



SYNSEMI SEMICONDUCTOR

ES1A thru ES1M

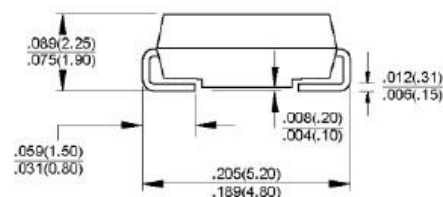
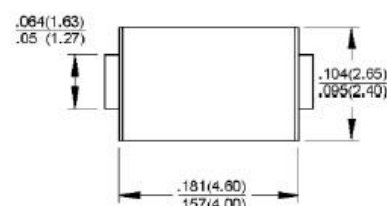
1.0 Amp. Super Fast Surface Mount Rectifiers
Voltage Range 50 to 1000 Volts Forward Current 1.0 Ampere

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-0



DO-214AC (SMA)



Dimensions in inches and (millimeters)

Mechanical Data

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

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					μA μA
Maximum reverse recovery time (Note 1)	t_r	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 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.

ES1A thru ES1M

RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

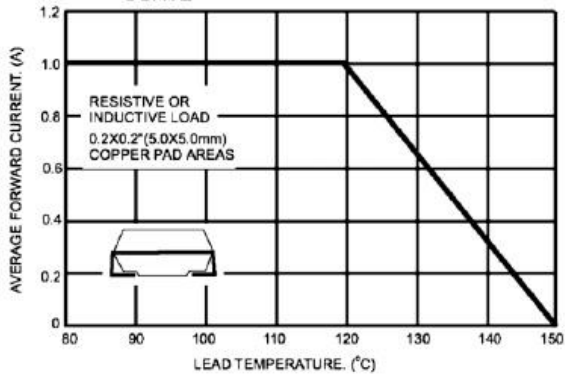


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

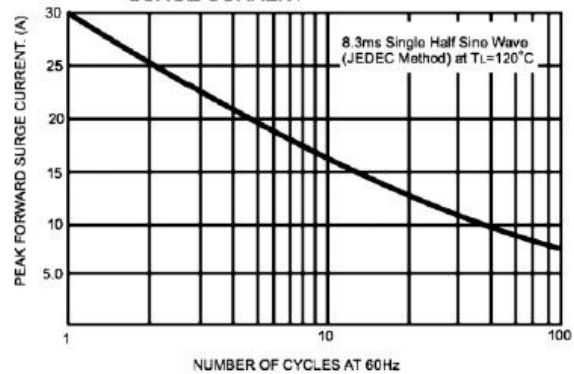


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

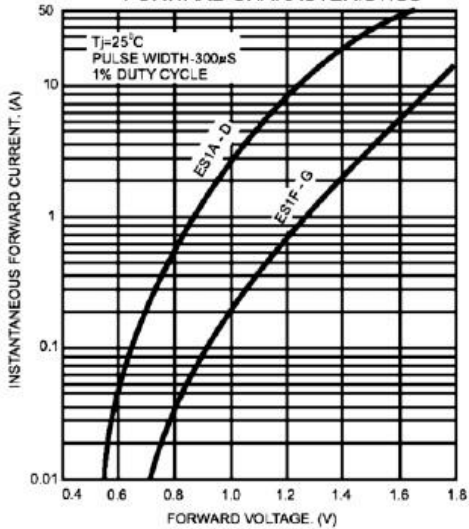


FIG.4- TYPICAL REVERSE CHARACTERISTICS

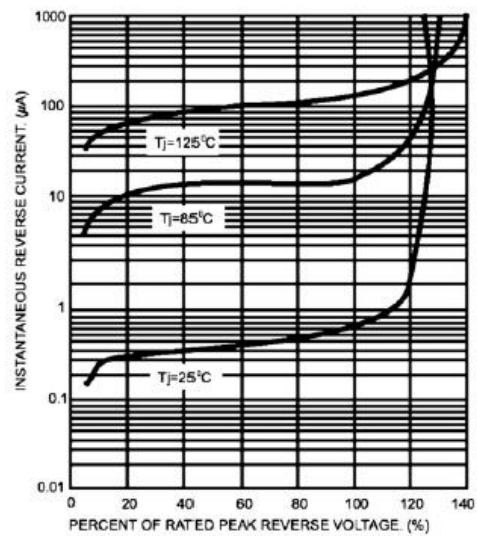


FIG.5- TYPICAL JUNCTION CAPACITANCE

