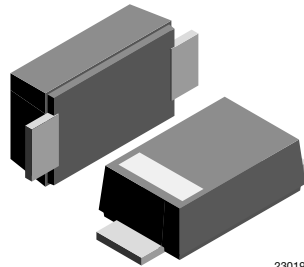


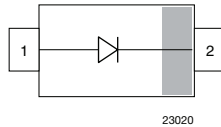
## Standard Recovery Rectifier High Voltage Surface Mount

### eSMP® Series



SMF (DO-219AB)

23019



23020

### FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Meets JESD 201 class 2 whisker test
- Wave and reflow solderable
- Base P/N-E3 - RoHS-compliant  
Base P/N-GS - RoHS-compliant and AEC-Q101 qualified
- Compatible to SOD-123W package case outline or SOD-123F and SOD-123FL
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



3D Models

### MECHANICAL DATA

**Case:** SMF (DO-219AB)

**Polarity:** band denotes cathode end

**Weight:** approx. 15 mg

**Packaging codes / options:**

GS18/10K per 13" reel (8 mm tape)

GS08/3K per 7" reel (8 mm tape)

**Circuit configuration:** single

PARTS TABLE			
PART	ORDERING CODE	MARKING	REMARKS
S07B	S07B-E3-18 or S07B-E3-08	Y0	Tape and reel
	S07B-GS18 or S07B-GS08	SB	
S07D	S07D-E3-18 or S07D-E3-08	Y1	Tape and reel
	S07D-GS18 or S07D-GS08	SD	
S07G	S07G-E3-18 or S07G-E3-08	Y2	Tape and reel
	S07G-GS18 or S07G-GS08	SG	
S07J	S07J-E3-18 or S07J-E3-08	Y3	Tape and reel
	S07J-GS18 or S07J-GS08	SJ	
S07M	S07M-E3-18 or S07M-E3-08	Y4	Tape and reel
	S07M-GS18 or S07M-GS08	SM	



ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		S07B	V <sub>RRM</sub>	100	V
		S07D	V <sub>RRM</sub>	200	V
		S07G	V <sub>RRM</sub>	400	V
		S07J	V <sub>RRM</sub>	600	V
		S07M	V <sub>RRM</sub>	1000	V
Maximum RMS voltage		S07B	V <sub>RMS</sub>	70	V
		S07D	V <sub>RMS</sub>	140	V
		S07G	V <sub>RMS</sub>	280	V
		S07J	V <sub>RMS</sub>	420	V
		S07M	V <sub>RMS</sub>	700	V
Maximum DC blocking voltage		S07B	V <sub>DC</sub>	100	V
		S07D	V <sub>DC</sub>	200	V
		S07G	V <sub>DC</sub>	400	V
		S07J	V <sub>DC</sub>	600	V
Maximum average forward rectified current	T <sub>L</sub> = 110 °C <sup>(1)</sup>		I <sub>F(AV)</sub>	1.5	A
	T <sub>A</sub> = 65 °C <sup>(1)</sup>		I <sub>F(AV)</sub>	0.7	A
Peak forward surge current 8.3 ms single half sine-wave	T <sub>L</sub> = 25 °C		I <sub>FSM</sub>	25	A

**Note**

<sup>(1)</sup> Averaged over any 20 ms period

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	180	K/W
Operating junction and storage temperature range		T <sub>j</sub> , T <sub>stg</sub>	-65 to +175	°C

**Note**

<sup>(1)</sup> Mounted on epoxy substrate with 3 mm x 3 mm Cu pads (≥ 40 μm thick)

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 1 A <sup>(1)</sup>	S07B	V <sub>F</sub>			1.1	V
		S07D	V <sub>F</sub>			1.1	V
		S07G	V <sub>F</sub>			1.1	V
		S07J	V <sub>F</sub>			1.1	V
		S07M	V <sub>F</sub>			1.1	V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	S07B	I <sub>R</sub>			10	μA
		S07D	I <sub>R</sub>			10	μA
		S07G	I <sub>R</sub>			10	μA
		S07J	I <sub>R</sub>			10	μA
		S07M	I <sub>R</sub>			10	μA
	T <sub>A</sub> = 125 °C	S07B	I <sub>R</sub>			50	μA
		S07D	I <sub>R</sub>			50	μA
		S07G	I <sub>R</sub>			50	μA
		S07J	I <sub>R</sub>			50	μA
		S07M	I <sub>R</sub>			50	μA
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, I <sub>rr</sub> = 0.25 A	S07B	t <sub>rr</sub>			1800	ns
		S07D	t <sub>rr</sub>			1800	ns
		S07G	t <sub>rr</sub>			1800	ns
		S07J	t <sub>rr</sub>			1800	ns
		S07M	t <sub>rr</sub>			1800	ns
Typical capacitance	4 V, 1 MHz	S07B	C <sub>j</sub>		4		pF
		S07D	C <sub>j</sub>		4		pF
		S07G	C <sub>j</sub>		4		pF
		S07J	C <sub>j</sub>		4		pF
		S07M	C <sub>j</sub>		4		pF

**Note**

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

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

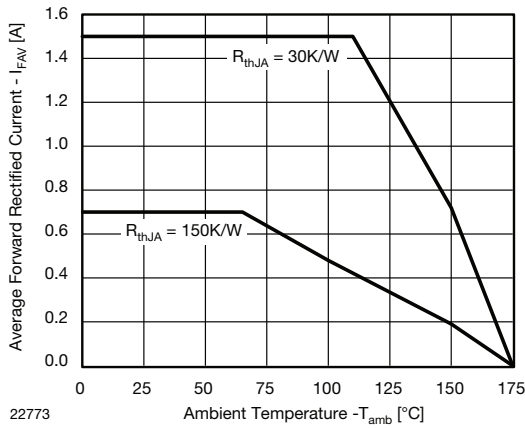


Fig. 1 - Forward Current Derating Curve

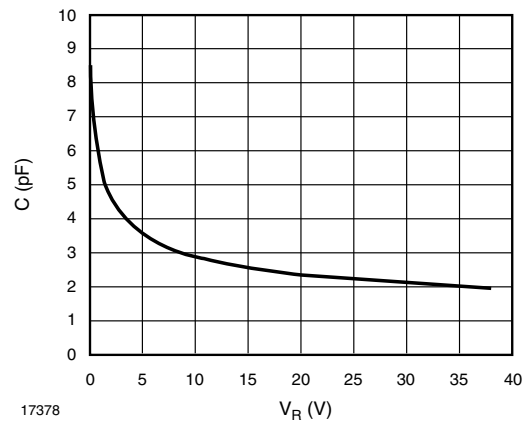


Fig. 4 - Capacitance vs. Reverse Voltage

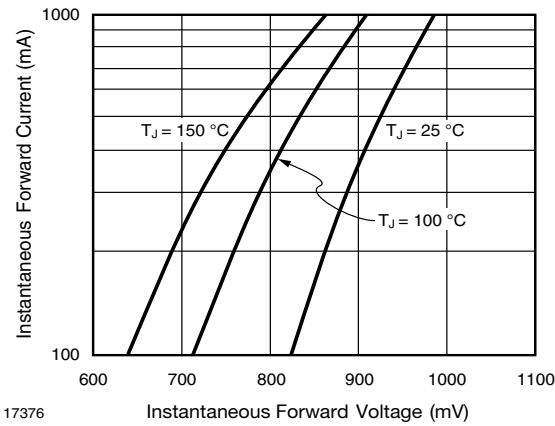


Fig. 2 - Typical Instantaneous Forward Characteristics

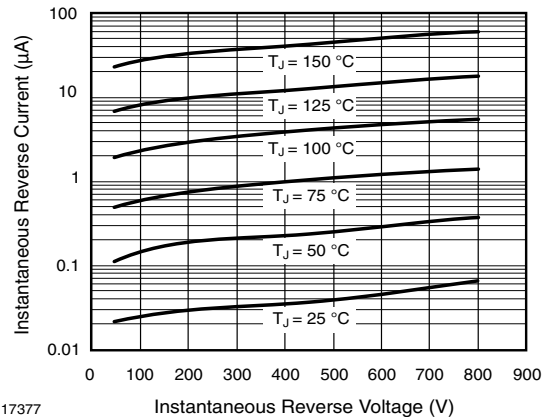
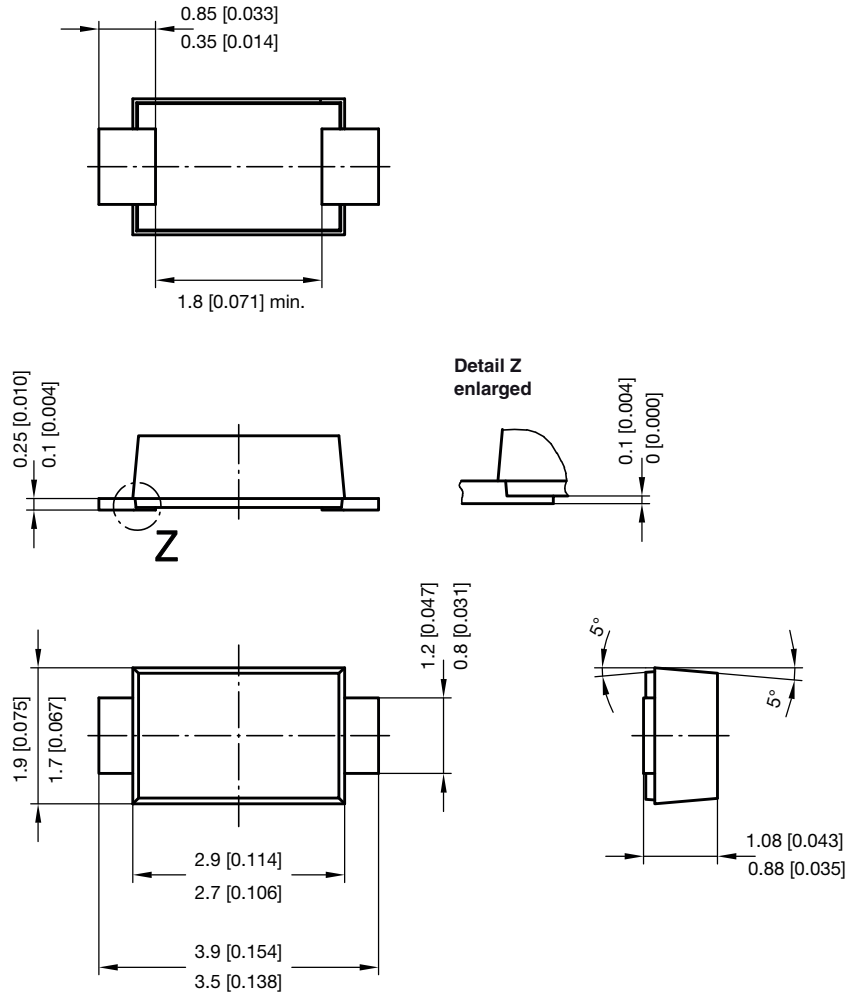


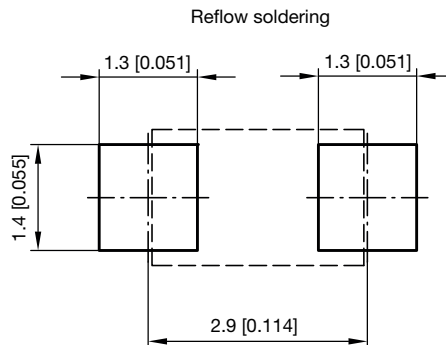
Fig. 3 - Typical Instantaneous Reverse Characteristics



PACKAGE DIMENSIONS in millimeters (inches): SMF (DO-219AB)



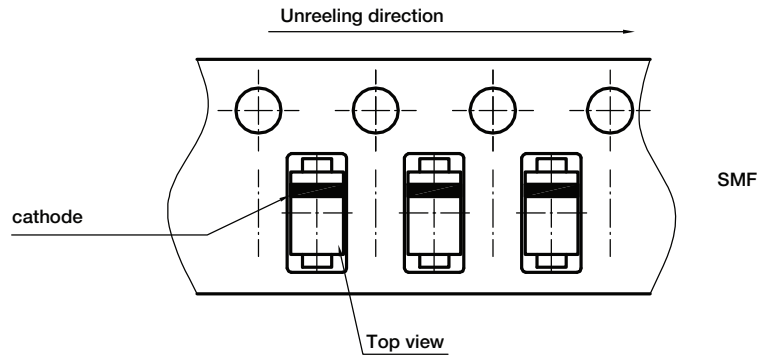
foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 6 - Date: 24.Feb.2021  
 Document no.: S8-V-3915.01-001 (4)  
 22989



**ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)**



Document no.: S8-V-3717.02-003 (4)  
Created - Date: 09. Feb. 2010  
22670



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