

## Features

- Halogen Free. "Green" Device (Note 1)
- Super Fast Recovery Time
- Glass Passivated Chip Junction
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2)("P" Suffix Designates RoHS Compliant. See Ordering Information)

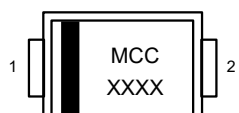

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value					Unit
		ES1A-L	ES1B-L	ES1D-L	ES1G-L	ES1J-L	
Peak Repetitive Reverse Voltage	$V_{RRM}$						V
Working Peak Reverse Voltage	$V_{RWM}$	50	100	200	400	600	
DC Blocking Voltage	$V_R$						
RMS Reverse Voltage	$V_{RMS}$	35	70	140	280	420	V
Average Rectified Forward Current @ $T_L=130^\circ\text{C}$	$I_{F(AV)}$	1					A
Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave	$I_{FSM}$	30					A
Non-Repetitive Peak Surge Current @1ms Half Sine Wave		60					
Current Squared Time @1ms $\leq t \leq$ 8.3ms	$I^2t$	3.735					A <sup>2</sup> s

## Marking code

Part Number	Marking Code
ES1A-L	ES1A
ES1B-L	ES1B
ES1D-L	ES1D
ES1G-L	ES1G
ES1J-L	ES1J

## Internal Structure

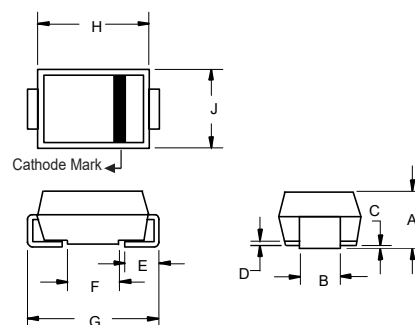
Pin	Description	Simplified outline	Graphic symbol
1	Cathode	 XXXX = Marking code	
2	Anode		

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High temperature solder exemption applied, see EU directive annex 7a.

# 1 Amp Super Fast Recovery Rectifier 50 to 600 Volts

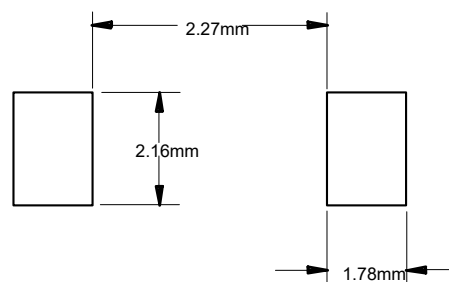
## SMA (DO-214AC)



## DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.075	0.096	1.90	2.44	
B	0.050	0.064	1.27	1.63	
C	0.002	0.008	0.051	0.203	
D	---	0.020	---	0.51	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.189	0.220	4.80	5.59	
H	0.157	0.187	4.00	4.75	
J	0.090	0.115	2.25	2.92	

## SUGGESTED SOLDER PAD LAYOUT



### Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$T_J$	Operating Junction Temperature Range		-65		175	°C
$T_{stg}$	Storage Temperature Range		-65		175	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Lead	Note 1		25		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		80		°C/W

Note:

1. Mounted on P.C.B. with 5mm\*5mm copper pad areas.

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage ES1A-L~ES1D-L ES1G-L ES1J-L	$V_F$	$I_F=1A; T_J=25^\circ C$			0.95 1.25 1.70	V
Reverse Current	$I_R$	at Rated $V_R; T_J=25^\circ C$ at Rated $V_R; T_J=125^\circ C$			1 80	$\mu A$
Reverse Recovery Time	$t_{rr}$	$I_F=0.5A; I_R=1.0A;$ $I_{rr}=0.25A; T_J=25^\circ C$			35	ns
Junction Capacitance ES1A-L~ES1D-L ES1G-L ES1J-L	$C_J$	$V_R=4V; f=1MHz; T_J=25^\circ C$		20 12 8		pF

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

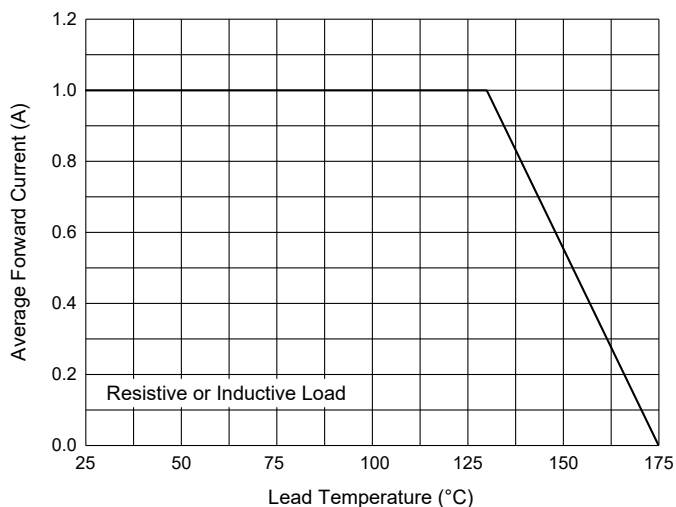


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

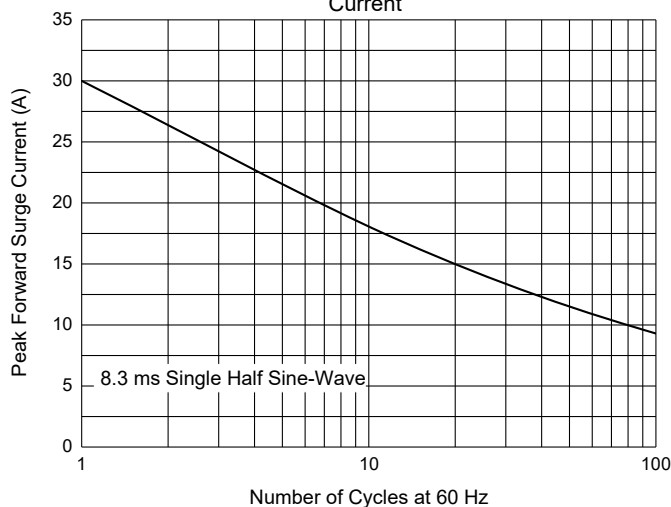


Fig. 3 - Typical Forward Characteristics

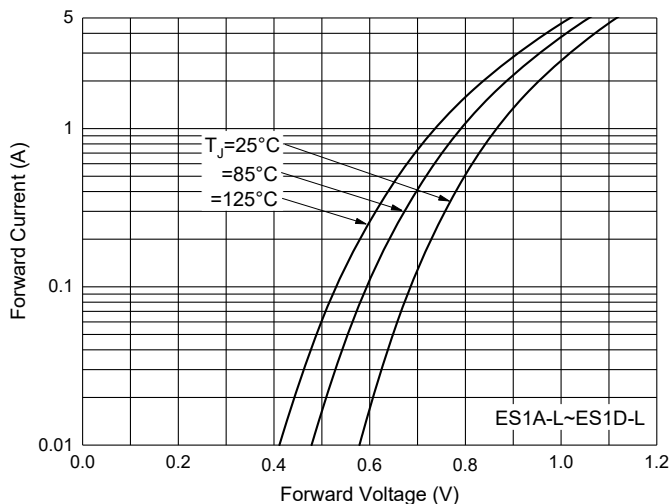


Fig. 4 - Typical Forward Characteristics

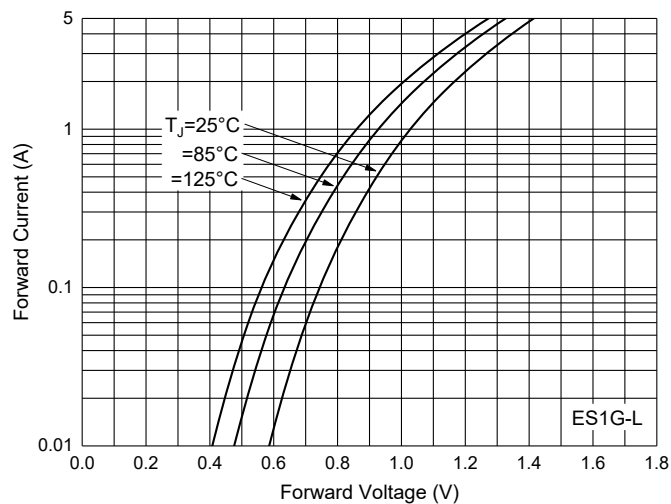


Fig. 5 - Typical Forward Characteristics

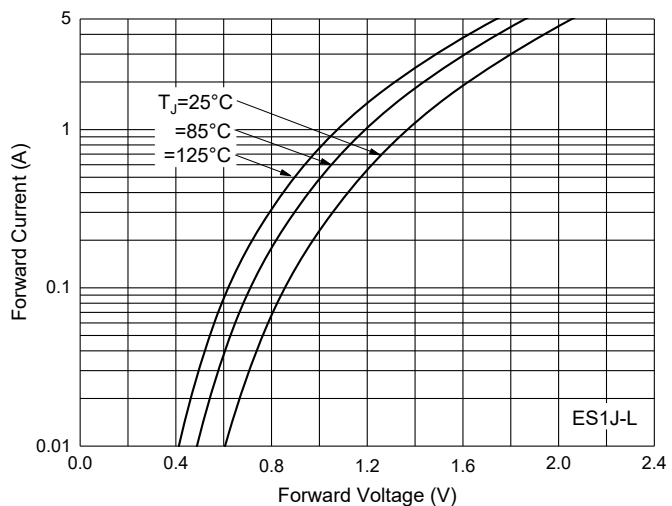
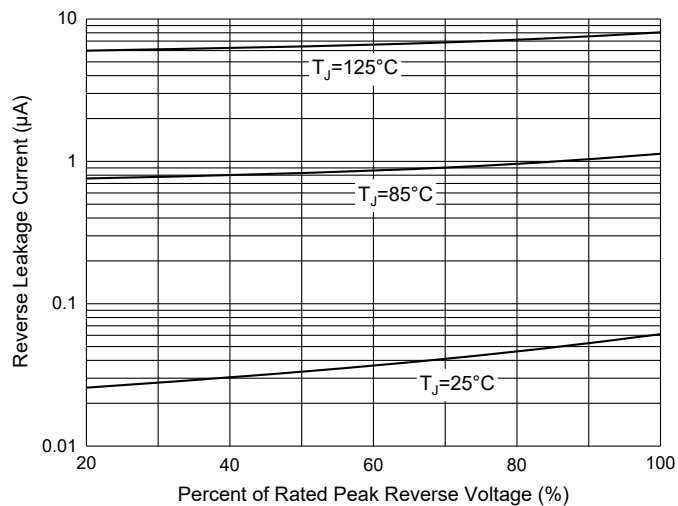
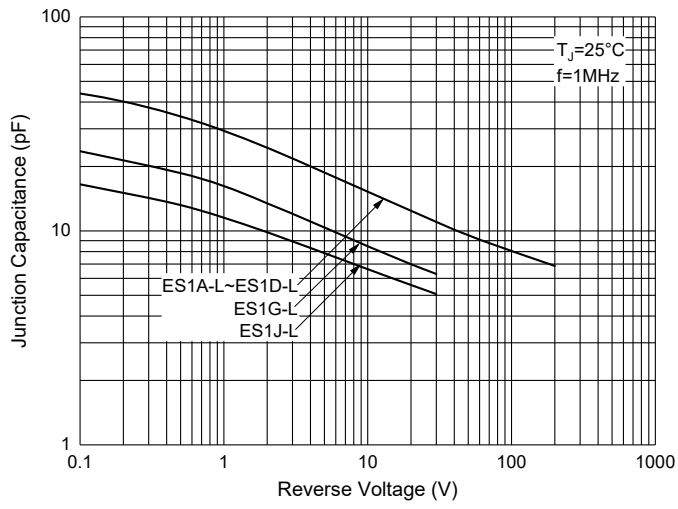


Fig. 6 - Typical Reverse Leakage Characteristics



## Curve Characteristics

Fig. 7 - Typical Capacitance Characteristics



## Ordering Information

Device	Packing
ES1A-LTP ~ ES1J-LTP	Tape&Reel:5Kpcs/Reel

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