

3.0Amp Super Fast Recovery Surface Mounted Rectifiers

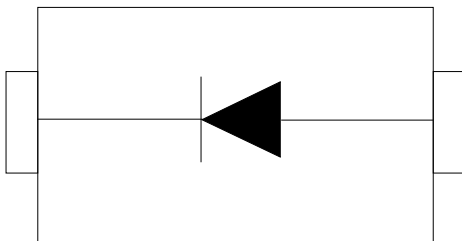
Description

General Application Super Fast Recovery Surface Mounted rectifier, encapsulated in a SMC Surface-Mounted Device (SMD) plastic package.

Features

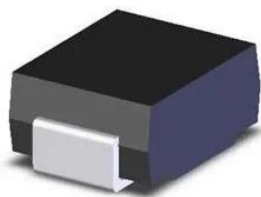
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Idea for printed circuit board
- Glass passivated junction chip
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed 260 °C/10 seconds at terminals

Dimensions and Pin Configuration



Graphic symbol

Package



SMC (Top View)

Mechanical Characteristics

- Case: JEDEC DO-214AB molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Case Material: “Green” Molding Compound

Applications

- For use in high frequency rectification of power Supplies, inverters, converters, and freewheeling Diodes for consumer and telecommunication

Ordering Informatio

Part Number	Shipping	Reel Size
ES3AC	3000/Tape & Reel	13 inch
ES3BC	3000/Tape & Reel	13 inch
ES3CC	3000/Tape & Reel	13 inch
ES3DC	3000/Tape & Reel	13 inch
ES3FC	3000/Tape & Reel	13 inch
ES3GC	3000/Tape & Reel	13 inch
ES3JC	3000/Tape & Reel	13 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%

Items	Symbol	ES3AC	ES3BC	ES3CC	ES3DC	ES3FC	ES3GC	ES3JC	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current at $T_L=100^{\circ}\text{C}$	$I_{(AV)}$	3.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	100.0							A
Typical thermal resistance	R_{QJA}	47.0							$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	$-55 \sim +150$							$^{\circ}\text{C}$
Storage temperature range	T_{STG}	$-55 \sim +150$							$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Items	Test conditions	Symbol	ES3AC~ES3DC	ES3FC~ES3GC	ES3JC	UNIT
Maximum instantaneous forward voltage	I _F =3.0A	V _F	1.0	1.3	1.7	V
Maximum DC reverse current	T _A =25℃	I _R	2			uA
at rated DC blocking voltage	T _A =125℃		200			
Maxinum reverse recovery time(Note 1)		T _{rr}	35			ns
Typical junction capacitance(Note 2)		C _j	65			pF

Note:

- Reverse recovery time test condition: $I_F=0.5\text{A}$ $I_R=1.0\text{A}$ $I_{rr}=0.25\text{A}$
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

FIG.1-DERATING CURVE OUTPUT RECTIFIED CURRENT

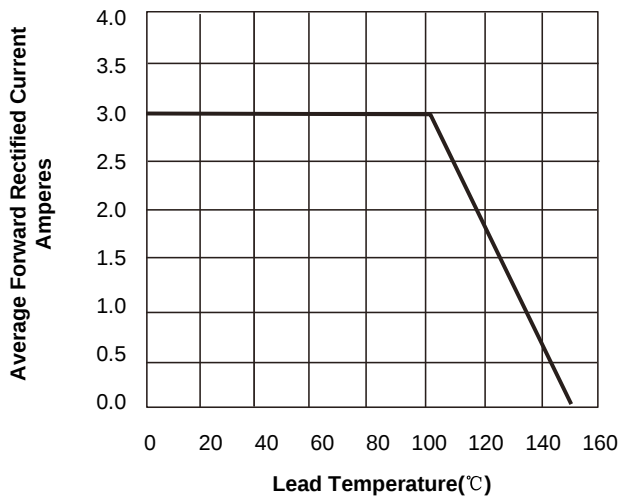


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD

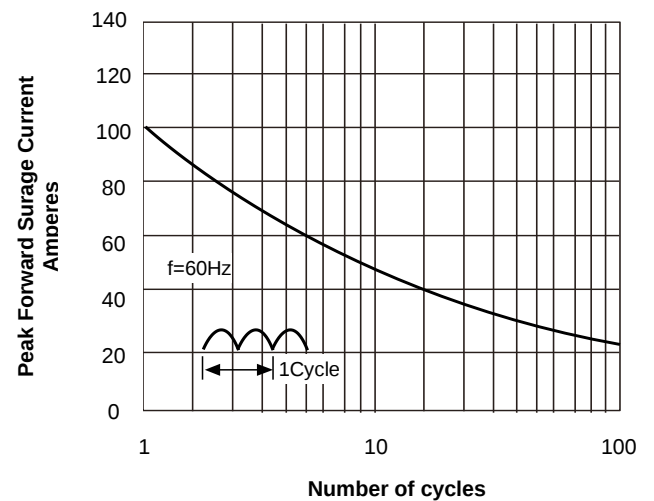


FIG.3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

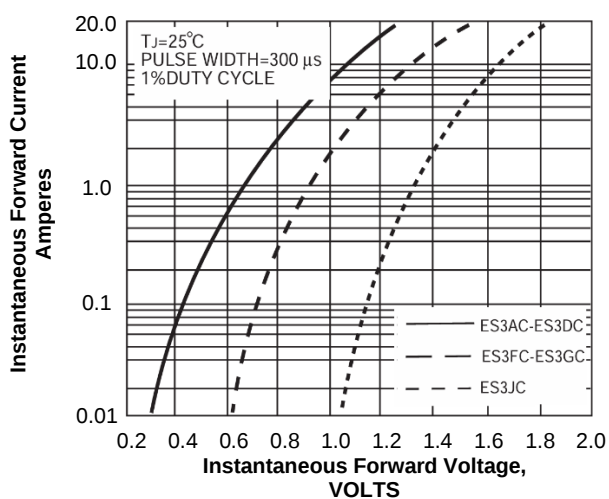
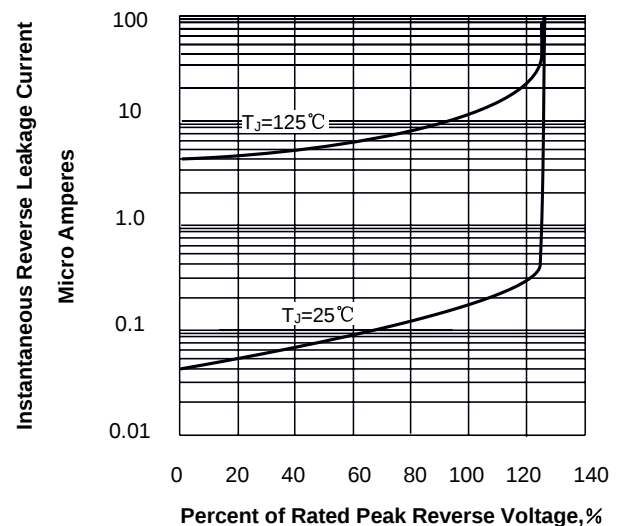
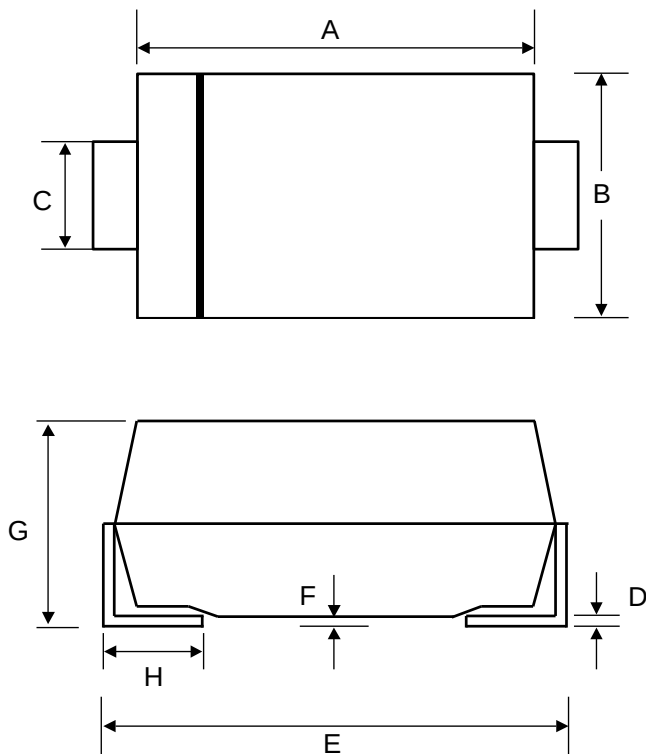


FIG.4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

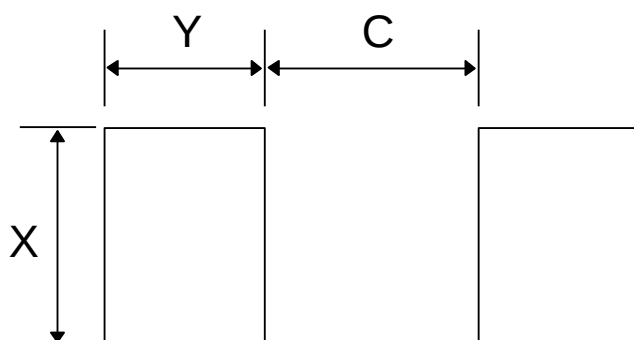


SMC Package Outline Drawing



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	6.60	7.11	0.260	0.280
B	5.59	6.22	0.220	0.245
C	2.90	3.20	0.114	0.126
D	-	0.20	-	0.008
E	7.75	8.13	0.305	0.320
F	----	0.20	----	0.008
G	2.06	2.62	0.079	0.103
H	0.76	1.52	0.030	0.060

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	4.30	0.170
Y	4.10	0.161
C	3.80	0.150

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