



ES1A THRU ES1K

SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

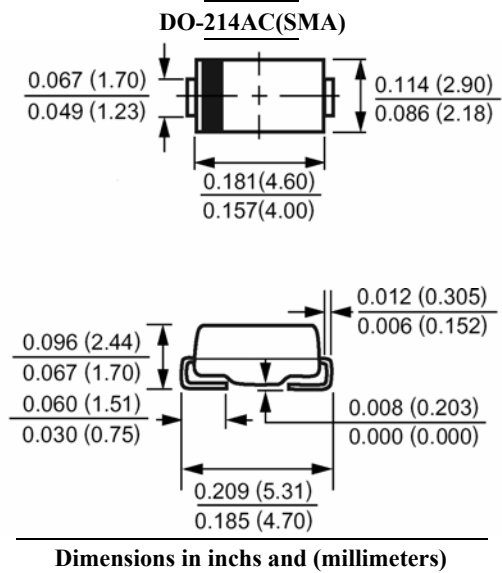
REVERSE VOLTAGE: 50 to 800 VOLTS
FORWARD CURRENT: 1.0 AMPERE

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass Passivated Die Construction
- For surface mounted applications
- Low profile package
- Easy pick and place
- Built-in strain relief
- Superfast recovery times for high efficiency
- Suffix "H" indicates Halogen-free parts, ex. ES1AH

MECHANICAL DATA

Case : Molded plastic, DO-214AC(SMA)
 Terminals: Solder plated, solderable per MIL-STD-750, method 2026 guaranteed
 Polarity : Color band denotes cathode end



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	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	ES1K	Units	
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	800	Volts	
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	560	Volts	
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	800	Volts	
Maximum Average Forward Rectified Current at $T_L=100^\circ\text{C}$	$I_{(AV)}$	1.0								Amp	
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30								Amp	
Maximum Forward Voltage at 1.0A	V_F	0.95			1.25		1.70	2.20		Volts	
Maximum Reverse Current at $T_j=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_j=100^\circ\text{C}$	I_R	5.0				100					uAmp
Typical Junction Capacitance (Note 1)	C_j	16				18					pF
Typical Thermal Resistance (Note 2)	$R_{\theta JL}$	35								°C/W	
Maximum Reverse Recovery Time (Note 3)	T_{RR}	35								nS	
Operating Junction Temperature Range	T_j	-65 to +150								°C	
Storage Temperature Range	T_{stg}	-65 to +150								°C	

NOTES:

- 1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
- 2- Thermal resistance from junction to lead mounted on P.C.B. with 0.2 x 0.2" (5.0 x 5.0mm) copper pad areas
- 3- Reverse Recovery Test Conditions: $I_F=5A$, $I_R=1A$, $I_{RR}=25A$.



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RATINGS AND CHARACTERISTIC CURVES

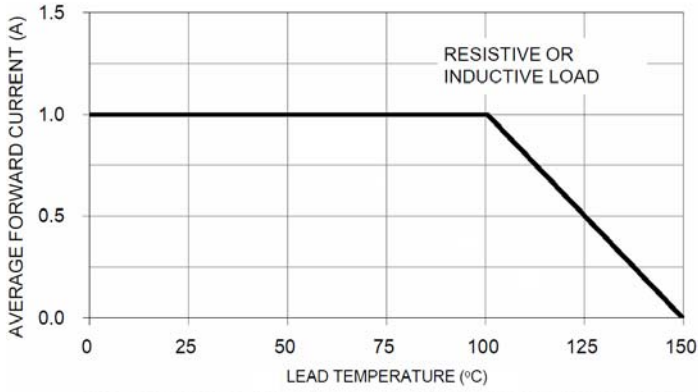


FIG. 1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

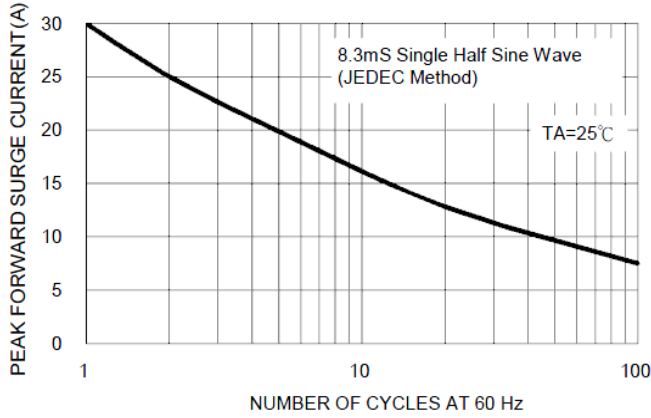


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD PEAK SURGE CURRENT

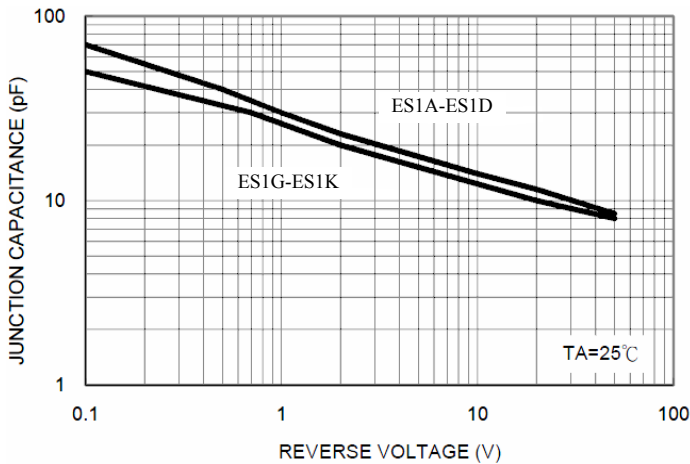


FIG. 4- TYPICAL JUNCTION CAPACITANCE

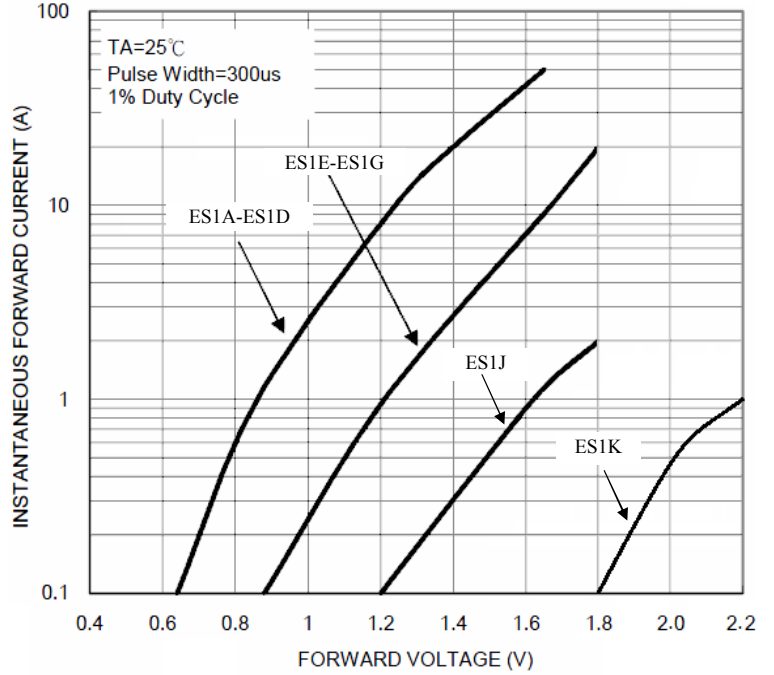


FIG. 2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

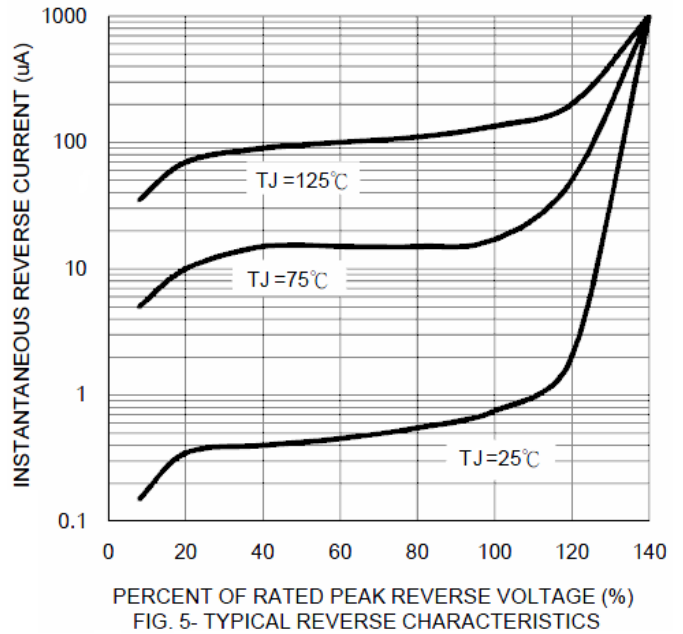


FIG. 5- TYPICAL REVERSE CHARACTERISTICS