

Surface Mount Ultrafast Plastic Rectifier

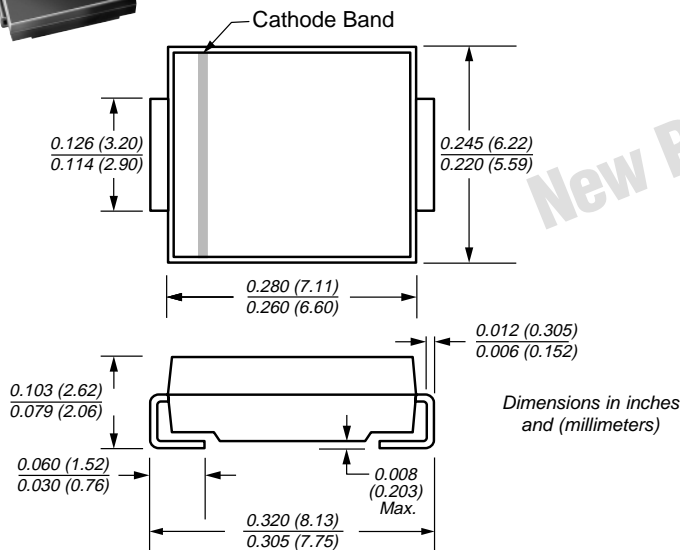
Reverse Voltage 300 to 400V

Forward Current 3.0A

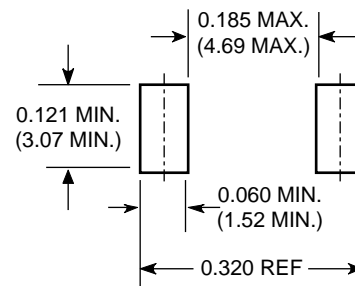
Reverse Recovery Time 35ns



DO-214AB (SMC)



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	ES3F	ES3G	Unit
Device marking code		EF	EG	
Maximum repetitive peak reverse voltage	V _{RRM}	300	400	V
Working peak reverse voltage	V _{RWM}	225	300	V
Maximum RMS voltage	V _{RMS}	210	280	V
Maximum DC blocking voltage	V _{DC}	300	400	V
Maximum average forward rectified current at T _L = 110°C	I _{F(AV)}	3.0		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _L = 110°C	I _{FSM}	100		A
Typical thermal resistance ⁽¹⁾	R _{θJA} R _{θJL}	50 15		°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150		°C

Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	ES3F	ES3G	Unit
Maximum instantaneous forward voltage at 3.0A	V _F	1.1		V
Maximum DC reverse current at working peak reverse voltage	I _R	10 350		μA
Maximum reverse recovery time at I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A	t _{rr}	35		ns
Maximum reverse recovery time I _F =1.0A, di/dt=100A/μs, V _R =30V, I _{rr} =0.1I _{RM}	t _{rr}	50		ns
Maximum reverse recovery current I _F =1.0A, di/dt=100A/μs, V _R =30V, I _{rr} =0.1I _{RM}	I _{RM}	3.0		A
Maximum stored charge I _F = 1.0A, di/dt = 100A/μs, V _R = 30V, I _{rr} = 0.1I _{RM}	Q _{rr}	50		nC
Typical junction capacitance at 4.0V, 1MHz	C _J	30		pF

Note: (1) Units mounted on P.C.B. 5.0 x 5.0mm (0.013mm thick) land areas

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Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Maximum Forward Current Derating Curve

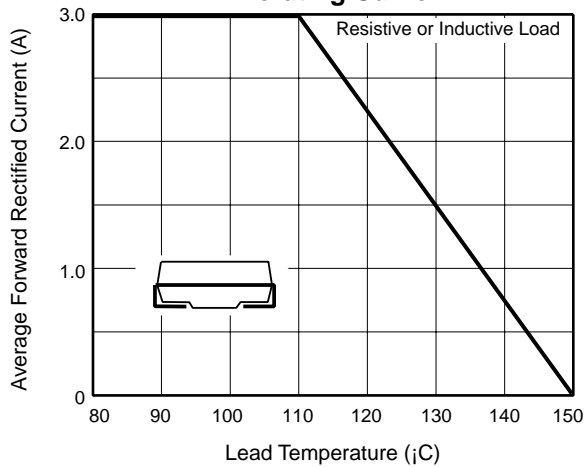


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

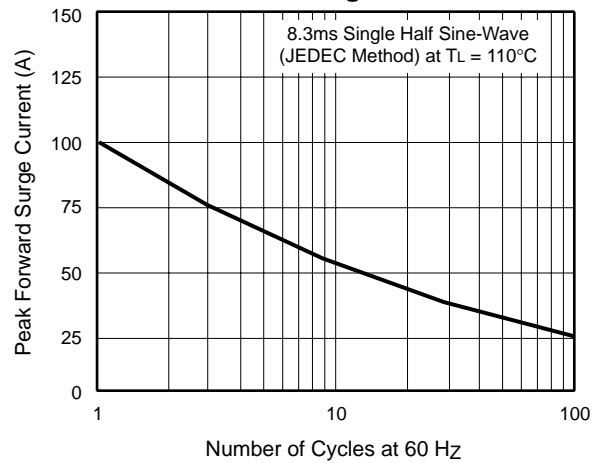


Fig. 3 – Typical Instantaneous Forward Characteristics

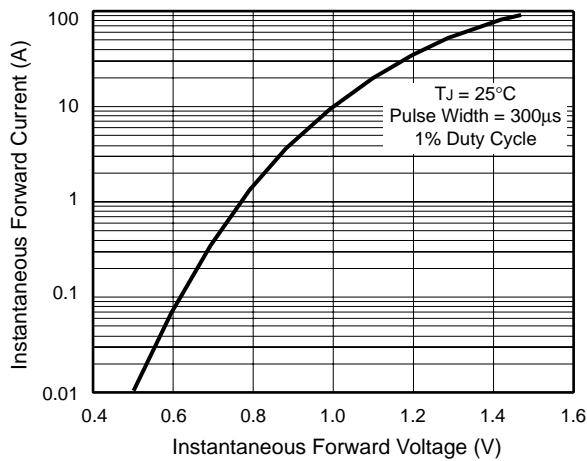


Fig. 4 – Typical Reverse Leakage Characteristics

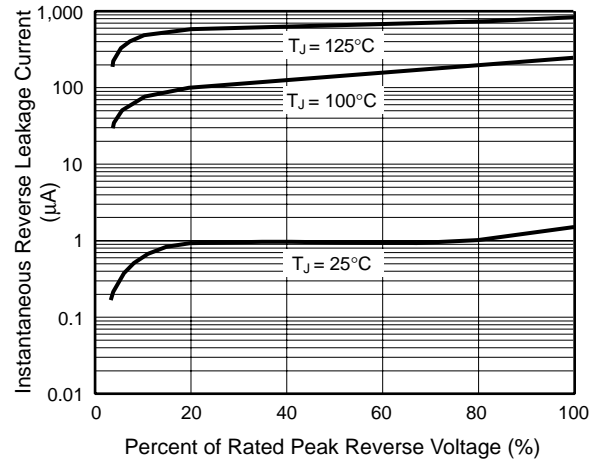


Fig. 5 - Reverse Switching Characteristics

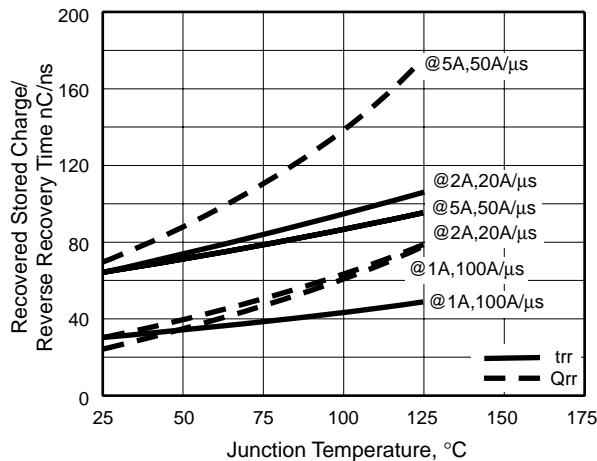


Fig. 6 - Typical Junction Capacitance

