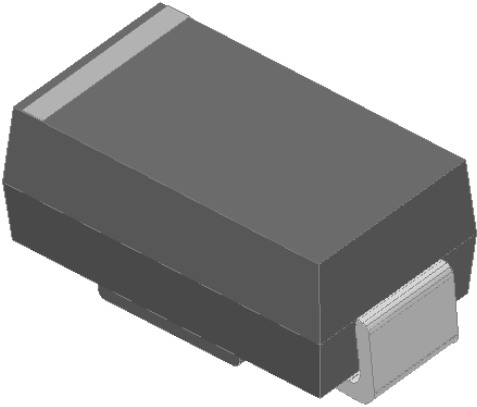


## Surface Mount Super Fast Recovery Rectifier

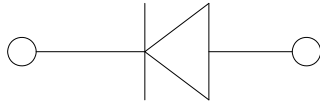


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

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



### 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 J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	ES1J
Device marking code			ES1J
Repetitive peak reverse voltage	$V_{RRM}$	V	600
Average rectified output current @ 60Hz sine wave, Resistance load, TL (FIG.1)	$I_O$	A	1.0
Surge(non-repetitive)forward current @ 60Hz Half-sine wave,1 cycle, $T_a=25^\circ\text{C}$	$I_{FSM}$	A	30
Storage temperature	$T_{stg}$	$^\circ\text{C}$	-55 ~ +150
Junction temperature	$T_j$	$^\circ\text{C}$	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	ES1J
Maximum instantaneous forward voltage drop per diode	$V_F$	V	$I_{FM}=1.0\text{A}$	1.7
Maximum reverse recovery time	$T_{RR}$	ns	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{tr}=0.25\text{A}$	35
Maximum DC reverse current at rated DC blocking voltage per diode @ $V_{RM}=V_{RRM}$	$I_{RRM}$	$\mu\text{A}$	$T_a=25^\circ\text{C}$	5
			$T_a=125^\circ\text{C}$	100



# ES1J

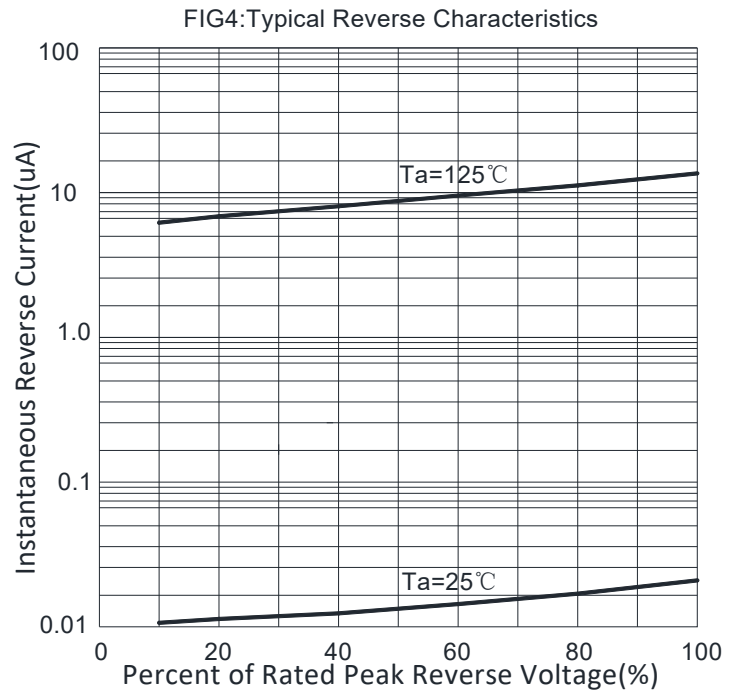
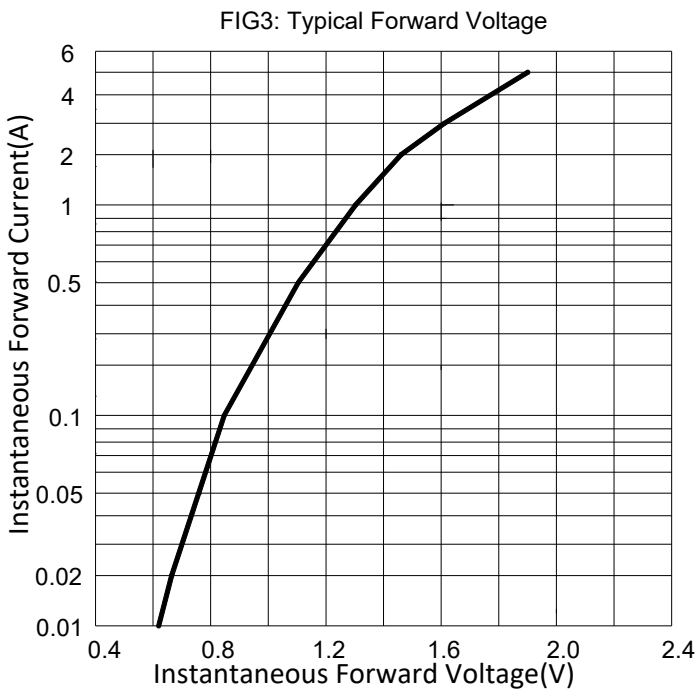
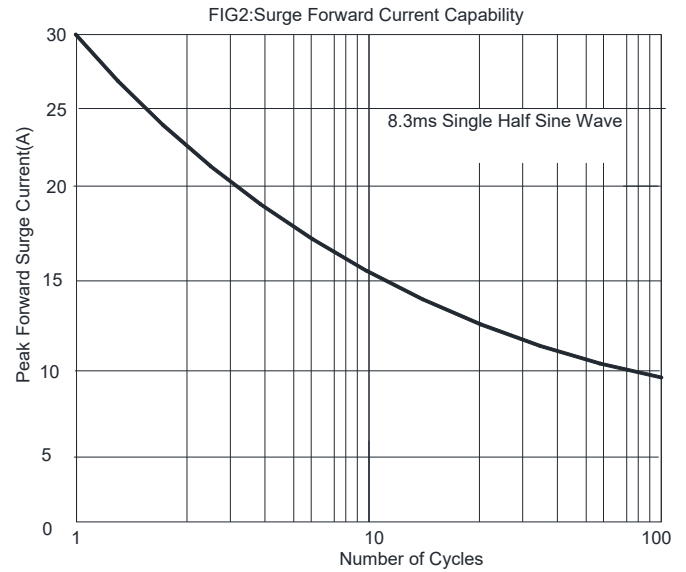
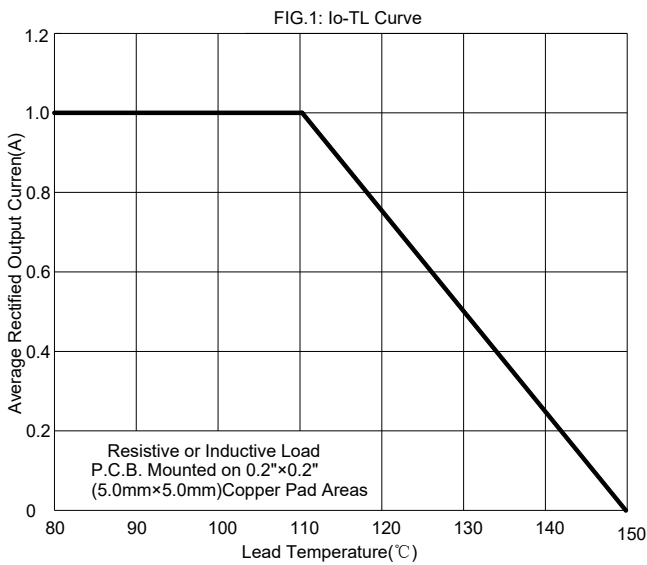
## ■ Thermal Characteristics ( $T_A=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	ES1J
Thermal Resistance	$R_{\theta J-A}$	$^\circ\text{C/W}$	65 <sup>1)</sup>
	$R_{\theta J-L}$		20 <sup>1)</sup>
	$R_{\theta J-C}$		25 <sup>1)</sup>

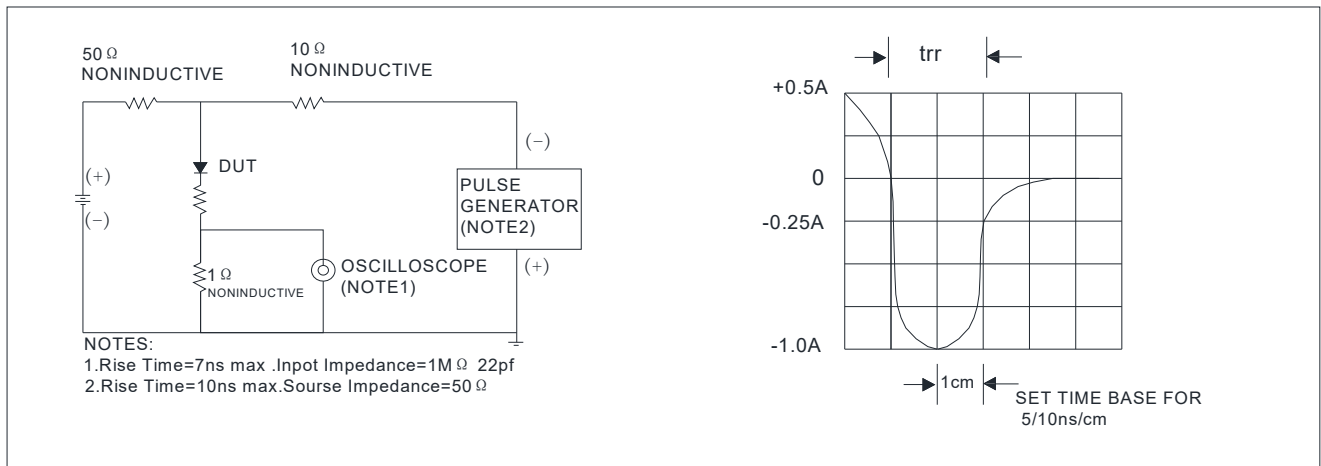
Note

(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

## ■ Characteristics (Typical)



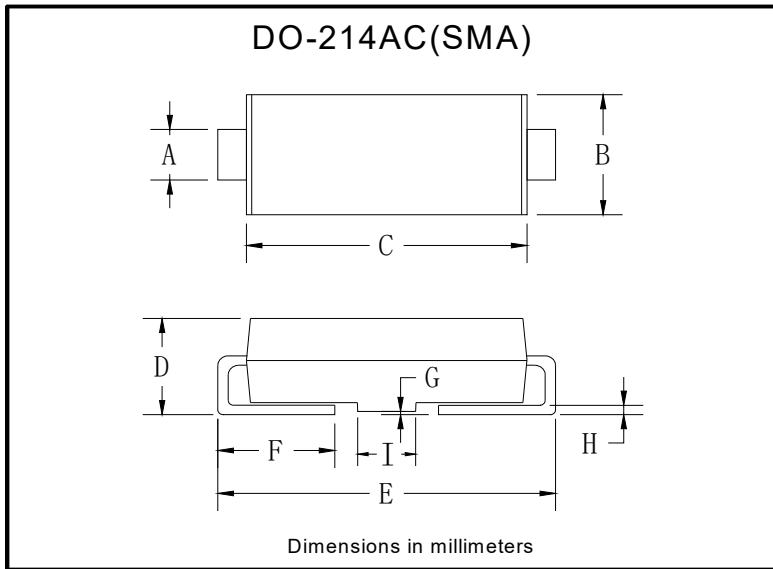
**FIG.5: Diagram of circuit and Testing wave form of reverse recovery time**



### Ordering Information (Example)

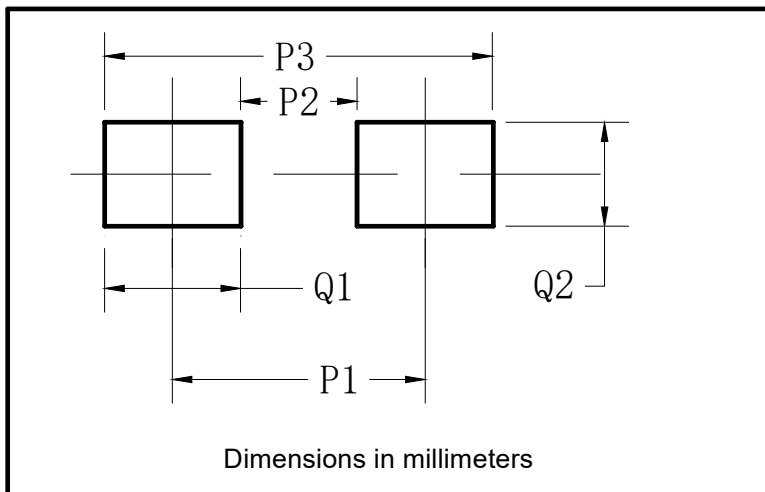
PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ES1J	F1	Approximate 0.059	5000	/	80000	13" reel
ES1J	F2	Approximate 0.059	7500	/	120000	13" reel
ES1J	F3	Approximate 0.059	7500	/	60000	13" reel
ES1J	F4	Approximate 0.059	1800	7200	57600	7" reel
ES1J	F5	Approximate 0.059	2000	8000	64000	7" reel
ES1J	F6	Approximate 0.059	5000	/	100000	13" reel

## ■ Outline Dimensions



DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.70	2.10

## ■ Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



## ES1J

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