

## Super Fast Recovery Surface Mount Rectifiers

**Reverse Voltage: 50 to 600V**
**Forward Current: 1.0 Amp**

### Features

- Low profile package
- For surface mounted applications
- Glass passivated chip junction
- High forward surge capability
- Super fast reverse recovery time
- High temperature soldering guaranteed  
260 °C/10 seconds at terminals

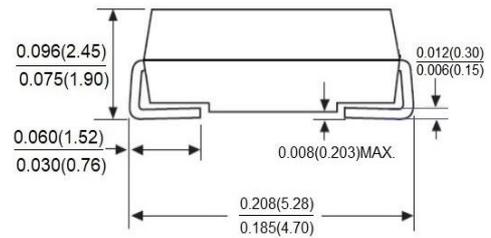
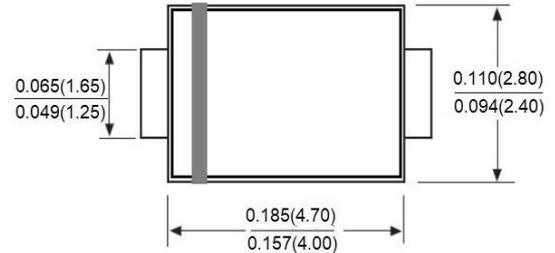
### Mechanical Data

- **Package:** DO-214AC (SMA)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per MIL-STD-750, Method 2026
- **Polarity:** Cathode line denotes the cathode end

### Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

### DO-214AC (SMA)

**ROHS COMPLIANT** **HALOGEN FREE**


Package Outline Dimensions in Inches (Millimeters)

### 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%.

Parameter&Test Conditions	SYM.	ES1AA	ES1BA	ES1CA	ES1DA	ES1FA	ES1GA	ES1JA	Unit
Device marking code		ES1A	ES1B	ES1C	ES1D	ES1F	ES1G	ES1J	
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	600	V
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	I <sub>O(AV)</sub>	1.0							A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load	I <sub>FSM</sub>	30							A
Maximum Thermal Resistance, Junction To Ambient (Note 1)	R <sub>θJA</sub>	80							°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150							°C

### Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

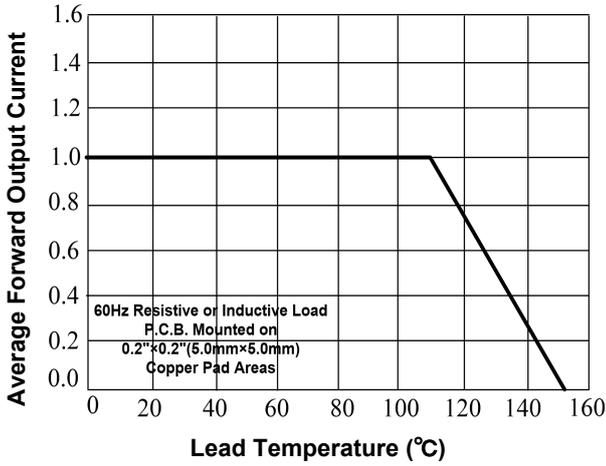
Parameter&Test Conditions	SYM.	ES1AA	ES1BA	ES1CA	ES1DA	ES1FA	ES1GA	ES1JA	Unit
Maximum Instantaneous Forward Voltage IFM =1A	V <sub>FM</sub>	0.95			1.3		1.7		V
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5							μA
		200							
Maximum reverse recovery time(Note 2)	T <sub>rr</sub>	35							ns
Typical junction capacitance(Note 3)	C <sub>J</sub>	18			12		8		pF

#### Notes:

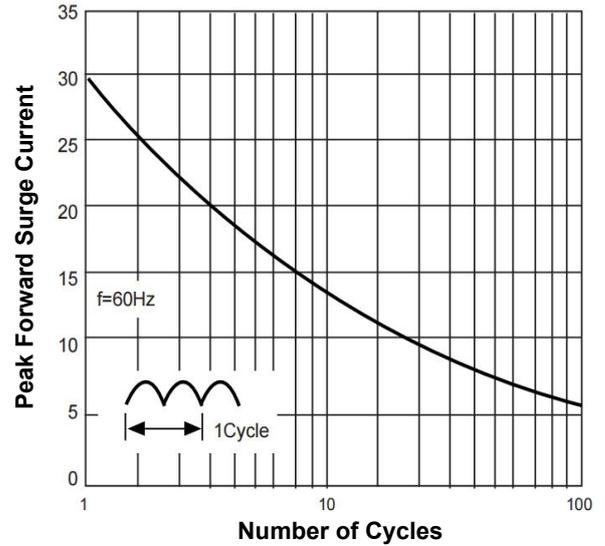
1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.
2. Reverse recovery time test condition: IF=0.5A IR=1.0A Irr=0.25A .
3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
4. The typical data above is for reference only.

**Rating and Characteristic Curves**

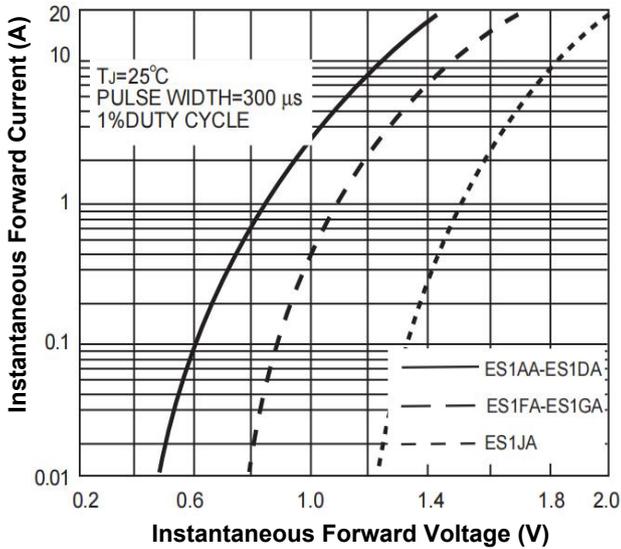
**FIG. 1- DERATING CURVE OUTPUT RECTIFIED**



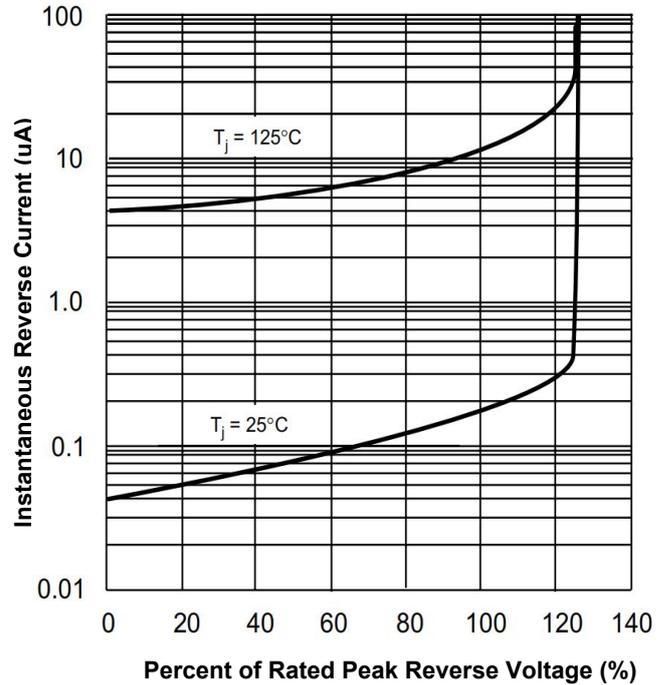
**FIG. 2- -MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG**



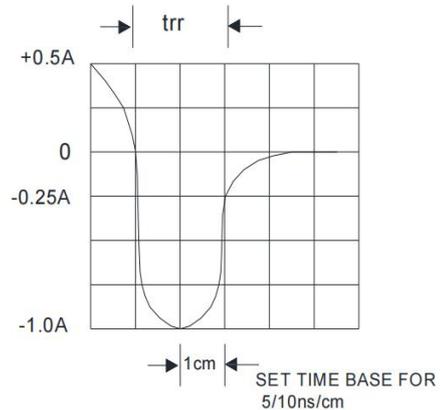
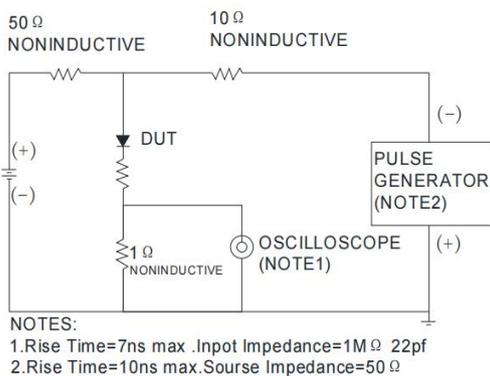
**FIG. 3- TYPICAL FORWARD VOLTAGE**



**FIG. 4- TYPICAL REVERSE LEAKAGE**

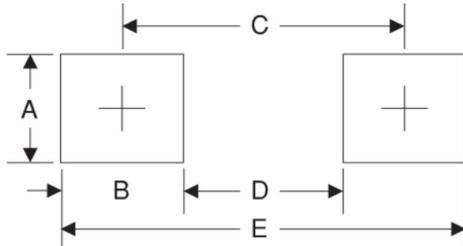


**FIG. 5- Diagram of circuit and Testing wave form of reverse recovery**



The curve above is for reference only.

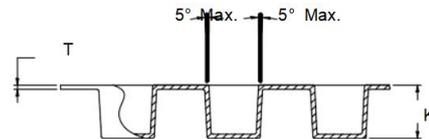
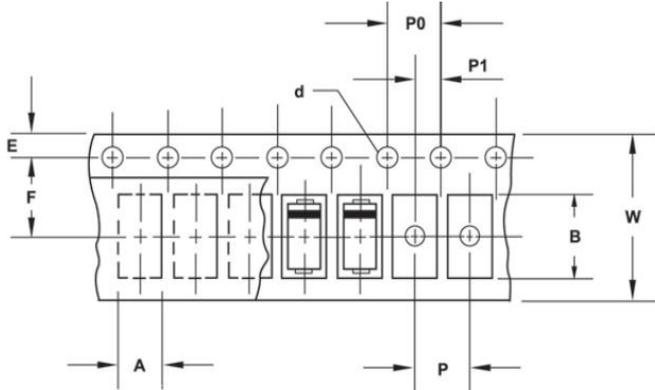
**Recommended Pad Layout**



SYMBOL	Millimeters
A	1.70
B	2.50
C	4.00
D	1.50
E	6.50

**Package Information**

**Carrier Dimension(mm)**



W	F	d	E
12.0	5.5	∅ 1.55	1.75
A	B	K	T
2.79	5.33	2.36	0.23
P0	P1	P	Tolerance
4.0	2.0	4.0	0.10

**Package Specifications**

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SMA	11'	278	5	290	10	400*310*310	100

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