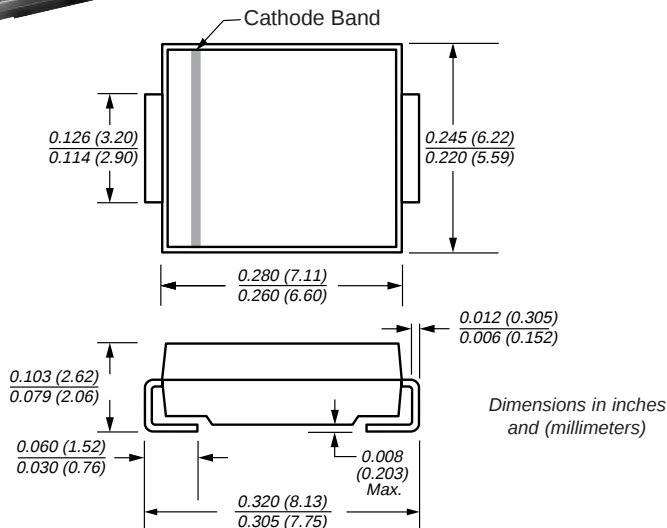




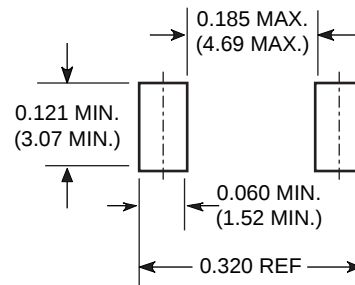
Surface Mount Ultrafast Plastic Rectifier

DO-214AB (SMC)



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

Mounting Pad Layout



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

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

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_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V
Maximum average forward rectified current at $T_L = 100^\circ\text{C}$	$I_{F(AV)}$	3.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	100				A
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	47 12				°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150°C				°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Maximum instantaneous forward voltage at 3.0A ⁽²⁾	V_F	0.90	V
Maximum DC reverse current $T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	I_R	10 500	μA
Maximum reverse recovery time $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	20	ns
Maximum reverse recovery time $T_J = 25^\circ\text{C}$ $I_F = 3.0\text{A}, V_R = 30\text{V}, di/dt = 50\text{A}/\mu\text{s}, I_{rr} = 10\% I_{RM}$ $T_J = 100^\circ\text{C}$	t_{rr}	30 50	ns
Maximum stored charge $T_J = 25^\circ\text{C}$ $I_F = 3.0\text{A}, V_R = 30\text{V}, di/dt = 50\text{A}/\mu\text{s}, I_{rr} = 10\% I_{RM}$ $T_J = 100^\circ\text{C}$	Q_{rr}	15 35	nC
Typical junction capacitance at 4.0V, 1MHz	C_J	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

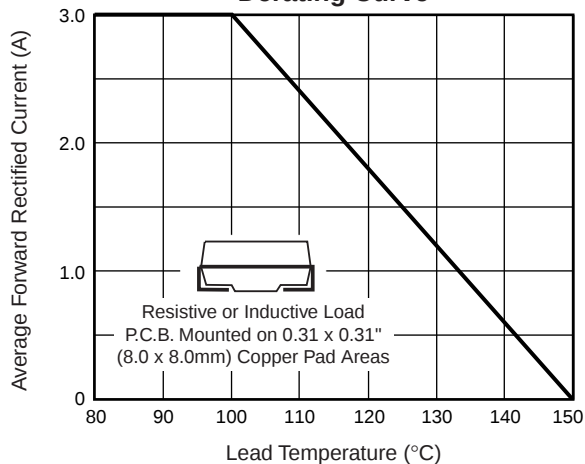


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

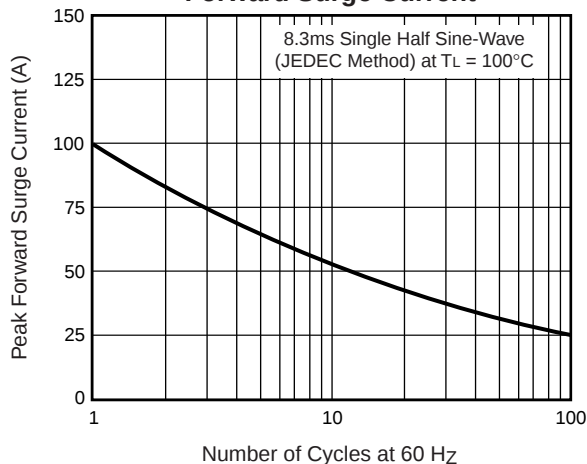


Fig. 3 – Typical Instantaneous Forward Characteristics

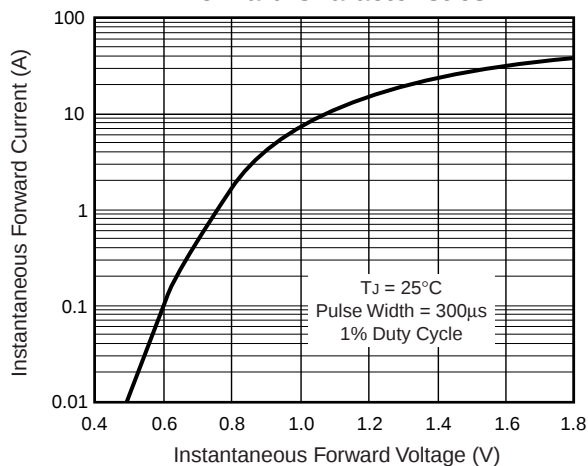


Fig. 4 – Typical Reverse Leakage Characteristics

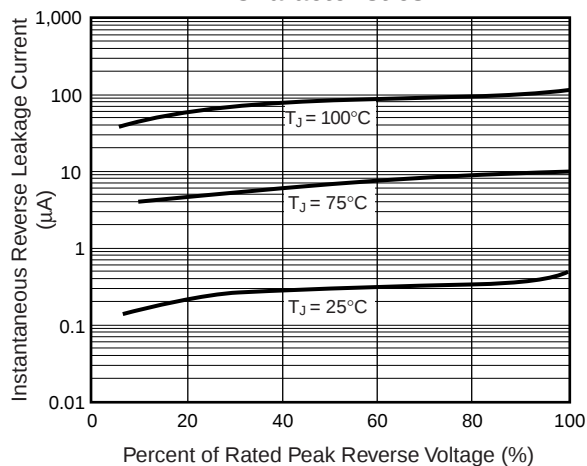


Fig. 5 – Typical Junction Capacitance

