

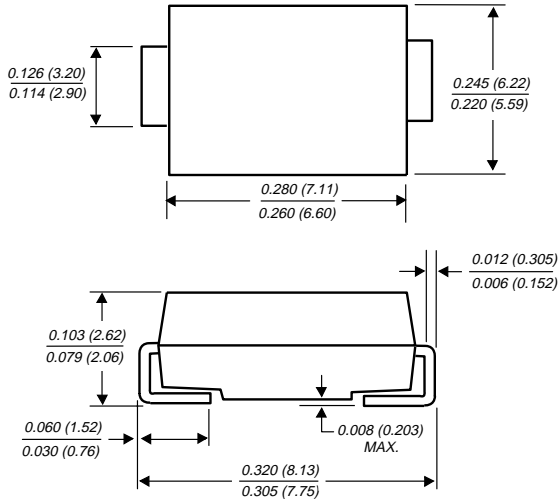
# ES3A THRU ES3D

## SURFACE MOUNT ULTRAFAST EFFICIENT PLASTIC RECTIFIER

Reverse Voltage - 50 to 200 Volts

Forward Current - 3.0 Amperes

### DO-214AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mount applications
- ◆ 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



### MECHANICAL DATA

**Case:** JEDEC DO-214AB molded plastic body over passivated chip

**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Weight:** 0.007 ounces, 0.21 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

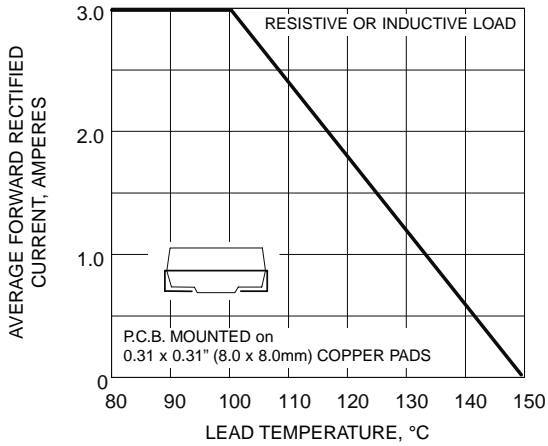
	SYMBOLS	ES3A	ES3B	ES3C	ES3D	UNITS
Device marking code		EA	EB	EC	ED	
Maximum repetitive peak reverse voltage	VRRM	50	100	150	200	Volts
Maximum RMS voltage	VRMS	35	70	105	140	Volts
Maximum DC blocking voltage	VDC	50	100	150	200	Volts
Maximum average forward rectified current at T <sub>L</sub> =100°C	I(AV)	3.0				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T <sub>L</sub> =100°C	I <sub>FSM</sub>	100.0				Amps
Maximum instantaneous forward voltage at 3.0A	V <sub>F</sub>	0.90				Volts
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	10.0 500.0				μA
Maximum reverse recovery time (NOTE 1)	t <sub>rr</sub>	20.0				ns
Maximum reverse recovery time (NOTE 2)	t <sub>rr</sub>	30.0 50.0				ns
Maximum stored charge (NOTE 2)	Q <sub>rr</sub>	15.0 35.0				nC
Typical junction capacitance (NOTE 3)	C <sub>J</sub>	45.0				pF
Typical thermal resistance (NOTE 4)	R <sub>θJA</sub> R <sub>θJL</sub>	47.0 12.0				°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150				°C

#### NOTES:

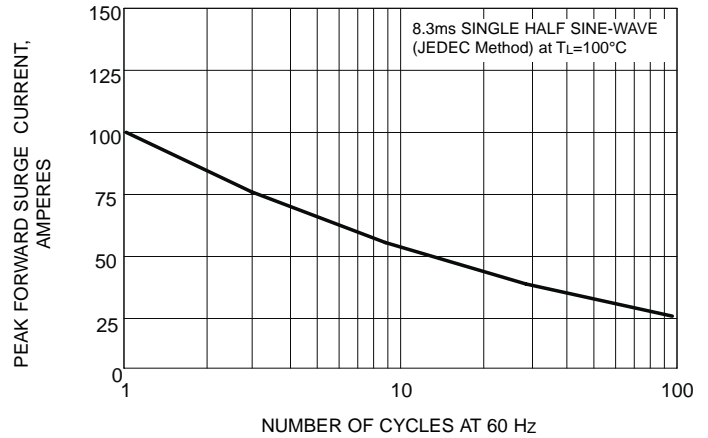
- (1) Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
- (2) t<sub>rr</sub> and Q<sub>rr</sub> measured at: V<sub>R</sub>=30V, di/dt=50A/μs, I<sub>F</sub>=3.0A, and I<sub>rr</sub>=10% I<sub>R</sub>
- (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (4) Units mounted on P.C.B. with 0.31 x 0.31" (8.0 x 8.0mm) copper pad areas

# RATING AND CHARACTERISTIC CURVES ES3A THRU ES3D

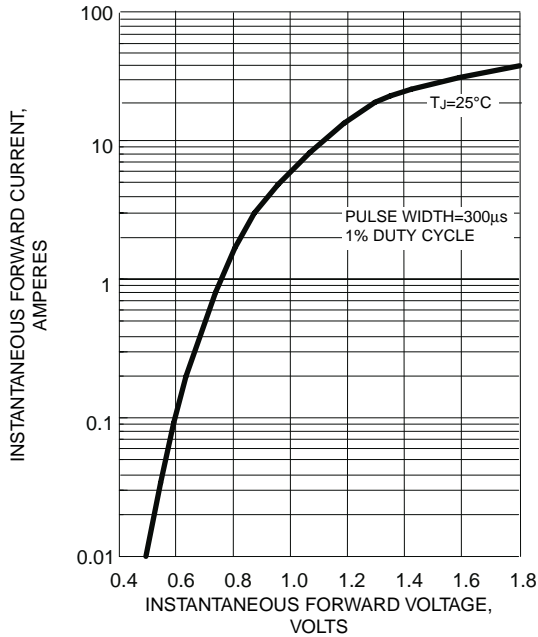
**FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE**



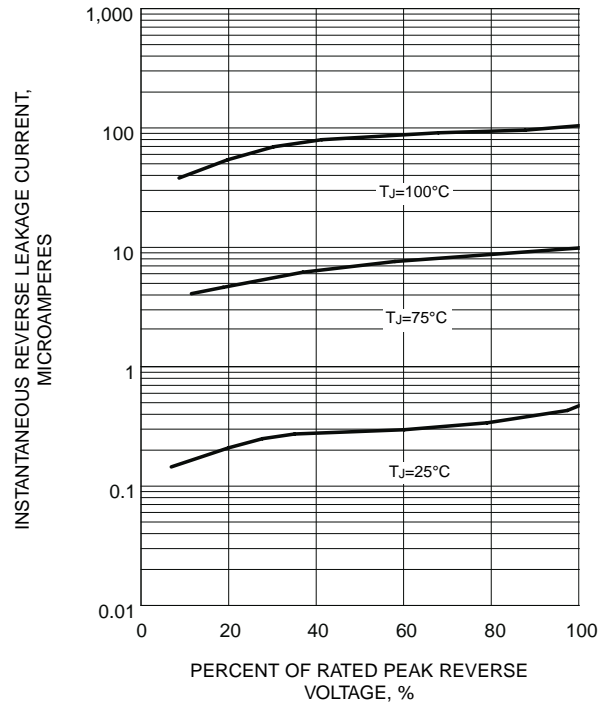
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

