



ES3A THRU ES3D

Surface Mount Efficient Fast Recovery Rectifier

Features

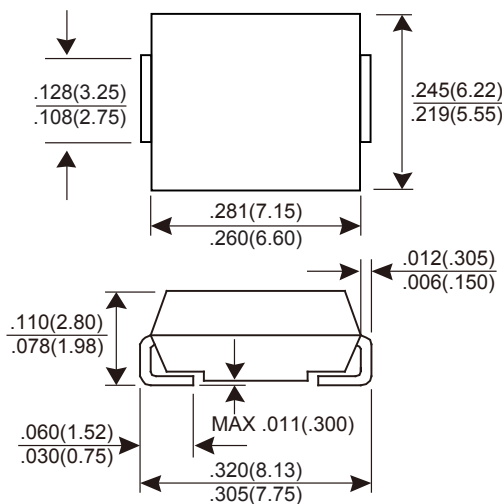
- * Fast switching for high efficiency
- * Low forward voltage drop
- * High current capability
- * Low reverse leakage current
- * High surge current capability

Mechanical Data

- * Case: Molded plastic, SMC/DO-214AB
- * Epoxy: UL 94V-0 rate flame retardant
- * Terminals: Solderable per MIL-STD-750, method 2026
- * Polarity: Color band denotes cathode end
- * Mounting position: Any

Voltage Range 50 to 200 V
Current 3.0 Ampere

SMC/DO-214AB



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	ES3A	ES3B	ES3D	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	V
Maximum RMS voltage	V_{RMS}	35	70	140	V
Maximum DC blocking voltage	V_{DC}	50	100	200	V
Maximum average forward rectified current @ $T_L=110^\circ\text{C}$	$I_{F(AV)}$	3.0			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100			A
Maximum instantaneous forward voltage @ $I_F=3.0\text{A}$	V_F	0.9			V
Maximum DC reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=125^\circ\text{C}$	I_R	10 500			μA
Maximum reverse recovery time (Note 1)	t_{rr}	20			ns
Typical thermal resistance from junction to ambient (Note 2)	$R_{\theta JA}$	47			$^\circ\text{C}/\text{W}$
Typical thermal resistance from junction to lead (Note 2)	$R_{\theta JL}$	12			$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150			$^\circ\text{C}$

NOTES : (1) Reverse recovery test conditions $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$.

(2) Mounted on PCB with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas.

RATINGS AND CHARACTERISTICS CURVES ES3A THRU ES3D

Fig.1 - Forward Current Derating Curve

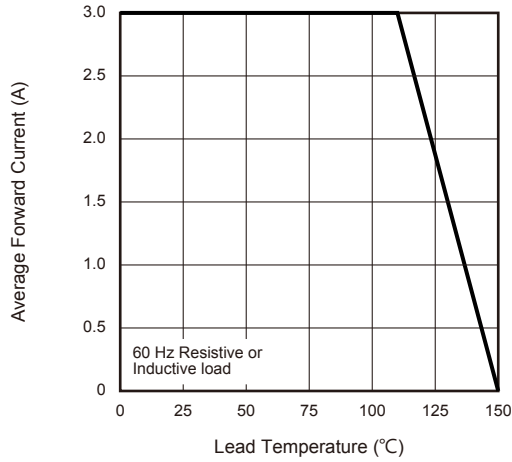


Fig.2 - Maximum Non-Repetitive Peak Forward Surge Current

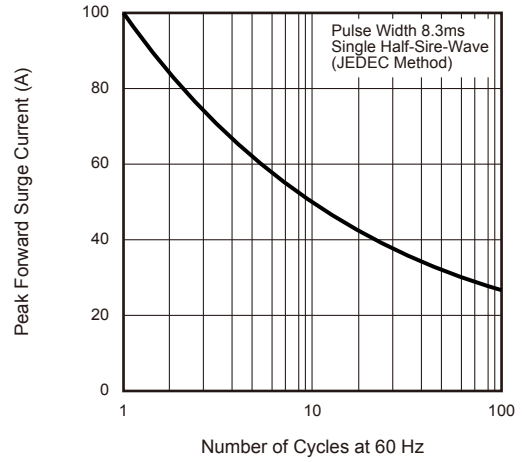


Fig.3 - Typical Instantaneous Forward Characteristics

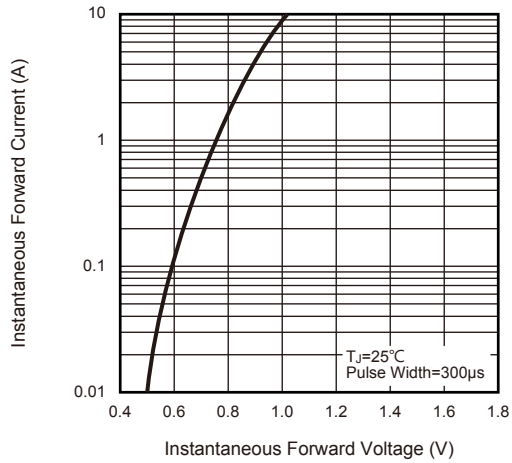


Fig.4 - Typical Reverse Leakage Characteristics

