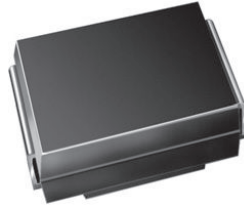




**THE DATASHEET OF**  
**SS23-E3/5BT**



## Surface Mount Schottky Barrier Rectifier


**SMB (DO-214AA)**

**RoHS**  
 COMPLIANT  
**HALOGEN**  
**FREE**  
 Available

### FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available  
- Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

### MECHANICAL DATA

**Case:** SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified

Base P/NHM3\_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified

("\_X" denotes revision code e.g. A, B, ....)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V
$I_{FSM}$	75 A
$V_F$	0.50 V, 0.70 V
$T_J$ max.	150 °C
Package	SMB (DO-214AA)
Diode variations	Single

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT	
Device marking code		S2	S3	S4	S5	S6		
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V	
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	V	
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	V	
Max. average forward rectified current at $T_L$ (fig. 1)	$I_{F(AV)}$	2.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	75						A
Non-repetitive avalanche energy at $T_A = 25\text{ °C}$ , $I_{AS} = 2.0\text{ A}$ , $L = 10\text{ mH}$	$E_{AS}$	20						mJ
Electrostatic discharge capacitor voltage Human body model: $C = 100\text{ pF}$ , $R = 1.5\text{ k}\Omega$	$V_C$	8.0						kV
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000						V/ $\mu$ s
Operating junction temperature range	$T_J$	-65 to +150						°C
Storage temperature range	$T_{STG}$	-65 to +150						°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	2.0 A	V <sub>F</sub>	0.5			0.7		V
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	0.4					mA
	T <sub>A</sub> = 100 °C		10					

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT	
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	75					°C/W	
	R <sub>θJL</sub>	17						

**Note**

<sup>(1)</sup> PCB mounted with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SS26-E3/52T	0.096	52T	750	7" diameter plastic tape and reel	
SS26-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel	
SS26HE3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel	
SS26HE3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel	
SS26-M3/52T	0.096	52T	750	7" diameter plastic tape and reel	
SS26-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel	
SS26HM3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel	
SS26HM3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel	

**Note**

<sup>(1)</sup> AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

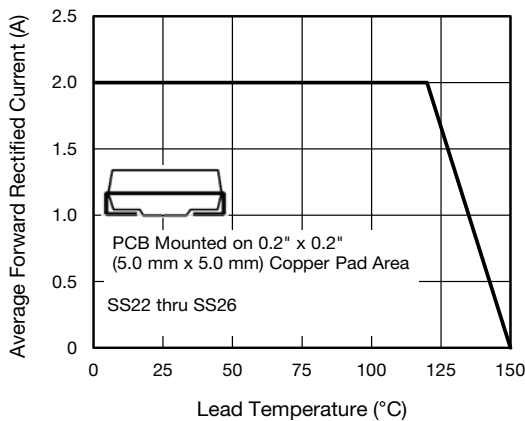


Fig. 1 - Forward Current Derating Curve

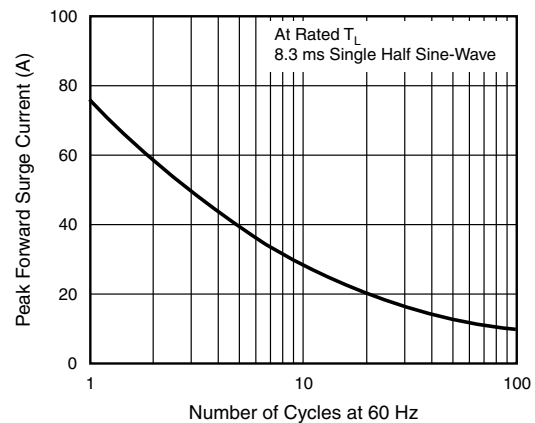


Fig. 2 - Maximum Non-Repetitive Surge Current

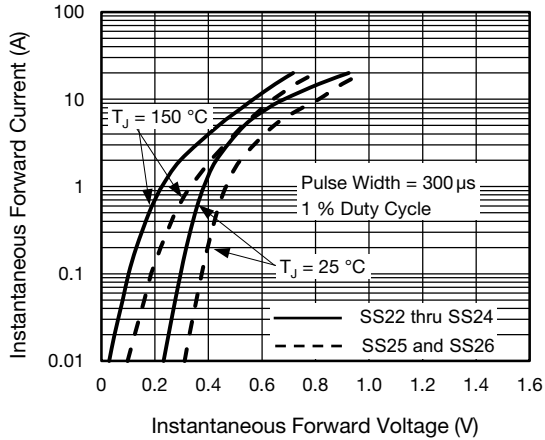


Fig. 3 - Typical Instantaneous Forward Characteristics

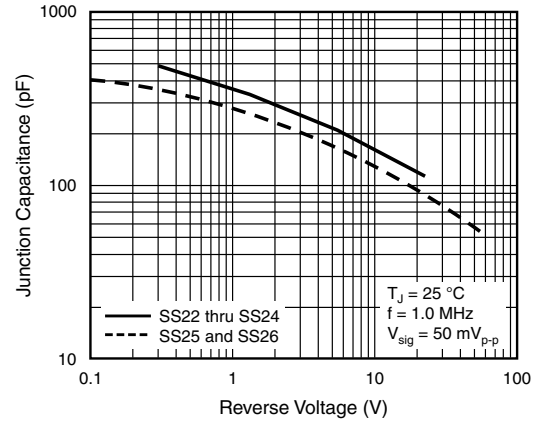


Fig. 5 - Typical Junction Capacitance

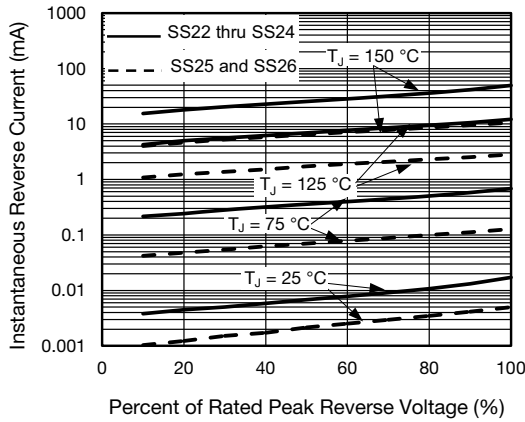
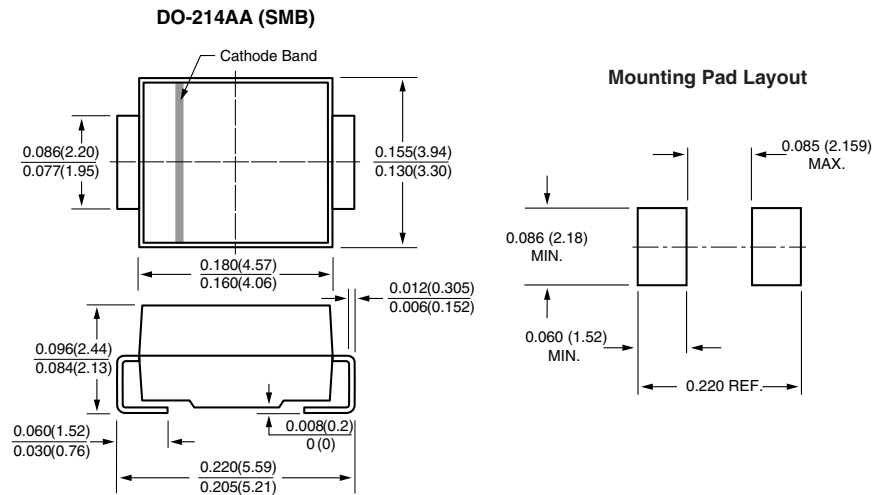


Fig. 4 - Typical Reverse Current Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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