

# ES1A THRU ES1M

## Super Fast Surface Mount Rectifiers

Voltage Range  
50 to 1000 Volts  
Forward Current  
1.0 Amperes

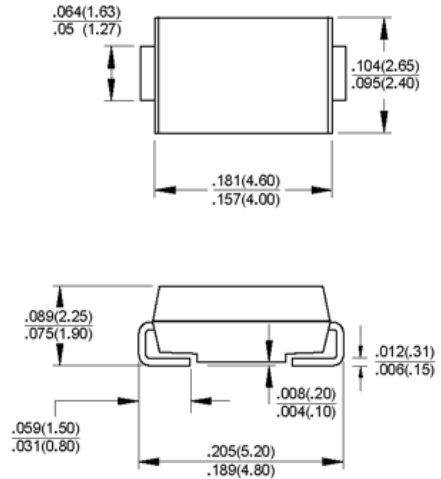
### Features

- For surface mounted application
- Low profile package
- Built-in strain relief, Ideal for automated placement
- Easy pick and place
- Superfast recovery time for high efficiency
- Glass passivated chip junction
- High temperature soldering: 250°C/10 seconds at terminals
- Plastic material used carries Underwriters Laboratory
- Classification 94V-O

### Mechanical Data

- Cases: Molded plastic
- Terminals: Solder plated
- Polarity: Indicated by cathode band
- Weight: 0.002 ounce, 0.064 gram

### DO-214AC (SMA)



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Ratings 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	Symbols	ES 1A	ES 1B	ES 1C	ES 1D	ES 1F	ES 1G	ES 1J	ES 1K	ES 1M	Units	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	600	800	1000	Volts	
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	560	700	Volts	
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	600	800	1000	Volts	
Maximum average forward rectified current See Fig. 1	$I_{(AV)}$	1.0									Amp	
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0									Amps	
Maximum instantaneous forward voltage @ 1.0A	$V_F$	0.95			1.3			1.7			Volts	
Maximum DC reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	5.0					100					$\mu\text{A}$ $\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	35									nS	
Typical junction capacitance (Note 2)	$C_J$	10					8					pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	85					35					$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	-55 to +150									$^\circ\text{C}$	
Storage temperature range	$T_{STG}$	-55 to +150									$^\circ\text{C}$	

- Notes:**
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts
  3. P.C.B. Mounted on 0.2 x 0.2" (5.0 x 5.0mm) Copper Pad Area.

# RATING AND CHARACTERISTIC CURVES ES1A THRU ES1M

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

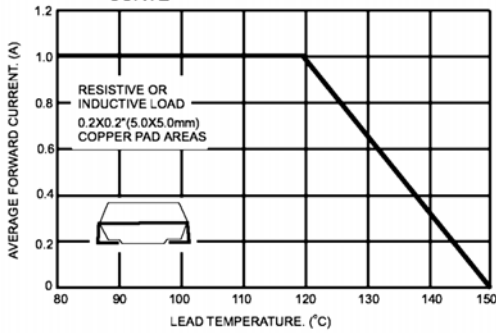


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

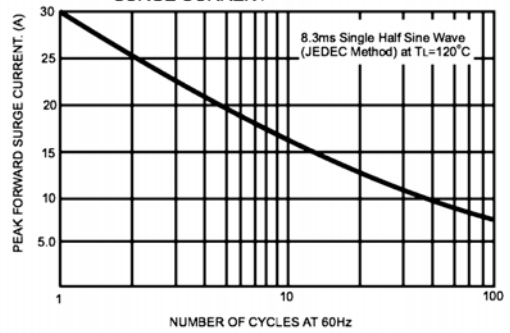


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

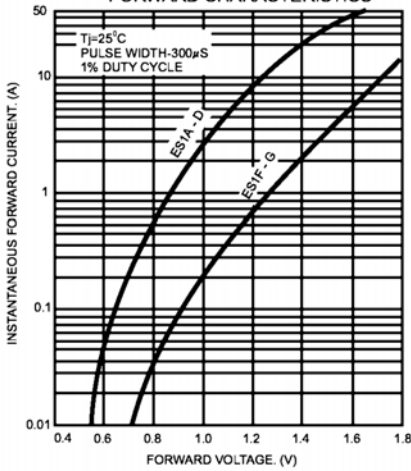


FIG.4- TYPICAL REVERSE CHARACTERISTICS

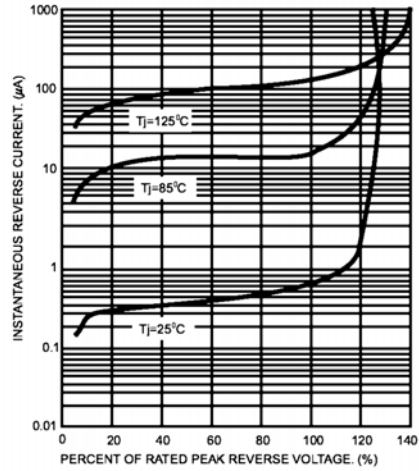


FIG.5- TYPICAL JUNCTION CAPACITANCE

