

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
- Add suffix "E" for Halogen Free
- Halogen-free according to IEC 61249-2-21 definition



RoHS
COMPLIANT



DO-214AB(SMC)

Typical Applications

For use in secondary rectification and freewheeling for ultrafast switching speeds of converters in consumer and automotive applications.

Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter	Symbol	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5J	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	$I_{F(AV)}$	5.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150							A
Rating for fusing($t < 8.3ms$)	I^2t	93.8							A ² sec
Operating junction and storage temperature range	$T_{J,STG}$	-55 to +150							°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Test Conditions	Symbol	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5J	Unit
Maximum instantaneous forward voltage	$I_F=3.0A, T_a=25^\circ C$	V_F	0.95				1.3		1.7	Volts
	$I_F=3.0A, T_a=125^\circ C$		1.30							
Maximum DC reverse current at rated DC blocking voltage	$T_a=25^\circ C$	I_R	5.0							μA
	$T_a=125^\circ C$		100							
Maximum reverse recovery time	$I_F=0.5A, I_R=1.0A, I_{R,R}=0.25A$	t_{rr}	35							nS
Typical junction capacitance	4.0 V, 1 MHz	C_J	60							pF

Thermal Characteristics

Parameter	Symbol	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5J	Unit
Typical thermal resistance	$R_{\theta JA}^{(1)}$	27							$^\circ C/W$
	$R_{\theta JC}^{(1)}$	8							
	$R_{\theta JL}^{(1)}$	4							
	$R_{\theta JC}^{(2)}$	5							

Notes:1. The thermal resistance from junction to ambient,case or mount,mounted on P.C.B with 30x30mm copper pads,2 OZ,FR4 PCB

2. The thermal resistance from junction to case,mounted on P.C.B with 30x30mm copper pads,2 OZ,Aluminum substrate PCB

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

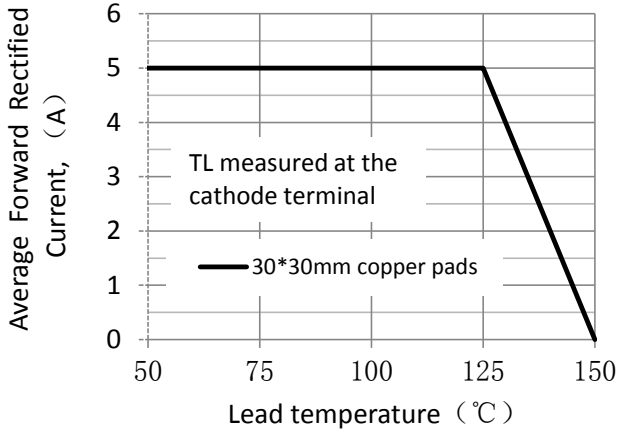


Figure 1. Forward Current Derating Curve

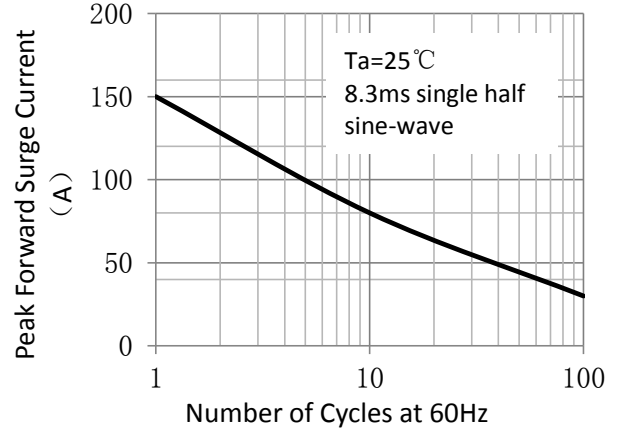


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

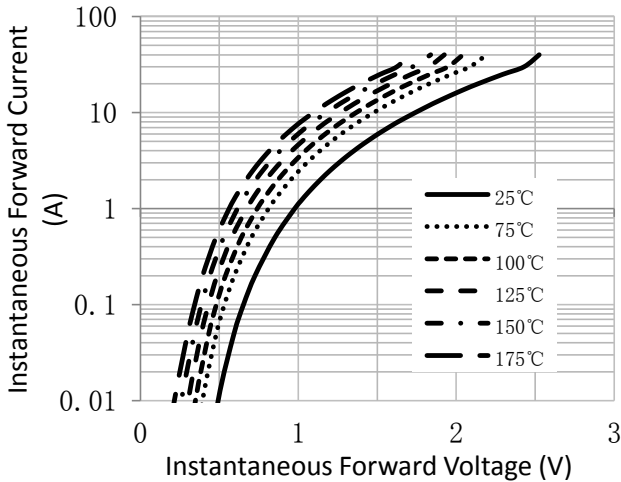


Figure 3. Typical Instantaneous Forward Characteristics

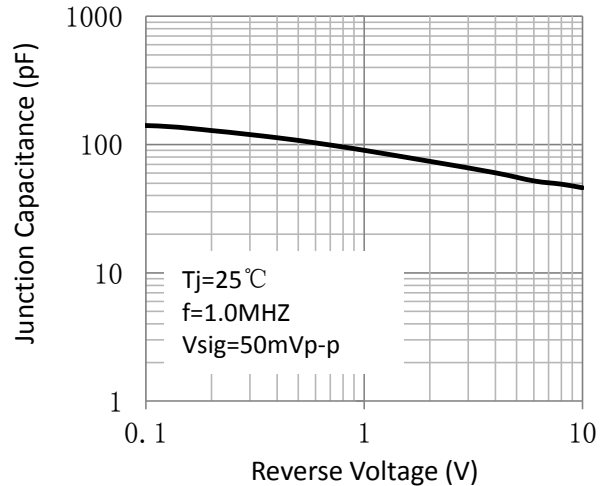


Figure 4. Typical Junction Capacitance

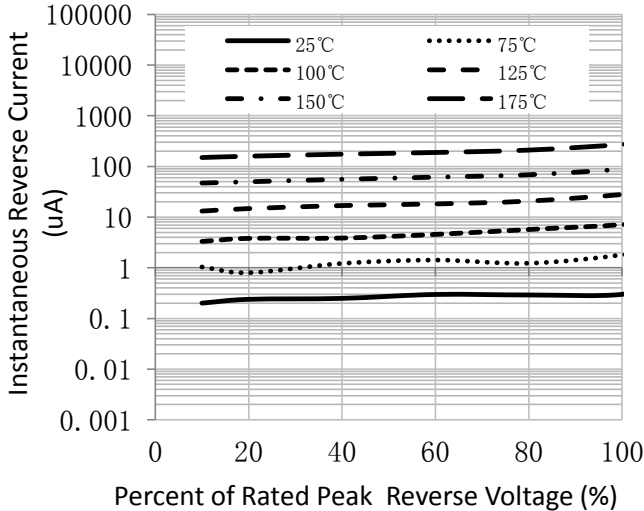
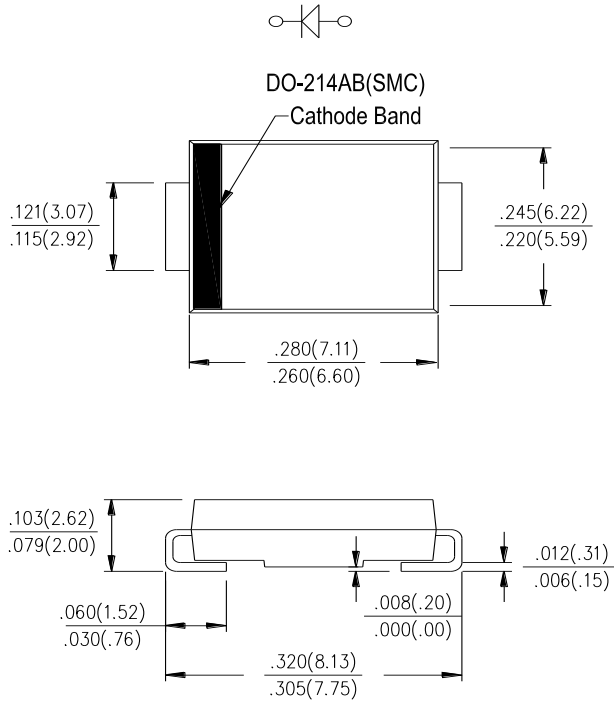


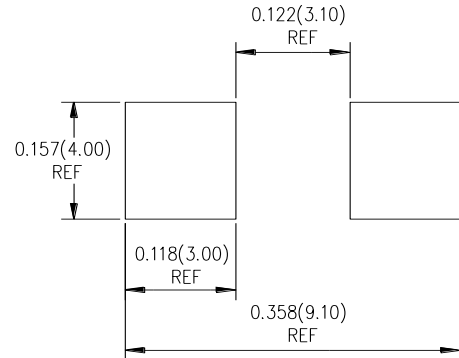
Figure 5. Typical Reverse Characteristics

Package Outline Dimensions

in inches (millimeters)



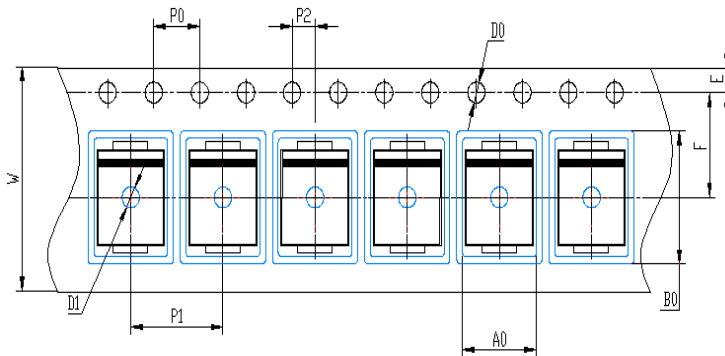
Mounting Pad Layout



Packing Information

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

Tape & Reel Specification



Symbols	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



ES5A thru ES5J

Surface Mount Glass Passivated Superfast Rectifier
Reverse Voltage 50 to 600V Forward Current 5.0A

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