

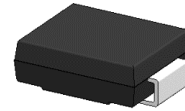
## 5A,50-600V Superfast Rectifiers

### Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds



**RoHS**  
COMPLIANT



SMC (DO-214AB)

### Applications

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

Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)									
Parameter	Symbol	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5J	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	600	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	300	400	600	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	5							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	150							A
Operating junction temperature range	T <sub>J</sub>	-55 to +150							°C
Storage temperature range	T <sub>STG</sub>	-55 to +150							°C

Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	65	°C / W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	10	°C / W
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	15	°C / W

## Electrical Specifications (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5J	Unit
Forward Drop Voltage	V <sub>F</sub>	I <sub>F</sub> =5A T <sub>A</sub> =25°C	0.95				1.40		1.70	V
		I <sub>F</sub> =5A T <sub>A</sub> =125°C	0.75				1.05		1.25	
Reverse leakage current @V <sub>R</sub>	I <sub>R</sub>	T <sub>J</sub> =25°C	5							uA
		T <sub>J</sub> =125°C	100							
Typical junction capacitance	C <sub>J</sub>	4.0 V 1 MHz	95.3				100.4		52.6	pF
Maximum reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A	35							nS

Note:

1. Mounted on copper pad area of 8.0 x 8.0mm to each terminal.

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

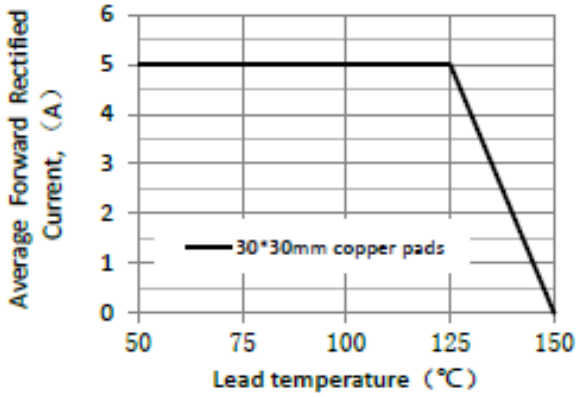


Figure 1. Forward Current Derating Curve

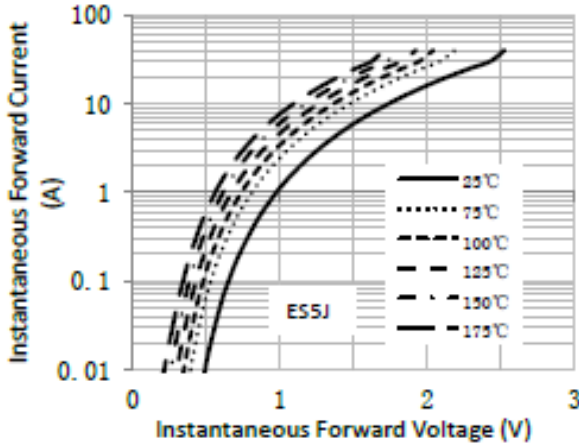


Figure 3. Typical Instantaneous Forward Characteristics

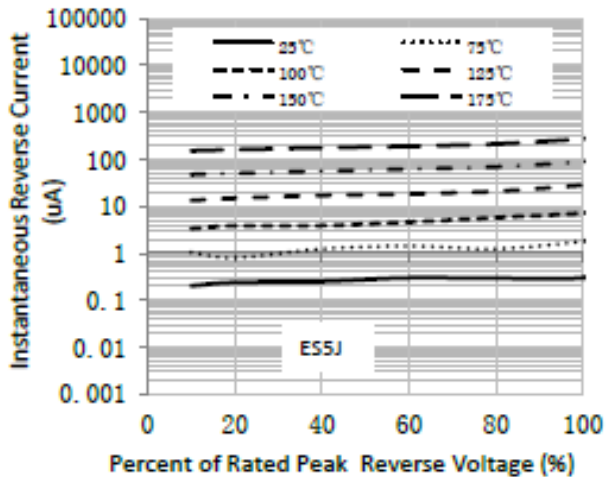


Figure 5. Typical Reverse Characteristics

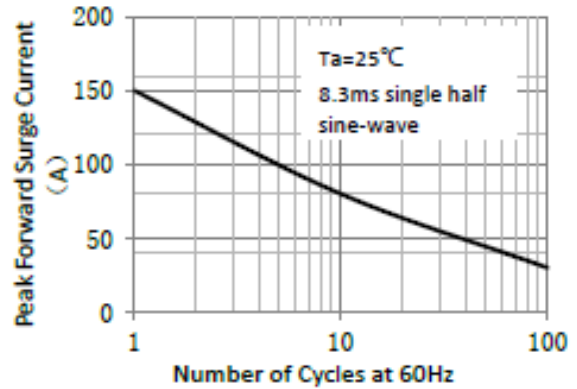


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

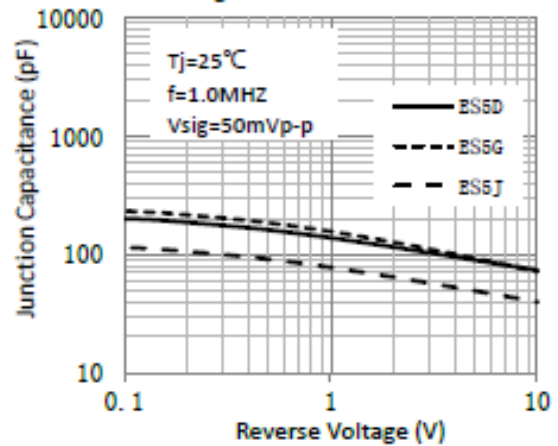


Figure 4. Typical Junction Capacitance

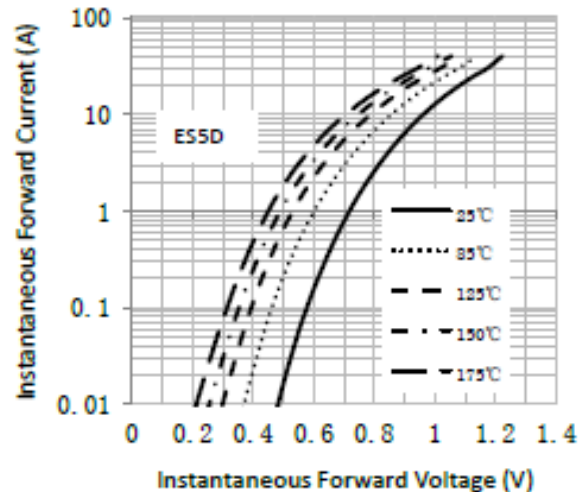


Figure 6. Typical Instantaneous Forward Characteristics

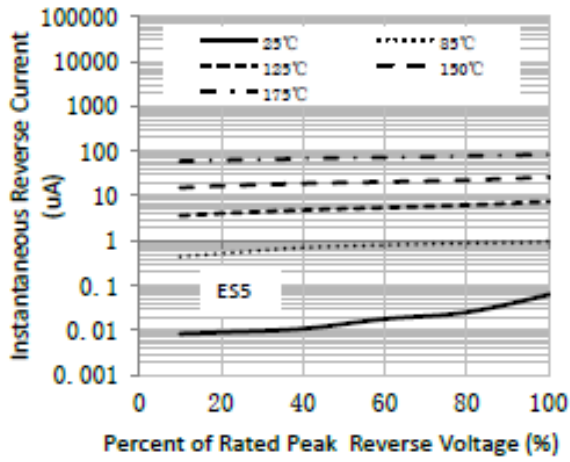


Figure 7. Typical Reverse Characteristics

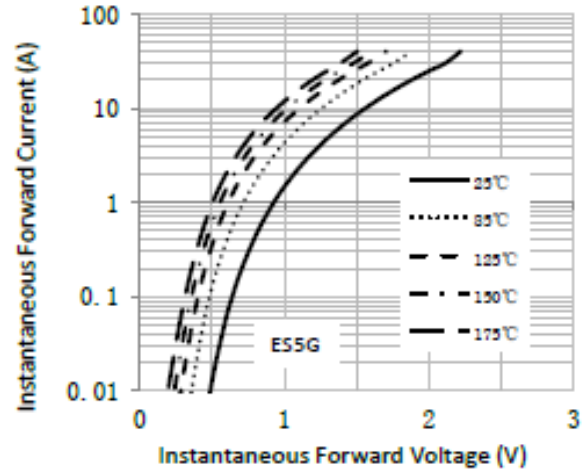


Figure 8. Typical Instantaneous Forward Characteristics

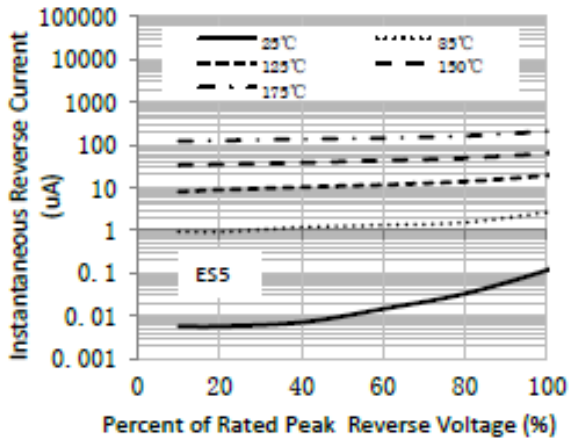
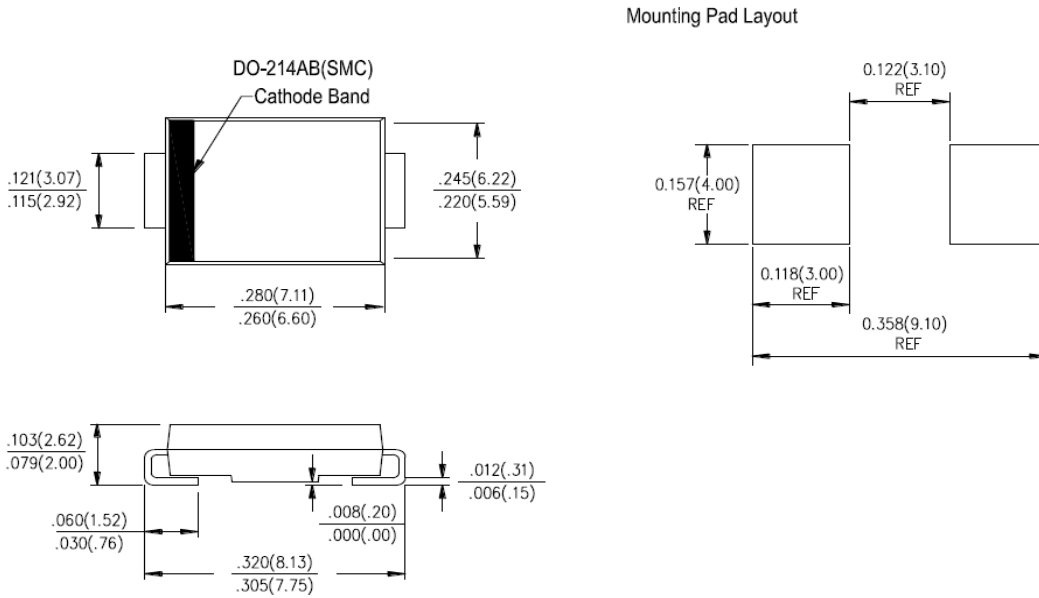


Figure 9. Typical Reverse Characteristics

## Package Outline Dimensions

in inches (millimeters)

### SMC (DO-214AB)



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.20	Modify document format

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