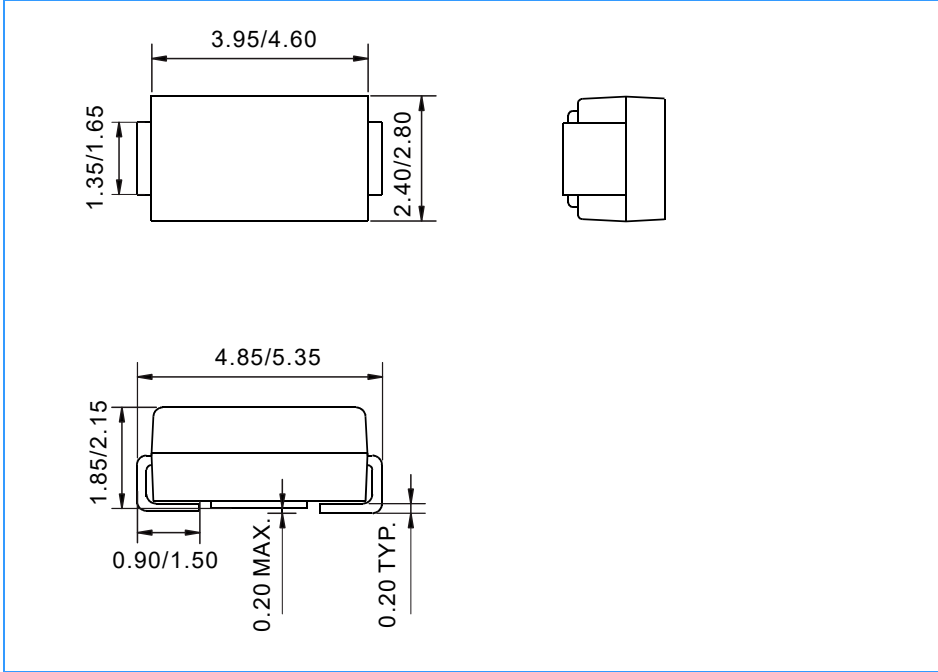
**Fig.4 Typical Reverse Characteristics**



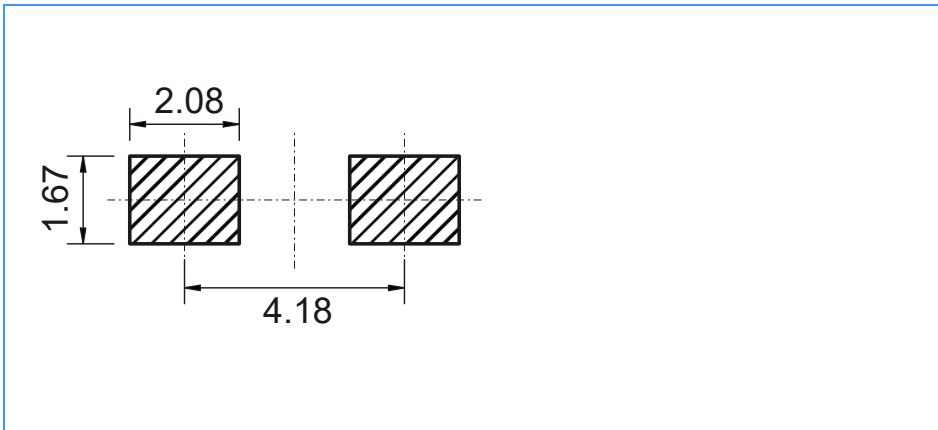
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## Package Outline Dimensions (Unit: mm)



## Mounting Pad Layout (Unit: mm)



## Ordering Information

Part Number	Marking	Package	Shipping Quantity
ES1A	ES1A	SMA	5000 / Tape & Reel
ES1B	ES1B	SMA	5000 / Tape & Reel
ES1C	ES1C	SMA	5000 / Tape & Reel
ES1D	ES1D	SMA	5000 / Tape & Reel