

Features

- Glass passivated superfast recovery Rectifiers
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260 °C, 10 s
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0



DO-214AB (SMC)

Typical Applications

For use of general purpose rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

Maximum Ratings (TA = 25 °C unless otherwise noted)									
Parameter	Symbol	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3J	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 output rectified current	$I_{F(AV)}$	3.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100							A
Rating for fusing(t<8.3ms)	I^2t	41							A ² sec
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							°C

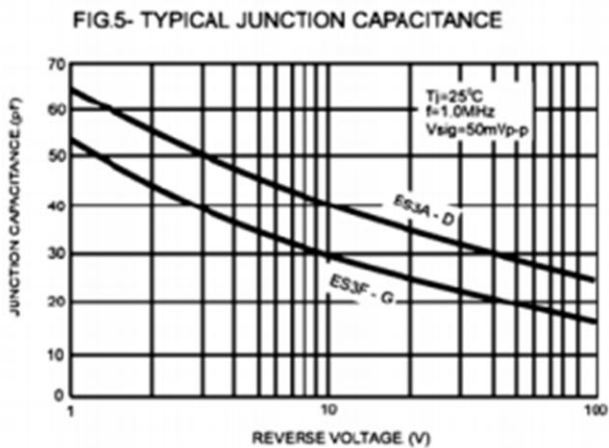
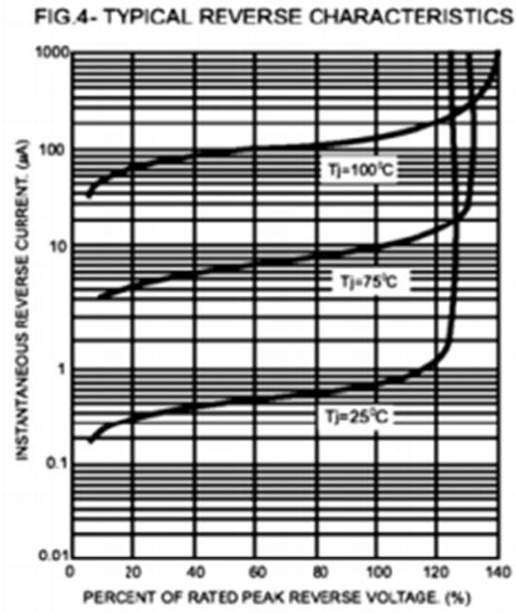
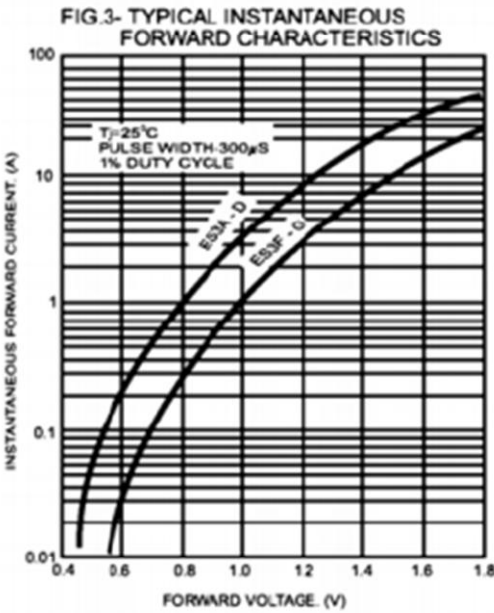
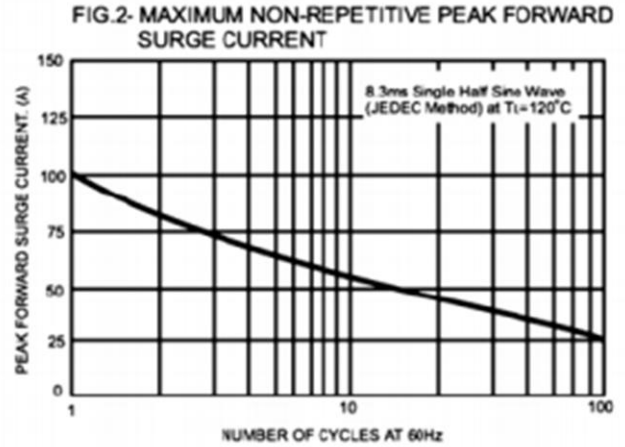
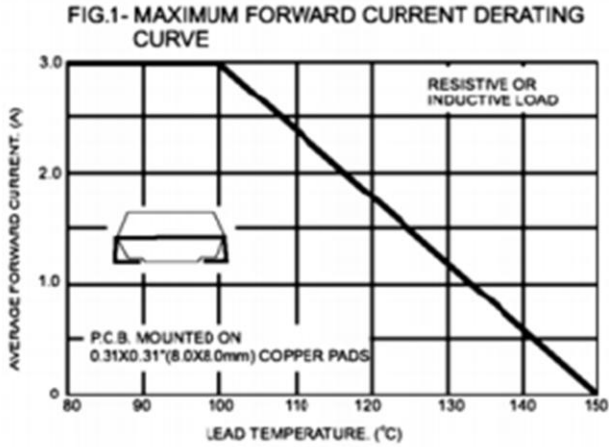
Electrical Characteristics (TA = 25 °C unless otherwise noted)										
Parameter	Test Conditions	Symbol	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3J	Unit
Maximum instantaneous forward voltage	$I_F=3.0A$ $T_A=25^\circ C$	V_F	0.95				1.3		1.7	Volts
Maximum DC reverse current at rated DC blocking voltage	$T_A=25^\circ C$	I_R	10.0							μA
	$T_A=100^\circ C$		500							
Maximum reverse recovery time	$I_F=0.5A, I_R=1.0A,$ $I_{RR}=0.25A$	t_{rr}	35							nS
Typical junction capacitance	4.0 V, 1 MHz	C_J	50				40		pF	

Thermal Characteristics									
Parameter	Symbol	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3J	Unit
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	47							$^\circ C/W$
	$R_{\theta JI}$	12							

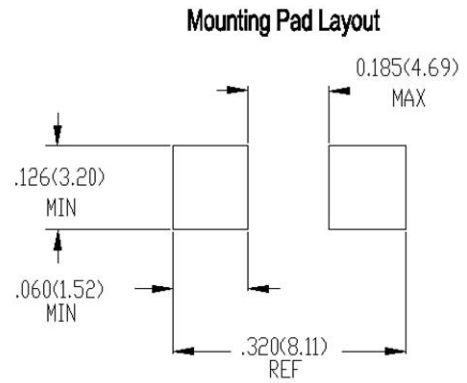
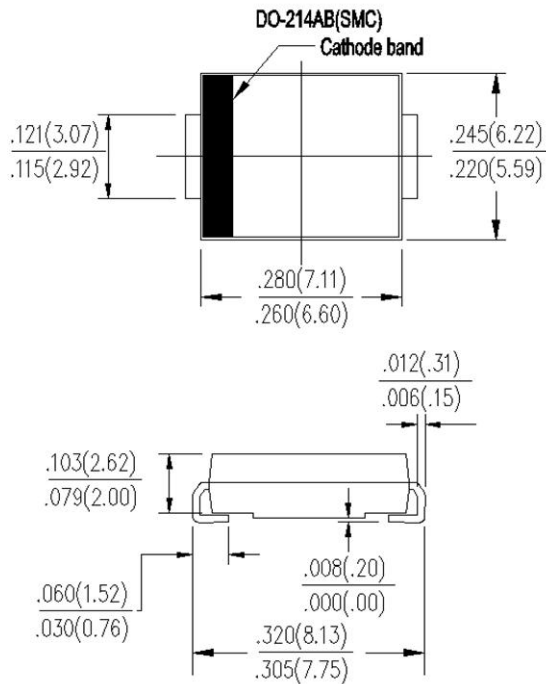
Notes:1. The thermal resistance from junction to ambient, case or mount, mounted on P.C.B with 8x8mm copper pads, 2 OZ, FR4 PCB

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)



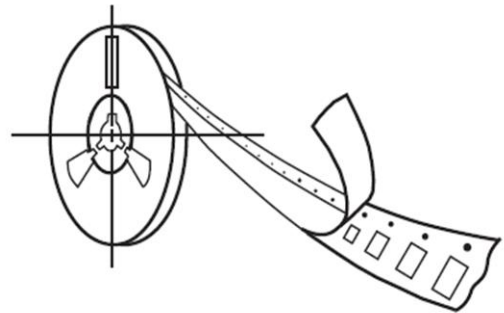
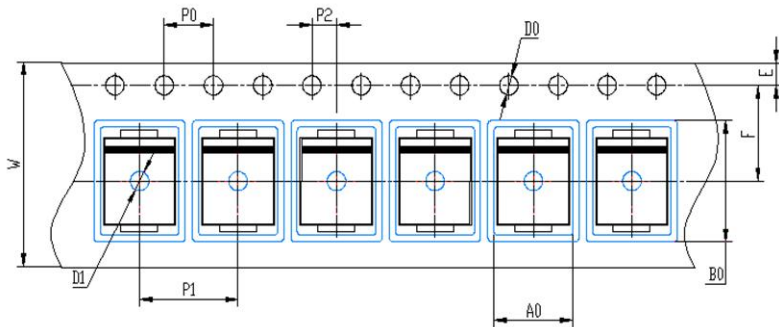
Package Outline Dimensions



Packing Information

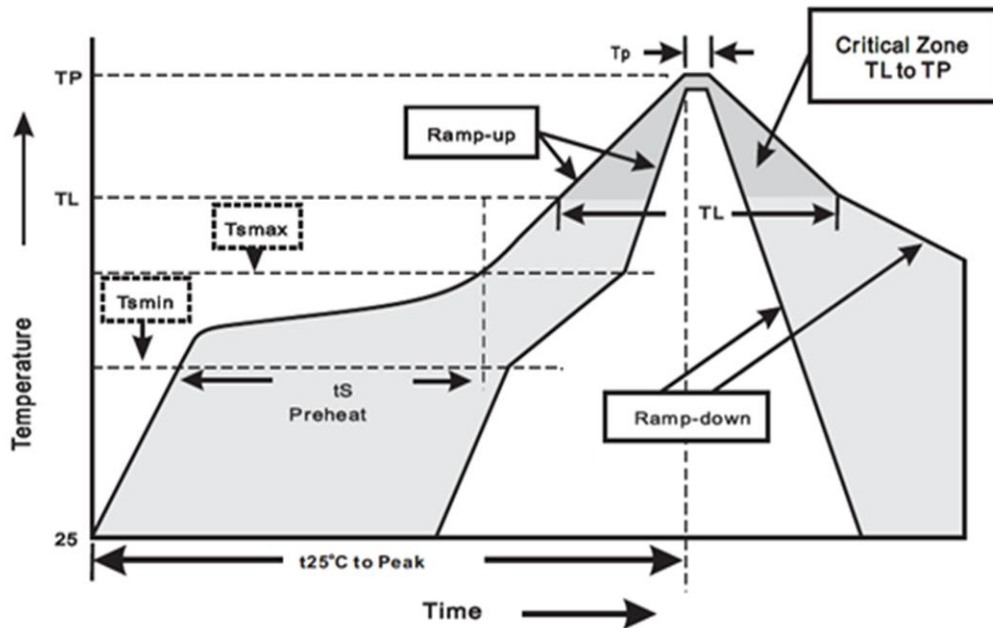
3000 pcs/Reel, 14 Reels/Box; 16mm Tape, 13" Reel

Tape & Reel Specification



Symbo	SMC(mm)
W	16 ± 0.2
E	1.75 ± 0.1
F	7.5 ± 0.05
D0	1.5 ± 0.1
D1	1.50 +0.1/-0
P0	4.0 ± 0.1
P1	8.0 ± 0.1
P2	2.0 ± 0.05
A0	6.22 ± 0.1
B0	8.31 ± 0.1

Soldering Parameters



Reflow Soldering		Sn-Pb Eutectic Assembly	Pb-Free assembly
Pre Heat	- Temperature Min	100°C	150°C
	- Temperature Max	150°C	200°C
	- Time (min to max) (ts)	60 – 120 secs	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max	3°C/second max
TS(max) to TL - Ramp-up Rate		3°C/second max	3°C/second max
Reflow	- Temperature (TL)	183°C	217°C
	- Time (min to max) (ts)	60 – 150 seconds	60 – 150 seconds
Peak Temperature (TP)		240+0/-5 °C	240+0/-5°C
Time within 5°C of actual peak Temperature (tp)		10 –30 seconds	20 – 40 seconds
Ramp-down Rate		6°C/second max	6°C/second max
Time 25°C to peak Temperature (TP)		6 minutes Max.	8 minutes Max.
Do not exceed		260°C	260°C

Wave Soldering	
Peak Temperature :	260+0/-5°C
Dipping Time :	10 seconds
Soldering :	1 time



ES3A thru ES3J

Surface Mount Glass Passivated Superfast Rectifier
Reverse Voltage 50 to 600V Forward Current 3A

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