ES3A thru ES3M

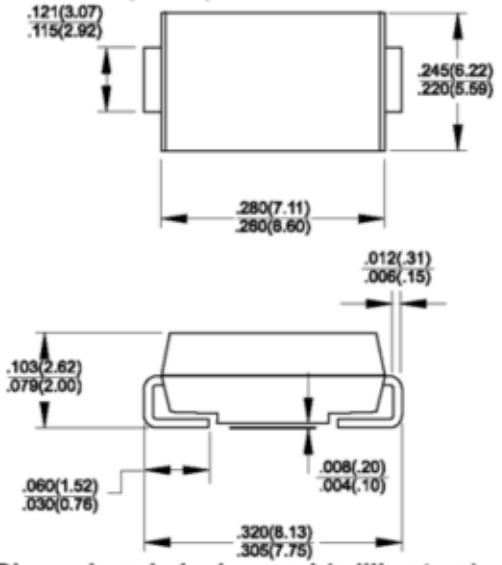
Super Fast Surface Mount Rectifiers
Reverse Voltage 50 to 1000 Volts Forward Current 3.0 Amperes

Features

- Glass passivated junction chip
- 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-O



DO-214AB (SMC)



Dimensions in inches and (millimeters)

Mechanical Data

- Cases: Molded plastic
- Terminals: Solder plated
- Polarity: Indicated by cathode band
- Weight: 0.007 ounce, 0.21 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 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									Amps
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) @T_L=100°C	I_{FSM}	100.0									Amps
Maximum instantaneous forward voltage @ 3.0A	V_F	0.95				1.3		1.7			Volts
Maximum DC reverse current @ T_A=25°C at rated DC blocking voltage @ T_A=100°C	I_R	10.0 500									uA uA
Maximum reverse recovery time (Note 1)	t_{rr}	35									nS
Typical junction capacitance (Note 2)	C_J	50				40					pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	47 12									°C/W
Operating junction temperature range	T_J	-55 to +150									°C
Storage temperature range	T_{STG}	-55 to +150									°C

Notes: 1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
2. Measured at 1 MHz and Applied V_R=4.0 Volts
3. Units Mounted on P.C.B. with 0.31 x 0.31" (8.0 x 8.0mm) Copper Pad Areas

RATINGS AND CHARACTERISTIC CURVES

(T_A = 25°C unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

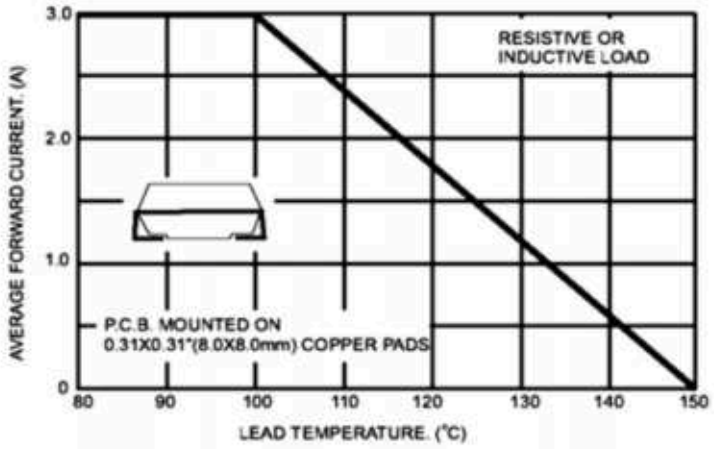


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

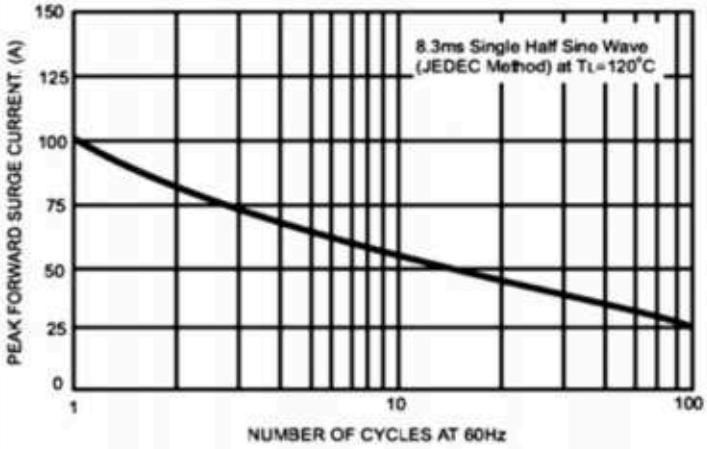


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

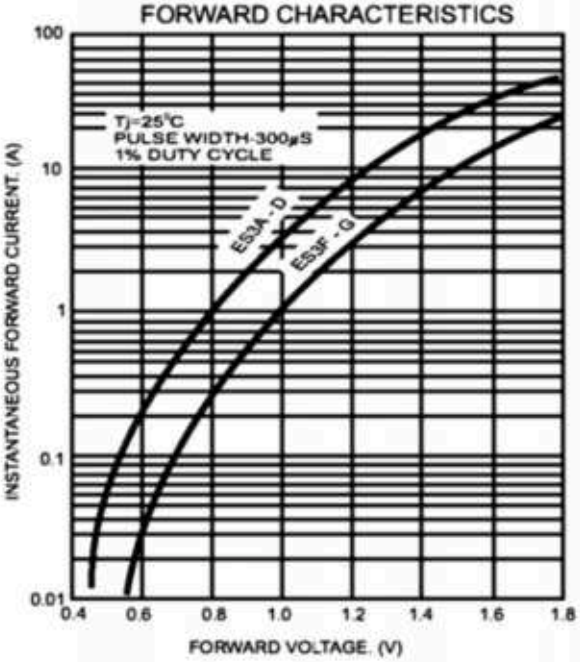


FIG.4- TYPICAL REVERSE CHARACTERISTICS

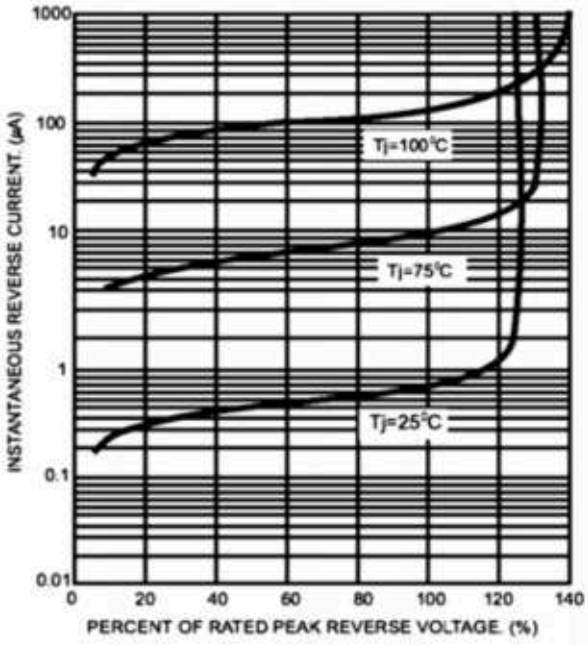


FIG.5- TYPICAL JUNCTION CAPACITANCE

