



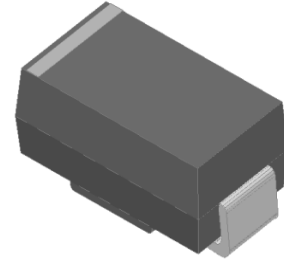
ES1A THRU ES1J

1.0AMP Surface Mount Super Fast Recovery Rectifier

1. Features

- Glass passivated chip junction
- For surface mounted application.
- Low forward voltage drop.
- High current capability.
- Super Fast reverse recovery time.
- High reliability.
- Meets MSL level 1, per J-STD-020.

SMA(DO-214AC)



Cathode  Anode

2. Mechanical Data

- Case:Molded Plastic,SMA(DO-214AC) .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:marked on body.

3. Maximum Ratings and Electrical Characteristics

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	ES1A	ES1B	ES1D	ES1G	ES1J	UNIT	
Maximum Recurrent Peak Reverse Voltage	VRRM	50	100	200	400	600	V	
Maximum RMS Voltage	V _{RMS}	35	70	140	280	420	V	
Maximum DC Blocking Voltage	V _{DC}	50	100	200	400	600	V	
Average Rectified Output Current @T _L =100°C	I _{F(AV)}	1.0						A
Peak Forward Surge Current 8.3ms @T _j =25°C	I _{FSM}	35						A
Single half sine-wave superimposed @T _j =125°C on rated load (JEDEC Method)		28						
I ² t Rating for Fusing (t < 8.3ms)	I ² t	5.08						A ² S
Maximum Instantaneous Forward Voltage @IF=1A	V _{FM}	0.95			1.3	1.7		V
Maximum DC reverse current @T _j =25°C at rated DC blocking voltage @T _j =125°C	I _R	5.0						uA
		100						
Maximum Reverse Recovery Time (Note 1)	T _{RR}	35						ns
Typical Junction Capacitance (Note 2)	C _j	20			7			pF
Typical Thermal Resistance (Note 3)	R _{θJA}	65						°C/W
	R _{θJL}	25						
	R _{θJC}	20						
Operating Temperature Range	T _j	-55 to+150						°C
Storage Temperature Range	T _{STG}	-55 to+150						°C

Note:

1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.
2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C
3. 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.



4. Rating And Characteristic Curves

Fig. 1 Forward Current Derating Curve

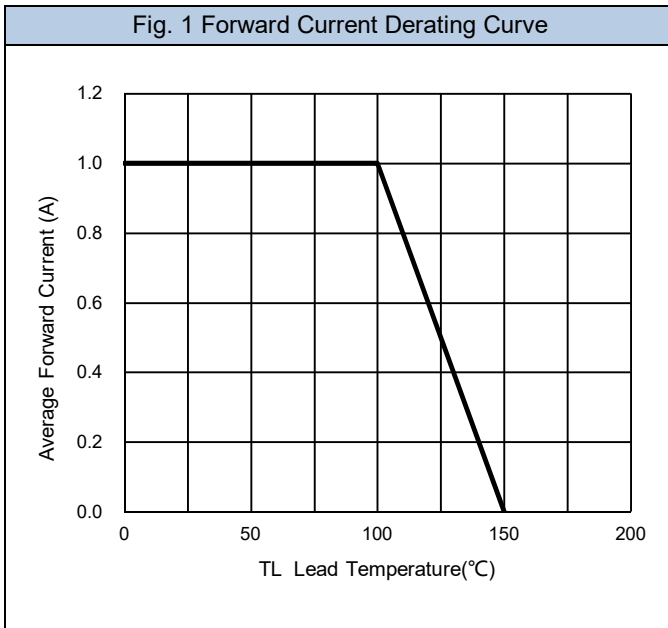


Fig. 2 Typical Forward Characteristics

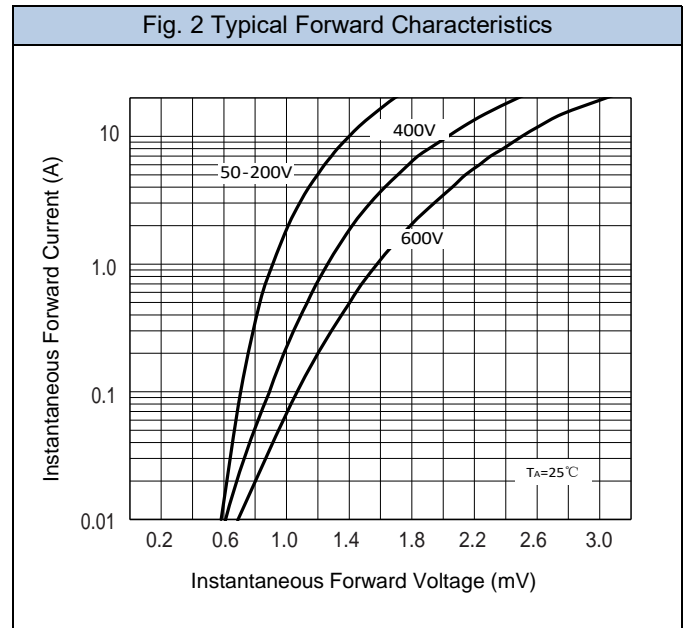


Fig. 3 Forward Surge Current Capability

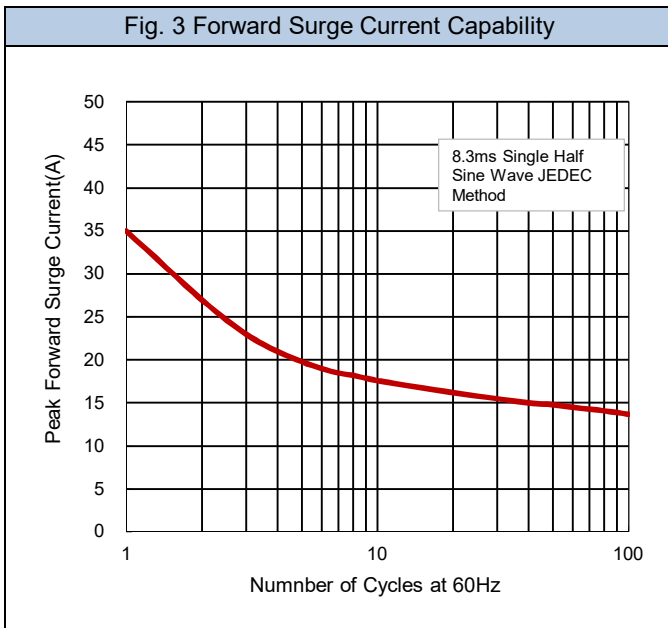
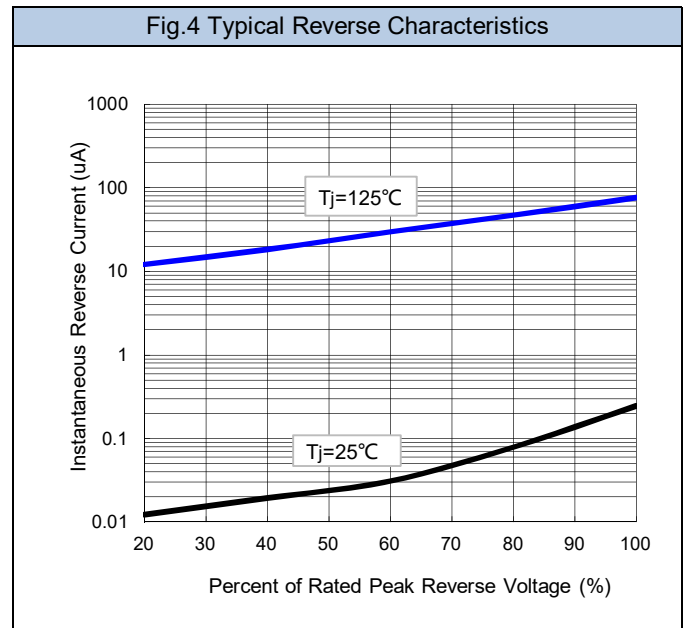


Fig.4 Typical Reverse Characteristics

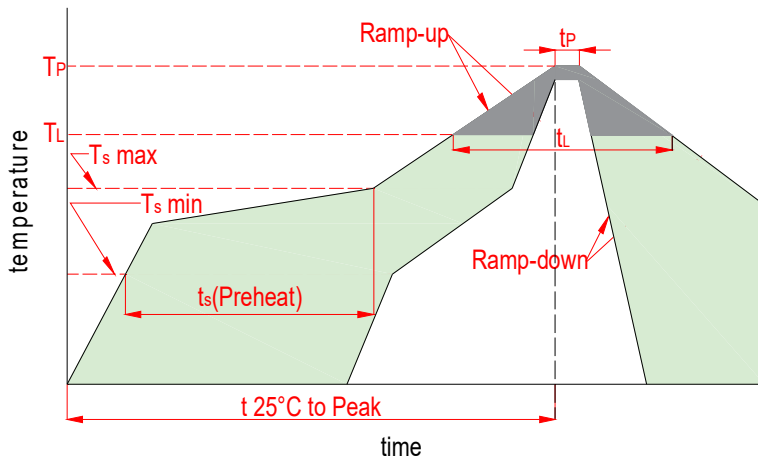




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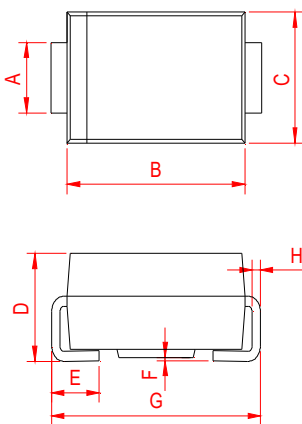
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5. Soldering Parameters



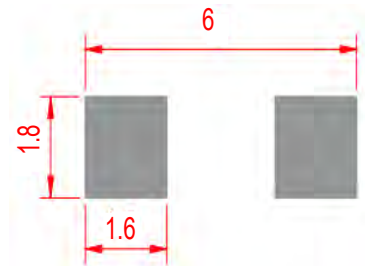
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150°C
	Temp. max(T_s (min))	200°C
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3°C/s max
T_s (max) to T_L -Ramp-up Rate		3°C/s max
Reflow	Temp.(T_L)(Liquidus)	217°C
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_p)		260 ^{+0/-5} °C
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6°C/s max
Time 25°C to peak Tempe.(T_p)		8 minutes max
Do not exceed		260°C

6. Dimensions

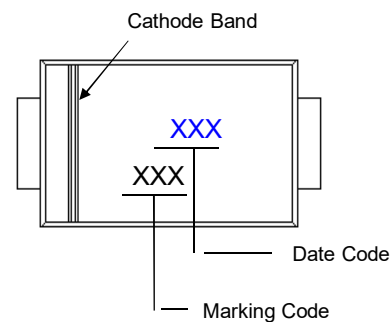
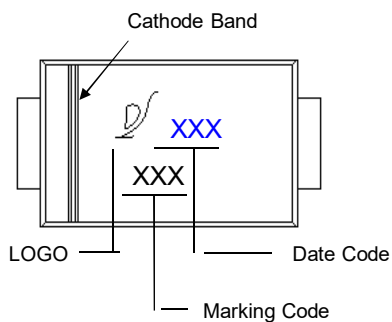


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.051	0.067	1.30	1.70
B	0.157	0.181	4.00	4.60
C	0.094	0.110	2.40	2.80
D	0.079	0.103	2.00	2.62
E	0.030	0.060	0.76	1.52
F	0.002	0.008	0.05	0.20
G	0.189	0.208	4.80	5.28
H	0.006	0.012	0.15	0.31

Mounting PAD Layout



7. Part Marking System



8. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)
		mm	inch	
SMA(DO-214AC)	12	330	13	5000
SMA(DO-214AC)	12	330	13	7500



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