

# SUPER-FAST RECTIFIER

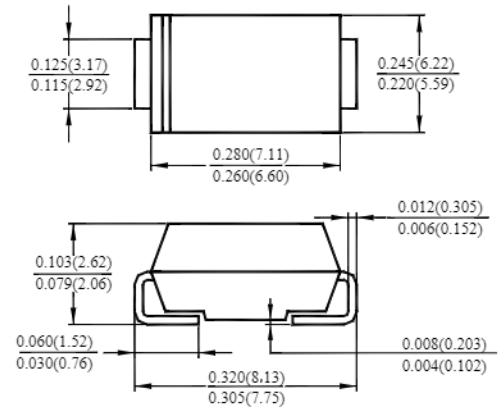
## FEATURES

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automated Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0

## MECHANICAL DATA

- Case: Molded Plastic
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Mounting Position: Any
- Marking: Type Number

ES3A --- ES3J



Dimensions in inches and (millimeters)  
DO-214AB (SMC)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings 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	ES 3A	ES 3B	ES 3C	ES 3D	ES 3F	ES 3G	ES 3H	ES 3J	Unit
Maximum Recurrent Peak Reverse Voltage	VRRM	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	VRMS	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	VDC	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified see fig.1	IF(AV)	3.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	IFSM	100								A
Maximum Instantaneous Forward Voltage @ 3.0A	VF	0.95			1.3		1.7			V
Maximum DC Reverse Current @ TA=25°C at Rated DC Blocking Voltage @ TA=100°C (Note 1)	IR	10				500				µA
Typical Junction Capacitance (Note 2)	Cj	45			30					pF
Typical Reverse Recovery Time (Note 3)	Trr	35								nS
Typical Thermal Resistance (Note 4)	RθJA RθJL	47				12				°C/W
Operating Temperature Range	TJ	-55 to +150								°C
Storage Temperature Range	TSTG	-55 to +150								°C

- Notes:
1. Unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pads as heat sink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See Figure 5.

ES3A---ES3J Typical Characteristics

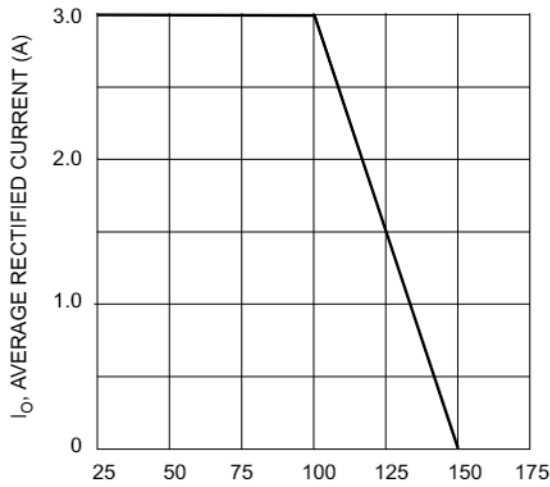


Fig. 1 Forward Current Derating Curve

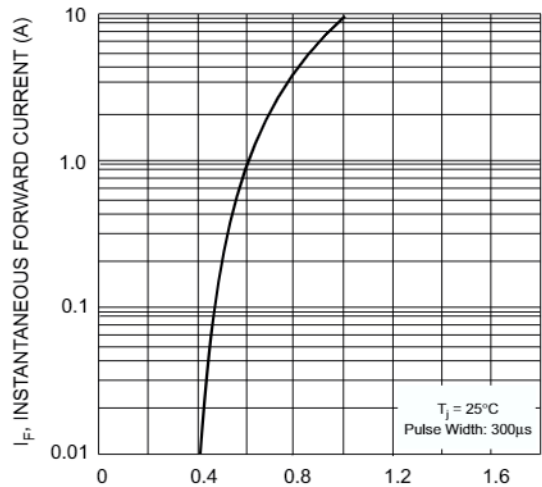


Fig. 2 Typical Forward Characteristics

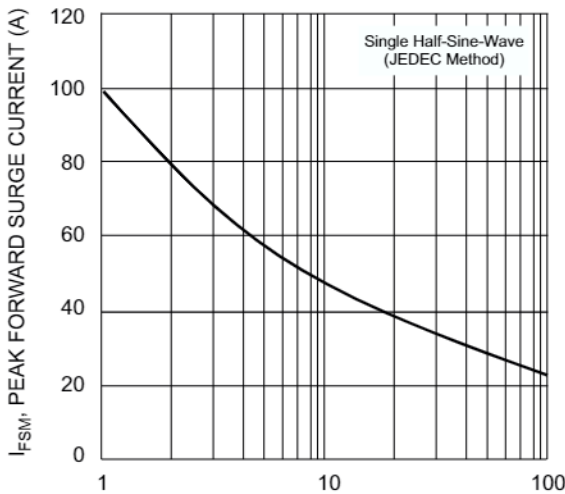


Fig. 3 Surge Current Derating Curve

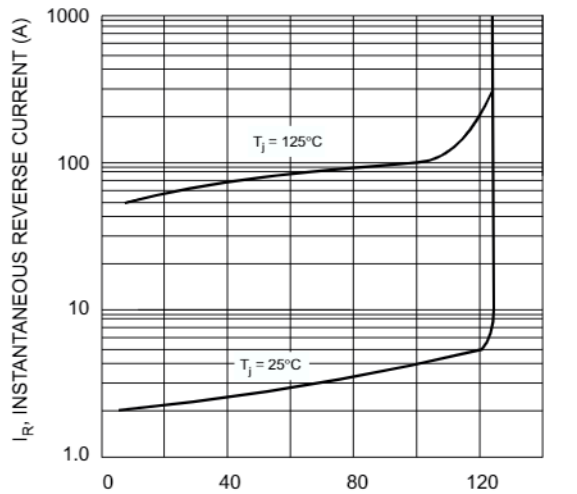
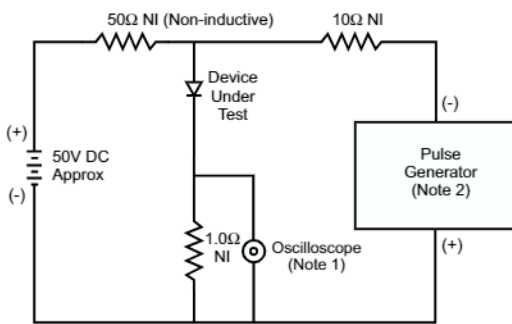
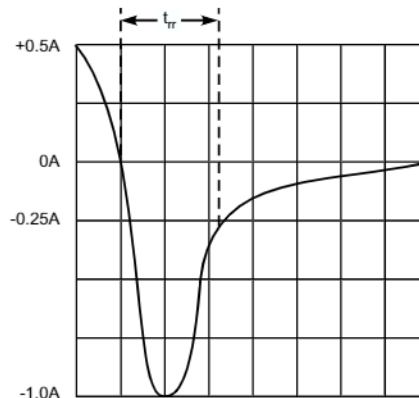


Fig. 4 Typical Reverse Characteristics



- Notes:  
 1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
 2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit