

ES3A THRU ES3M

Super Fast Surface Mount Rectifiers

Voltage Range
50 to 1000 Volts
Forward Current
3.0 Amperes

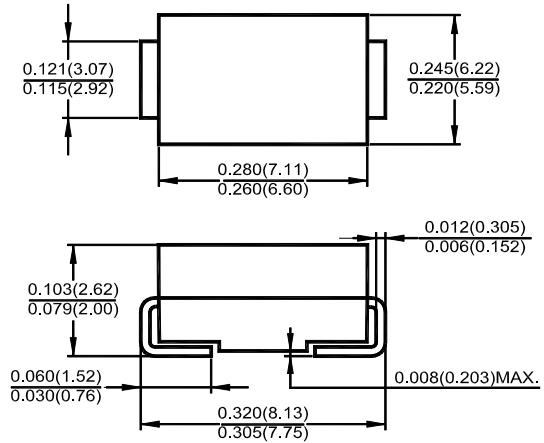
Features

- 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-0

Mechanical Data

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

SMC (DO-214AB)



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

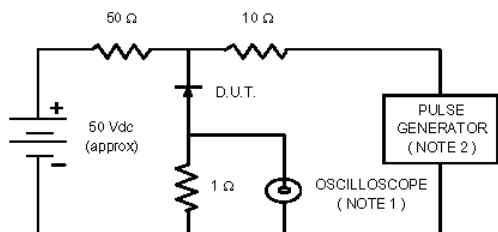
Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Parameter	Symbols	ES 3A	ES 3B	ES 3C	ES 3D	ES 3F	ES 3G	ES 3J	ES 3K	ES 3M	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}	3.0									Amp
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	100									Amp
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	10 500									μA μA
Maximum reverse recovery time (Note 1)	t_{rr}	35									nS
Typical junction capacitance (Note 2)	C_j	50			75			40			pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	75 20									$^\circ\text{C}/\text{W}$
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 ES3A THRU ES3M



NOTES: 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

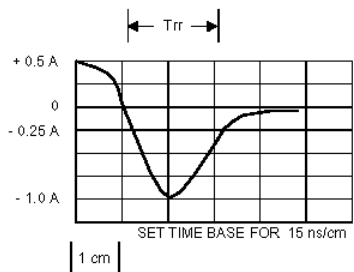


FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

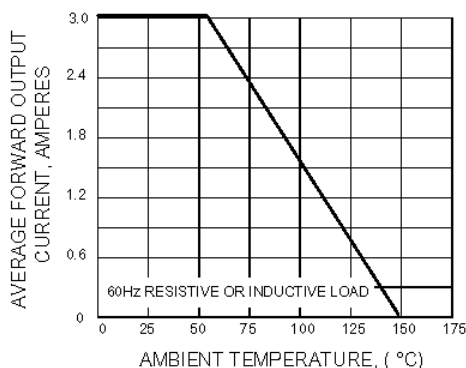


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

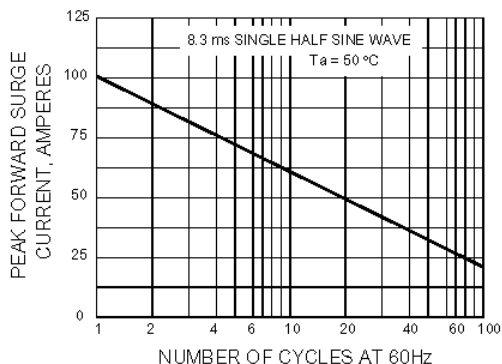


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

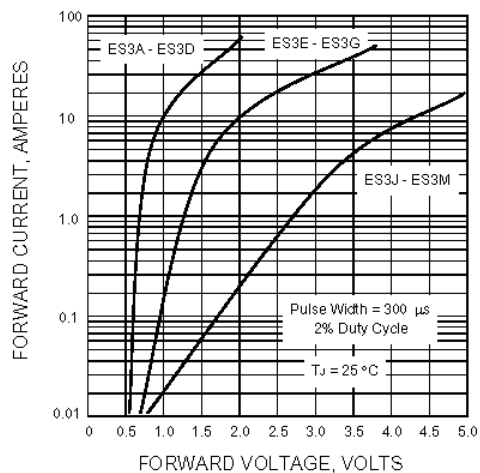


FIG.5 - TYPICAL REVERSE CHARACTERISTICS

