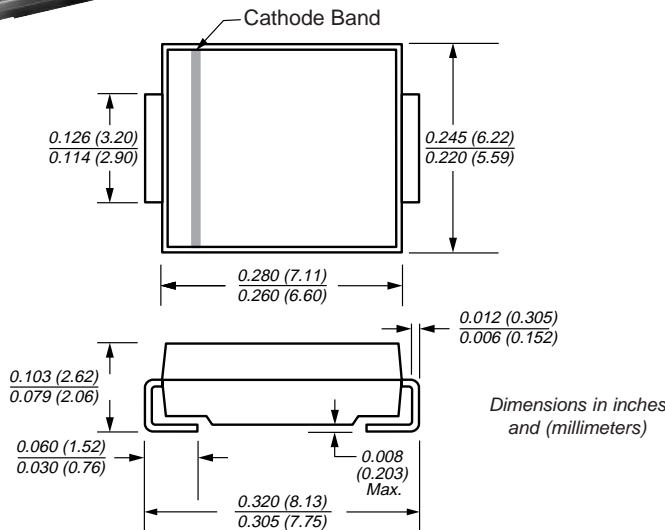




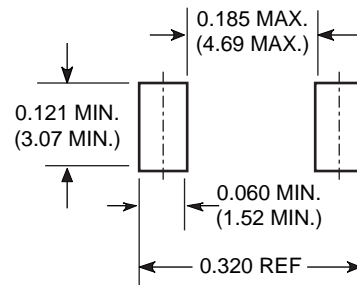
## Surface Mount Ultrafast Plastic Rectifier

DO-214AB (SMC)

Reverse Voltage 50 to 200V  
Forward Current 3.0A  
Reverse Recovery Time 20ns



### Mounting Pad Layout



### Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- Ultrafast recovery time for high efficiency
- Excellent high temperature switching
- Glass passivated junction
- High temperature soldering guaranteed: 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 ounce, 0.21 gram

### Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	ES3A	ES3B	ES3C	ES3D	Unit
Device marking code		EA	EB	EC	ED	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	V
Maximum average forward rectified current at T <sub>L</sub> = 100°C	I <sub>F(AV)</sub>	3.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	100				A
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub> R <sub>θJL</sub>	47 12				°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150°C				°C

### Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

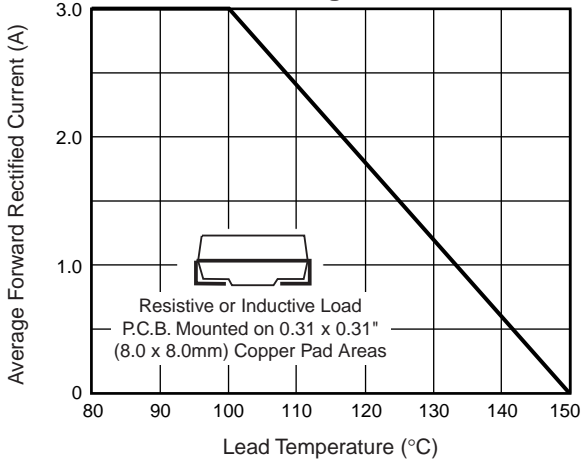
Maximum instantaneous forward voltage at 3.0A <sup>(2)</sup>	V <sub>F</sub>	0.90				V
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	10 500				μA
Maximum reverse recovery time I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A	t <sub>rr</sub>	20				ns
Maximum reverse recovery time I <sub>F</sub> = 3.0A, V <sub>R</sub> = 30V, di/dt = 50A/μs, I <sub>rr</sub> = 10% I <sub>RM</sub> T <sub>J</sub> = 100°C	t <sub>rr</sub>	30 50				ns
Maximum stored charge I <sub>F</sub> = 3.0A, V <sub>R</sub> = 30V, di/dt = 50A/μs, I <sub>rr</sub> = 10% I <sub>RM</sub> T <sub>J</sub> = 100°C	Q <sub>rr</sub>	15 35				nC
Typical junction capacitance at 4.0V, 1MHz	C <sub>J</sub>	45				pF

**Notes:** (1) Units mounted on P.C.B. with 0.31 x 0.31" (8.0 x 8.0mm) copper pad areas

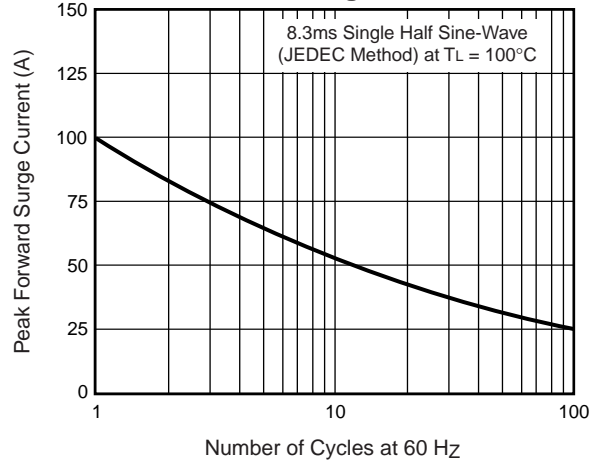
(2) Pulse test: 300μs pulse width, 1% duty cycle

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

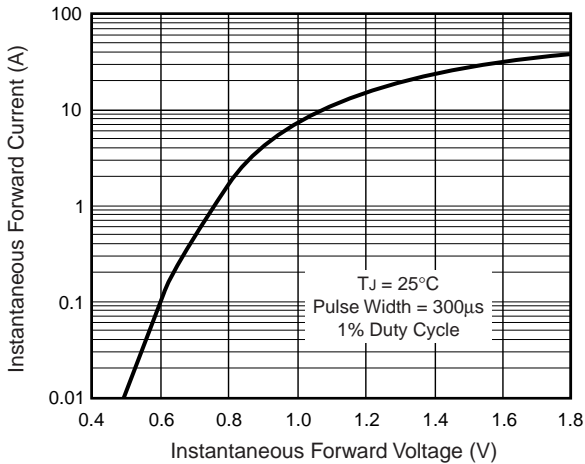
**Fig. 1 – Maximum Forward Current Derating Curve**



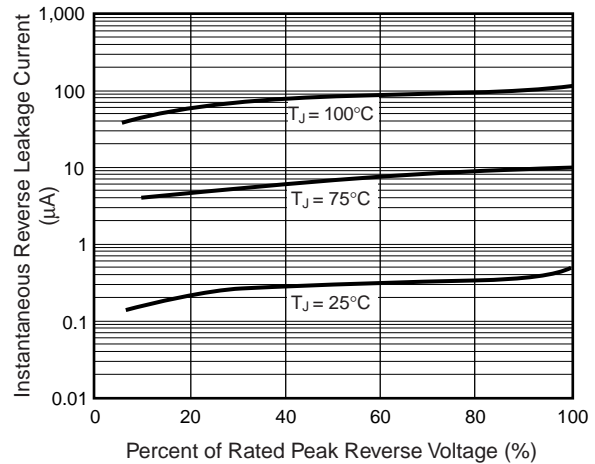
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Leakage Characteristics**



**Fig. 5 – Typical Junction Capacitance**

