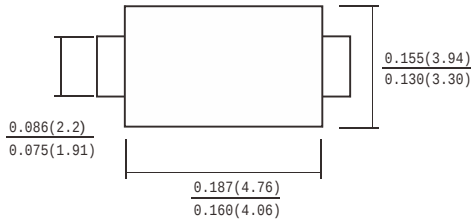
ES3A-ES3J

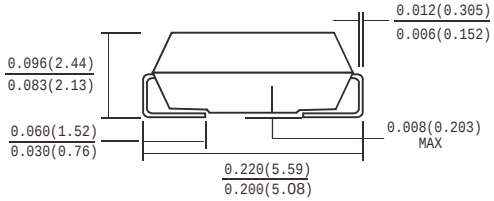
Surface Mount Superfast Rectifiers

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junctions
- Fast switching for high efficiency
- High forward surge capability
- High temperature soldering:
  260℃/10 seconds at terminals
- Component in accordance to
  RoHS 2002/95/1 and WEEE 2002/96/EC

SMB(DO-214AA)





Dimensions in inches and (millimeters)

Mechanical Date

- **Case:** JEDEC DO-214AA molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end

Maximum Ratings and Electrical Characteristics Rating at 25°C

ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%

Type Number	SYMBOL	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	V
Average Rectified Output Current @T_L =100℃	$I_{F(AV)}$	3.0							A
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	100							A
Forward Voltage @IF=3.0A	V_{FM}	1.0				1.25		1.65	V
Peak Reverse Current @T_A =25℃	I_R	5.0							uA
At Rated DC Blocking Voltage @T_A =125℃		100							
I^2t Rating for fusing (t <8.3ms)	I^2t	26.56							A^2s
Maximum Reverse Recovery Time (Note 1)	Trr	35							ns
Typical Junction Capacitance (Note 2)	C_J	45							pF
Typical Thermal Resistance Junction to Ambient(Note 3)	$R_{\theta JA}$	20							℃/W
Operating Temperature Range	T_J	-55 to+150							℃
Storage Temperature Range	T_{STG}	-55 to +150							℃

Note: 1.Reverse Recovery Test Conditions:IF=0.5A,IR=1.0A,IRR=0.25A.

2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C.

3.Thermal Resistance from Junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas.

Characteristic Curves (T_A=25 ℃ unless otherwise noted)

FIG.1MAXIMUM AVERAGE FORWARD CURRENT DERATING

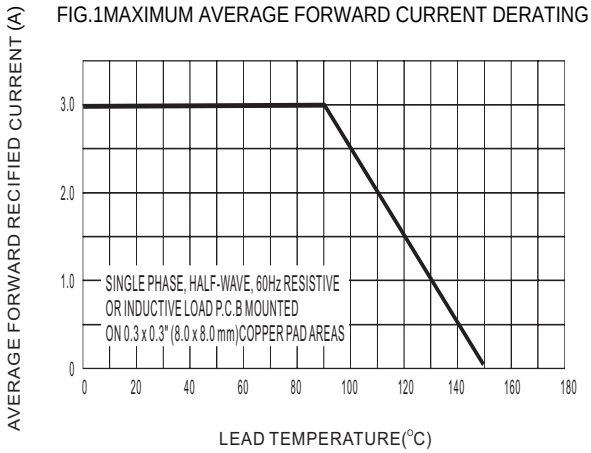


FIG.2TYPICAL FORWARD CHARACTERISTICS

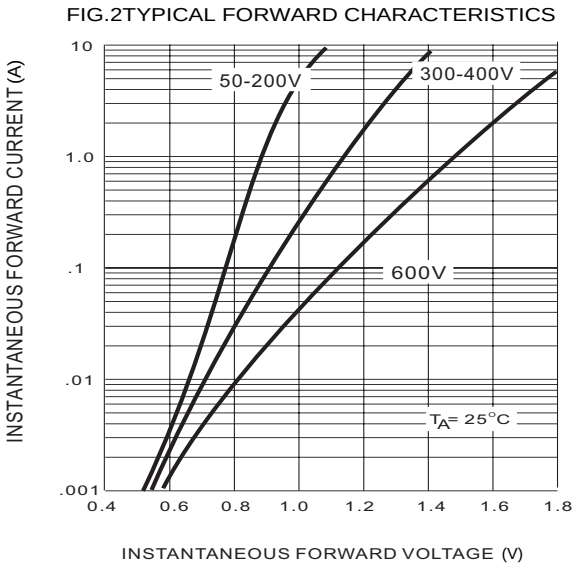


FIG.3MAXIMUM NON-REPEITIVE SURGE CURRENT

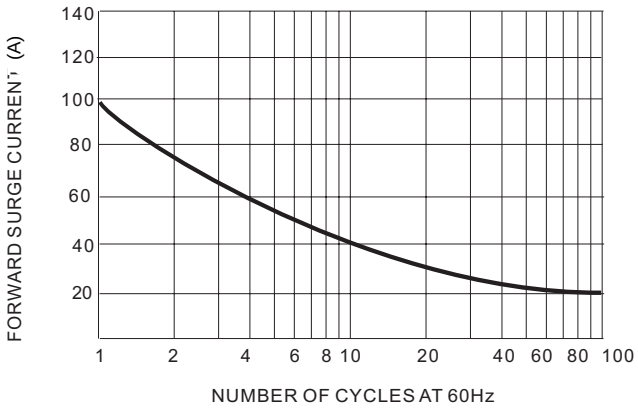


FIG.4TYPICAL JUNCTION CAPACITANCE

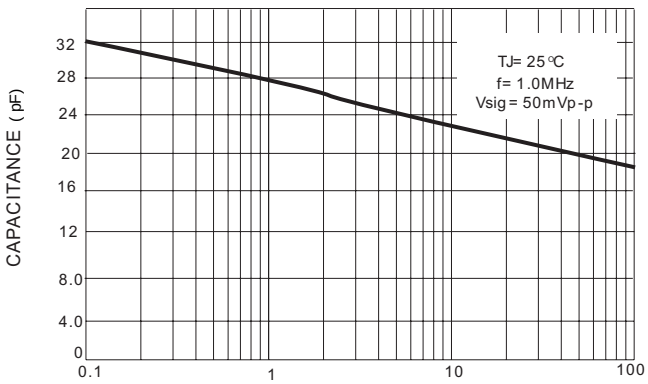


FIG.5TYPICAL REVERSE CHRACTERISTICS

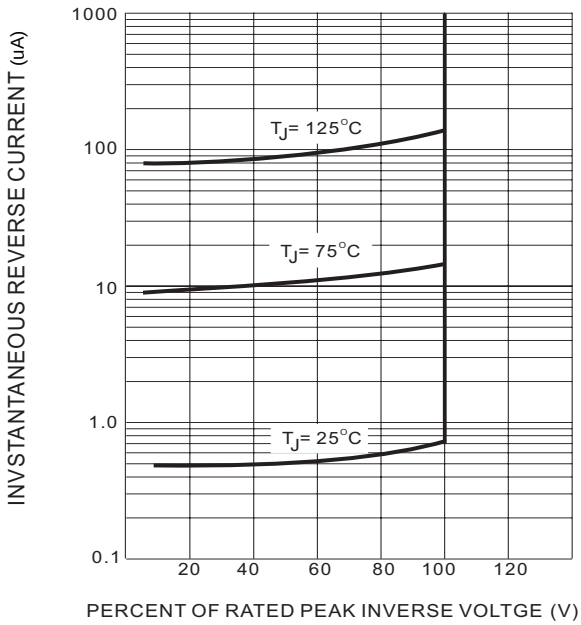
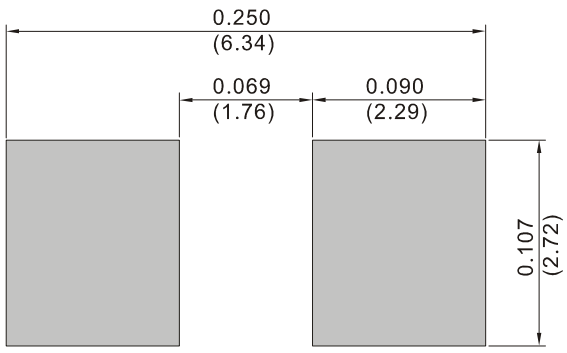


FIG.6 MOUNTING PAD LAYOUT



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