

1.0Amp Super Fast Recovery Surface Mounted Rectifiers

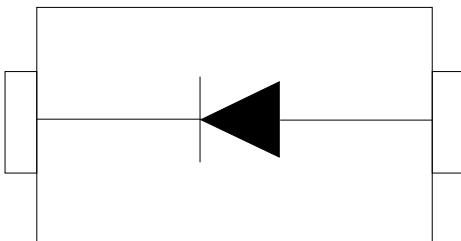
Description

General Application Super Fast Recovery Surface Mounted rectifier, encapsulated in a SMA Surface-Mounted Device (SMD) plastic package.

Features

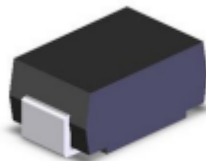
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Idea for printed circuit board
- Glass passivated junction chip
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed 260 °C/10 seconds at terminals

Dimensions and Pin Configuration



Graphic symbol

Package



SMA (Top View)

Mechanical Characteristics

- Case: JEDEC DO-214AC molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Case Material: “Green” Molding Compound

Applications

- For use in high frequency rectification of power Supplies, inverters, converters, and freewheeling Diodes for consumer and telecommunication

Ordering Informatio

Part Number	Shipping	Reel Size
ES1AA	5000/Tape & Reel	11 inch
ES1BA	5000/Tape & Reel	11 inch
ES1CA	5000/Tape & Reel	11 inch
ES1DA	5000/Tape & Reel	11 inch
ES1FA	5000/Tape & Reel	11 inch
ES1GA	5000/Tape & Reel	11 inch
ES1JA	5000/Tape & Reel	11 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%

Items	Symbol	ES1AA	ES1BA	ES1CA	ES1DA	ES1FA	ES1GA	ES1JA	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current at $T_L=100^{\circ}\text{C}$	$I_{(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30.0							A
Typical thermal resistance	R_{QJA}	80.0							$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	$-55 \sim +150$							$^{\circ}\text{C}$
Storage temperature range	T_{STG}	$-55 \sim +150$							$^{\circ}\text{C}$

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

Items	Test conditions	Symbol	ES1AA~ES1DA	ES1FA~ES1GA	ES1JA	UNIT
Maximum instantaneous forward voltage	I _F =1.0A	V _F	1.0	1.3	1.7	V
Maximum DC reverse current	T _A =25℃	I _R	2			uA
at rated DC blocking voltage	T _A =125℃		200			
Maxinum reverse recovery time(Note 1)		T _{rr}	35			ns
Typical junction capacitance(Note 2)		C _j	18			pF

Note:

- Reverse recovery time test condition: $I_F=0.5\text{A}$ $I_R=1.0\text{A}$ $I_{rr}=0.25\text{A}$
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

FIG.1-DERATING CURVE OUTPUT RECTIFIED CURRENT

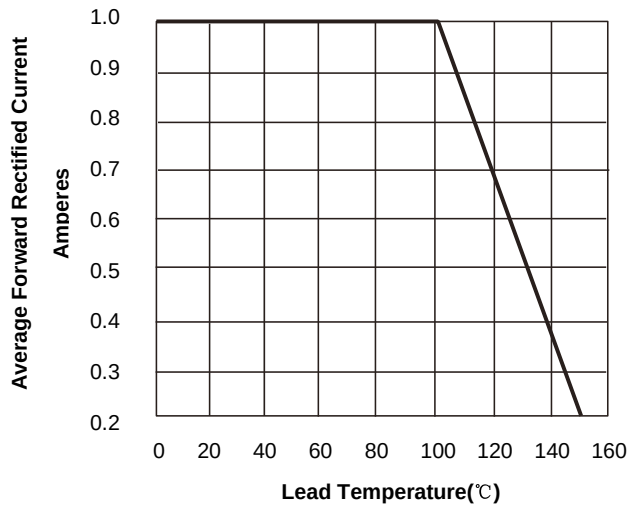


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

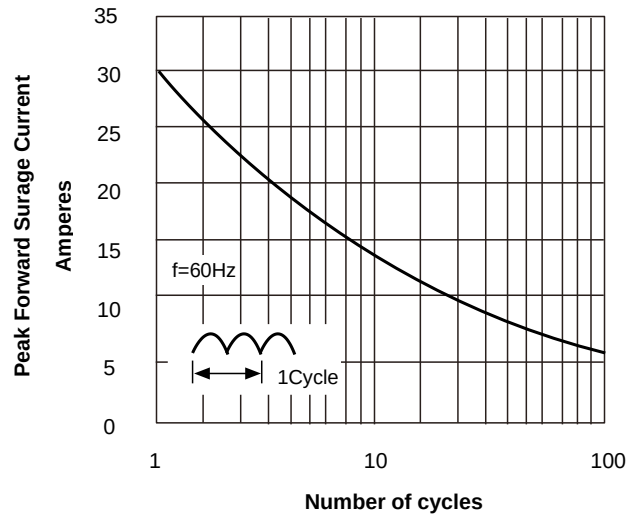


FIG.3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

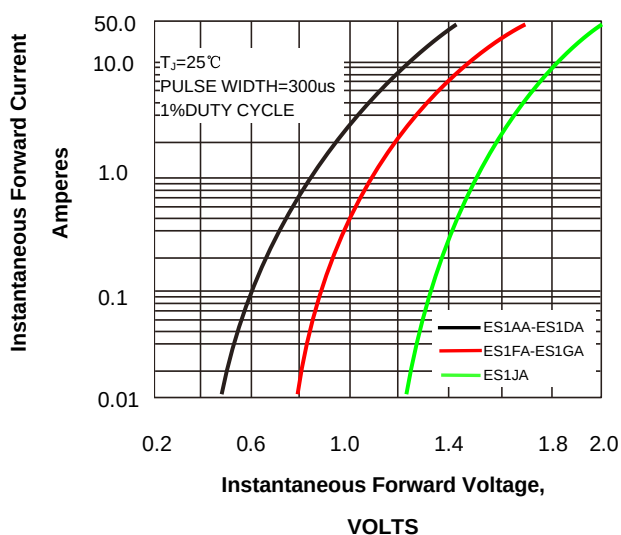
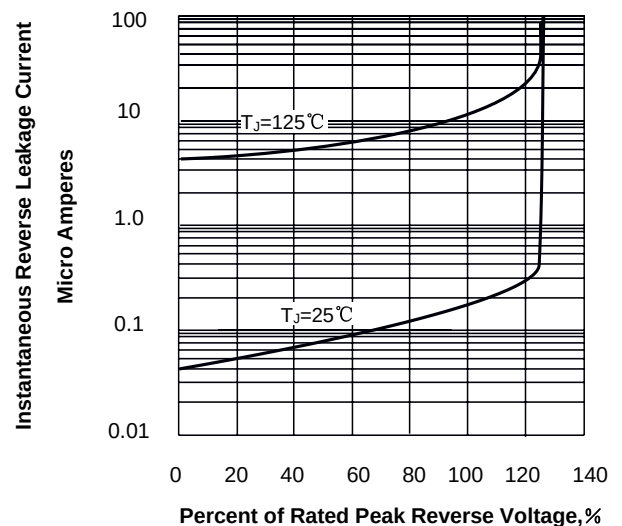
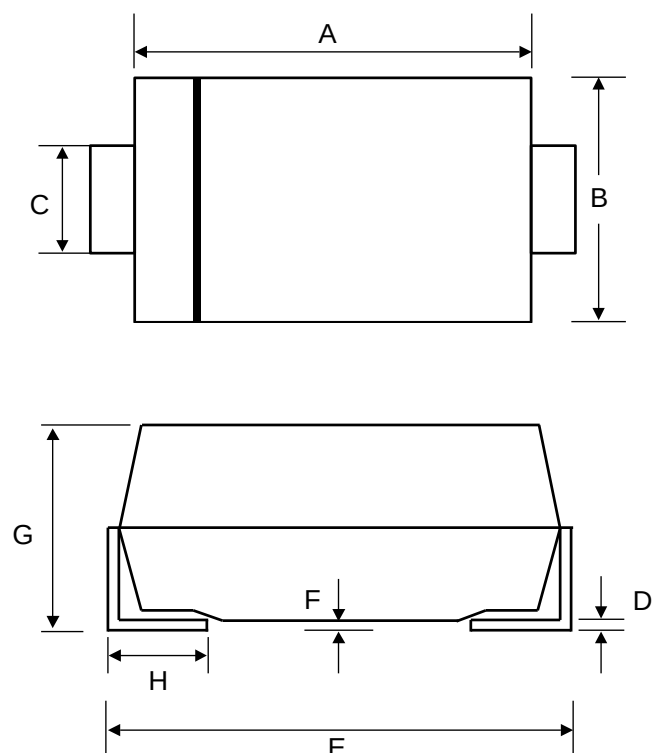


FIG.4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

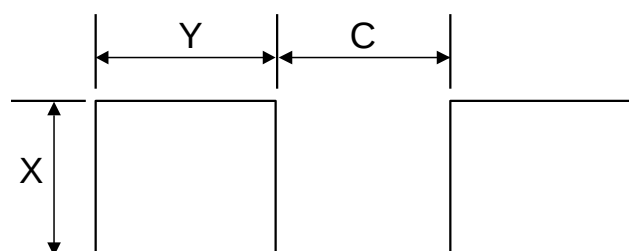


SMA Package Outline Drawing



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.90	4.50	0.153	0.177
B	2.40	2.80	0.094	0.110
C	1.30	1.70	0.051	0.067
D	0.152	0.305	0.006	0.012
E	4.80	5.30	0.188	0.208
F	----	0.203	----	0.008
G	2.00	2.50	0.078	0.098
H	0.76	1.52	0.030	0.060

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.68	0.066
Y	1.52	0.060
C	2.41	0.095

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