



SURFACE MOUNT GLASS PASSIVATED RECTIFIER

ES1A THRU ES1J

**VOLTAGE RANGE
CURRENT**

**50 to 600 Volts
1.0 Ampere**

FEATURES

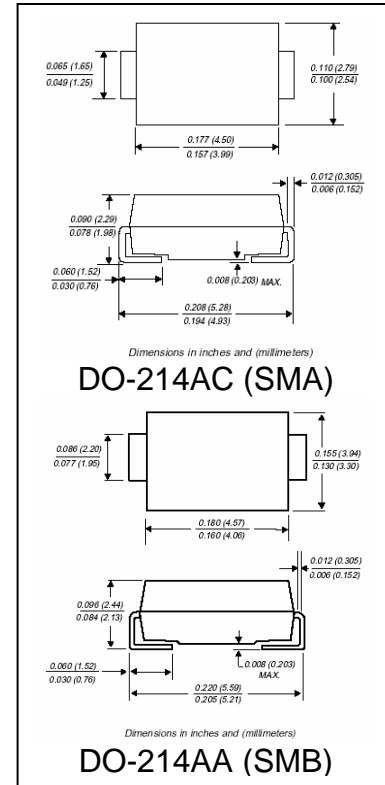
- Plastic package has UL flammability classification 94V-0
- Glass passivated chip junction
- Built in strain relief
- Super Fast switching speed for high efficiency
- High temperature Soldering guaranteed: 260 °C / 10 seconds
- Also available in the SMB package, add suffix B, i.e. ES1AB

MECHANICAL DATA

- Case: Transfer molded plastic
- Terminals: Solder plated, solderable per MIL-STD 750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.002 ounce, 0.064 gram – DO-214C (SMA)
0.003 ounce, 0.093 gram – DO-214AA (SMB)

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%



	SYMBOLS	ES1A	ES1B	ES1C	ES1D	ES1F	ES1G	ES1J	UNIT	
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	Volts	
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	Volts	
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	Volts	
Maximum Average Forward Rectified Current, At $T_J = 100^\circ\text{C}$ (Note 1)	$I_{(AV)}$	1.0							Amps	
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	30							Amps	
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	0.95			1.25		1.7		Volts	
Maximum DC Reverse Current at Rated $T_A = 25^\circ\text{C}$	I_R	5.0							μA	
DC Blocking Voltage per element $T_A = 125^\circ\text{C}$		100								
Maximum Reverse Recovery Time Test conditions $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RR} = 0.25\text{A}$	t_{rr}	35							nS	
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	C_J	10				8				pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	88 (SMA) 75 (SMB)							$^\circ\text{C}/\text{W}$	
	$R_{\theta JL}$	28 (SAM) 17 (SMB)								
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. Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.2" x 0.2" (5.0 x 5.0mm) copper pad areas.



RATINGS AND CHARACTERISTIC CURVES ES1A THRU ES1J

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

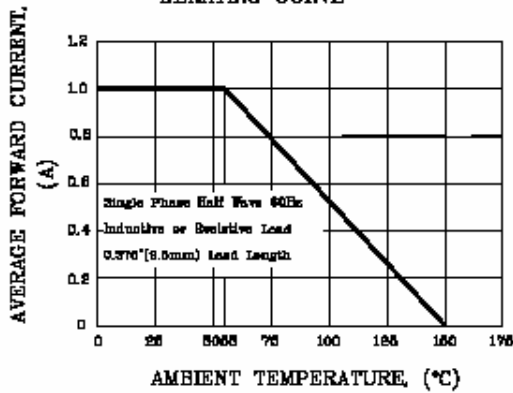


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

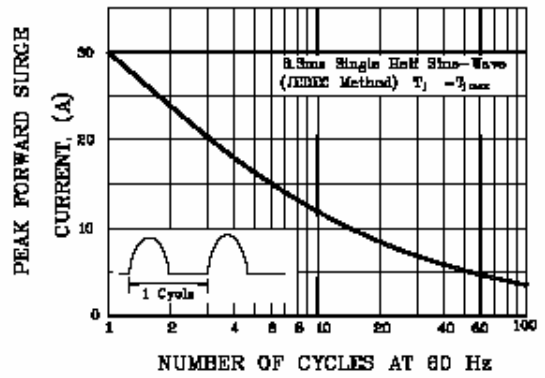


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

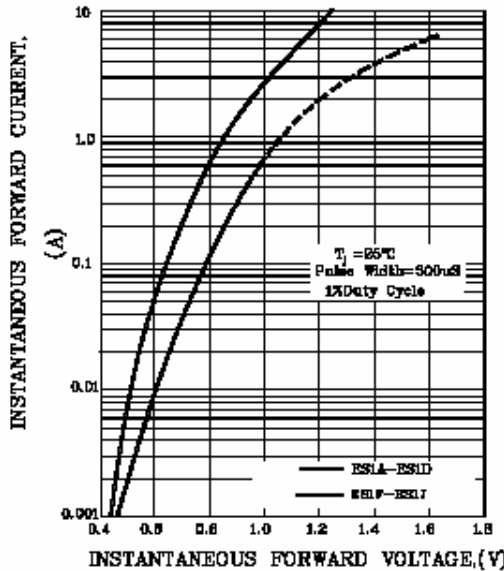


FIG.4-TYPICAL REVERSE CHARACTERISTICS

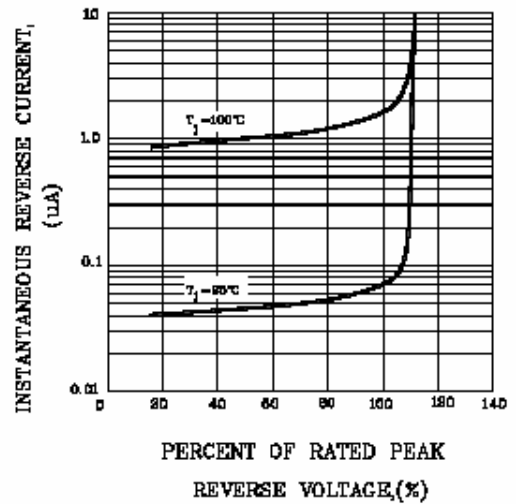


FIG.5-TYPICAL JUNCTION CAPACITANCE

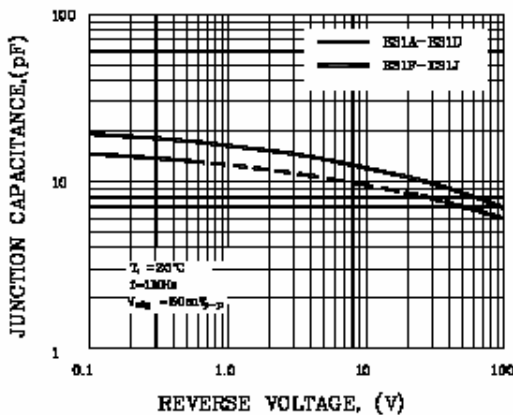
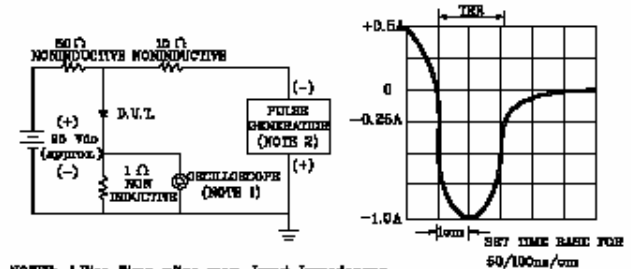


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTE: 1.Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF

2.Rise time = 10ns max. Source Impedance = 60 ohms