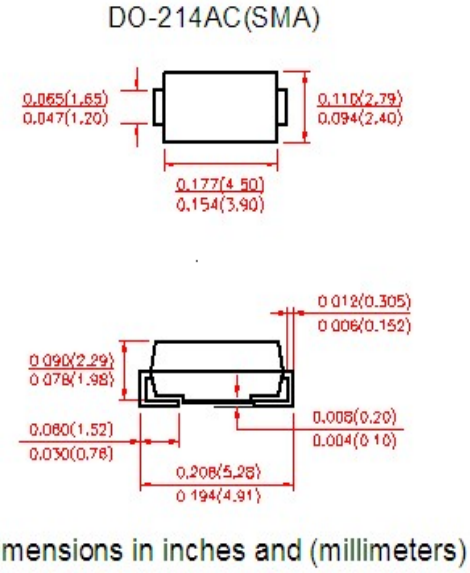
SURFACE MOUNT GLASS PASSIVATED RECTIFIER

ES1A THRU ES1J

VOLTAGE RANGE 50 to 600 Volts
CURRENT 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 ^{O}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-214AC (SMA)
  0.003 ounce, 0.093 gram – DO-214AA (SMB)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25^{O}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_L = 100^{O}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 ^{O}C	I_R	5.0							μA
DC Blocking Voltage per element T_A = 125 ^{O}C		100							
Maximum Reverse Recovery Time Test conditions I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A	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)							^{O}C/W
	$R_{\theta JL}$	28 (SAM) 17 (SMB)							
Operating Junction Temperature Range	T_J	(-55 to +150)							^{O}C
Storage Temperature Range	T_{STG}	(-55 to +150)							^{O}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 5.0nn) copper pad areas.

RATINGS AND CHARACTERISTIC CURVES ES1A THRU ES1J

FIG.1—TYPICAL FORWARD CURRENT DERATING CURVE

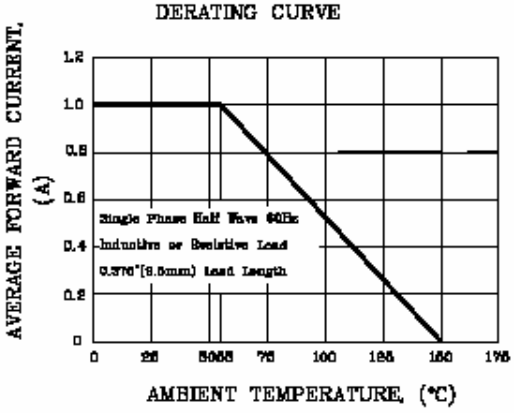


FIG.2—MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

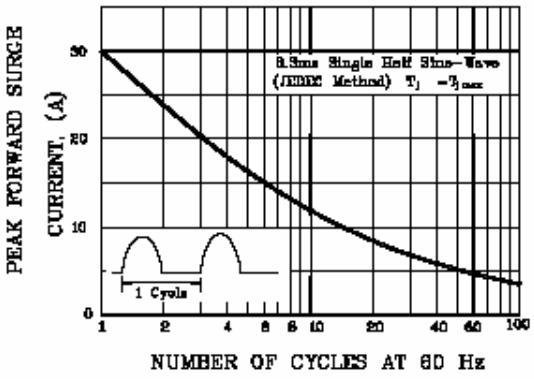


FIG.3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

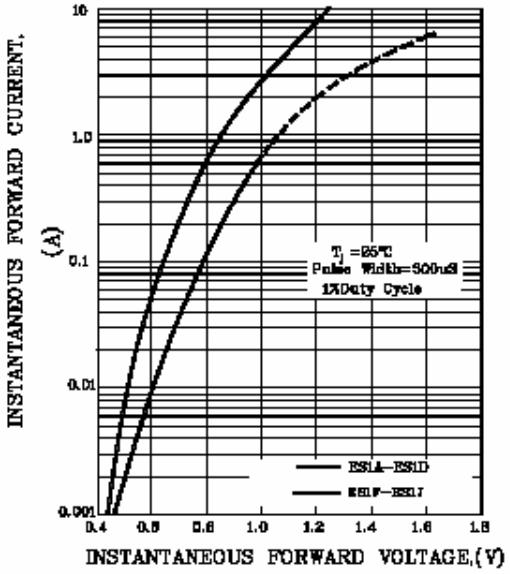


FIG.4—TYPICAL REVERSE CHARACTERISTICS

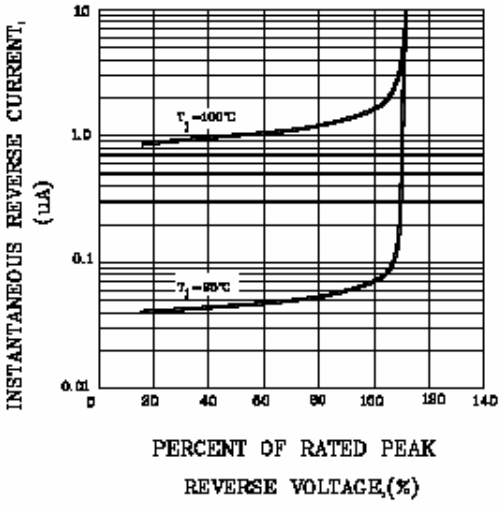


FIG.5—TYPICAL JUNCTION CAPACITANCE

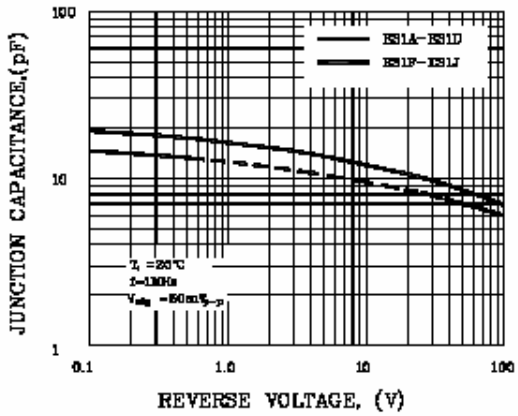
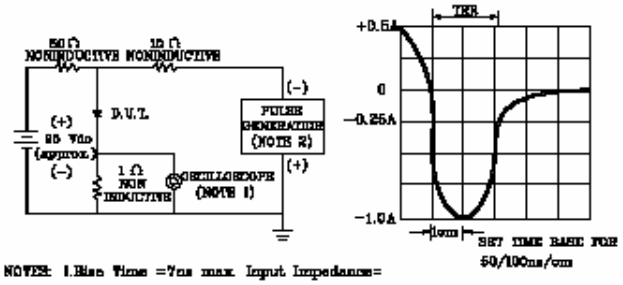


FIG.6—TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1.Rise Time =7ns max. Input Impedance= 1 megohm, 22pf

2.Rise time=10ns max. Source Impedance= 50 ohms