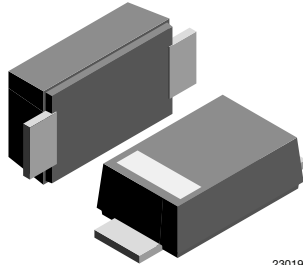


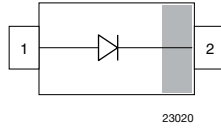


## Standard Recovery Rectifier High Voltage Surface Mount

### eSMP® Series



SMF (DO-219AB)



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
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

### DESIGN SUPPORT TOOLS

[click logo to get started](#)



### 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-GS18 or S07B-GS08	SB	Tape and reel
S07D	S07D-GS18 or S07D-GS08	SD	Tape and reel
S07G	S07G-GS18 or S07G-GS08	SG	Tape and reel
S07J	S07J-GS18 or S07J-GS08	SJ	Tape and reel
S07M	S07M-GS18 or S07M-GS08	SM	Tape and reel

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
		S07M	V <sub>DC</sub>	1000	V
Maximum average forward rectified current	T <sub>L</sub> = 110 °C (1)		I <sub>F(AV)</sub>	1.5	A
	T <sub>A</sub> = 65 °C (1)		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

(1) 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<sub>amb</sub> = 25 °C, unless otherwise specified)

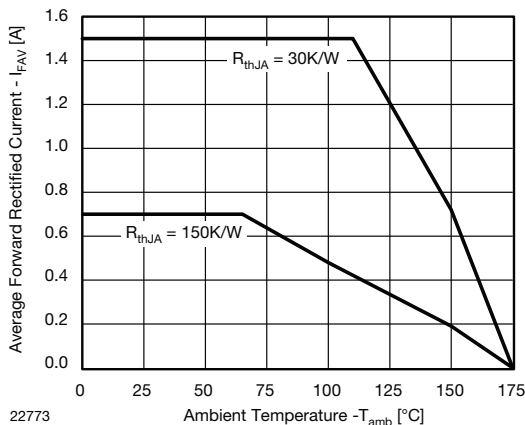


Fig. 1 - Forward Current Derating Curve

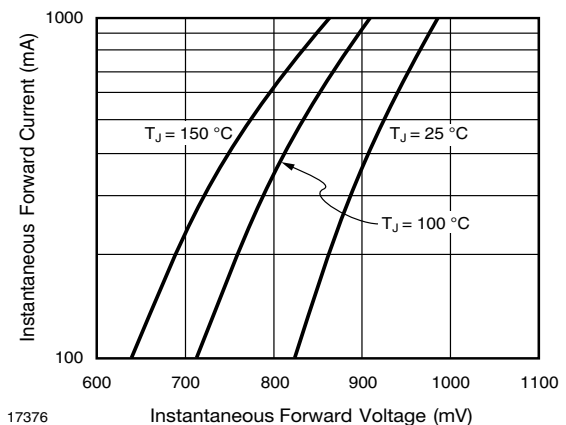


Fig. 2 - Typical Instantaneous Forward Characteristics

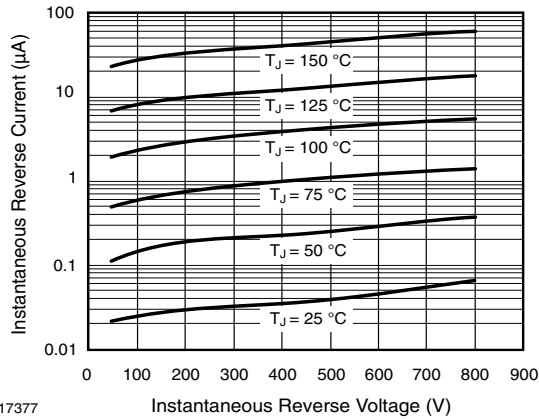


Fig. 3 - Typical Instantaneous Reverse Characteristics

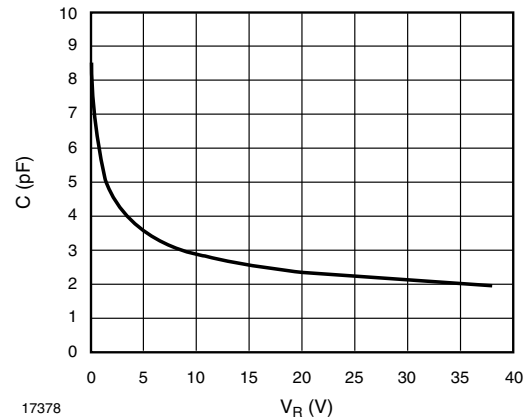
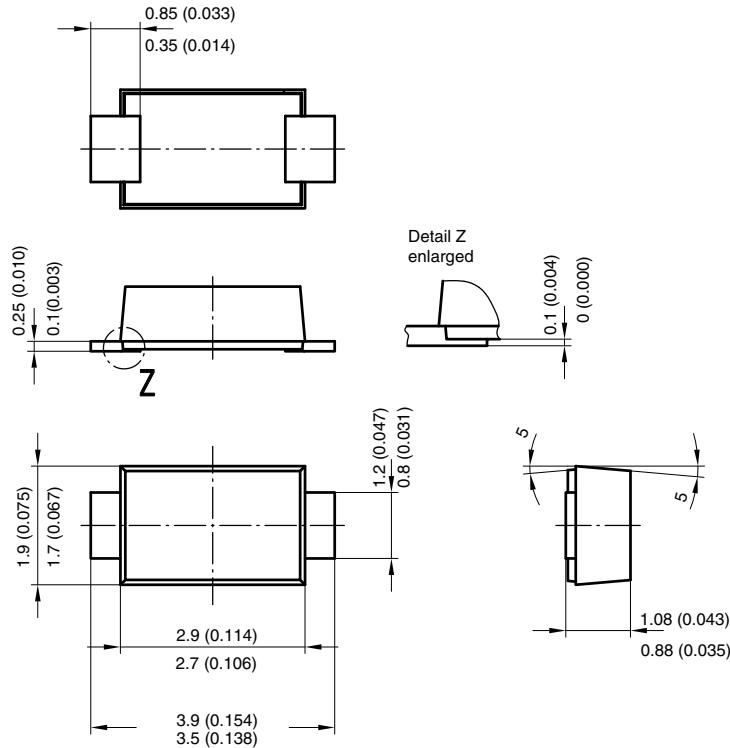
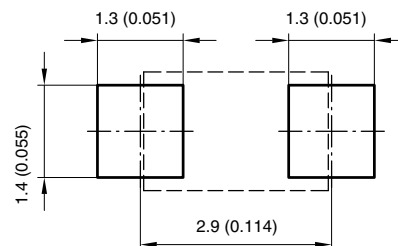


Fig. 4 - Capacitance vs. Reverse Voltage

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



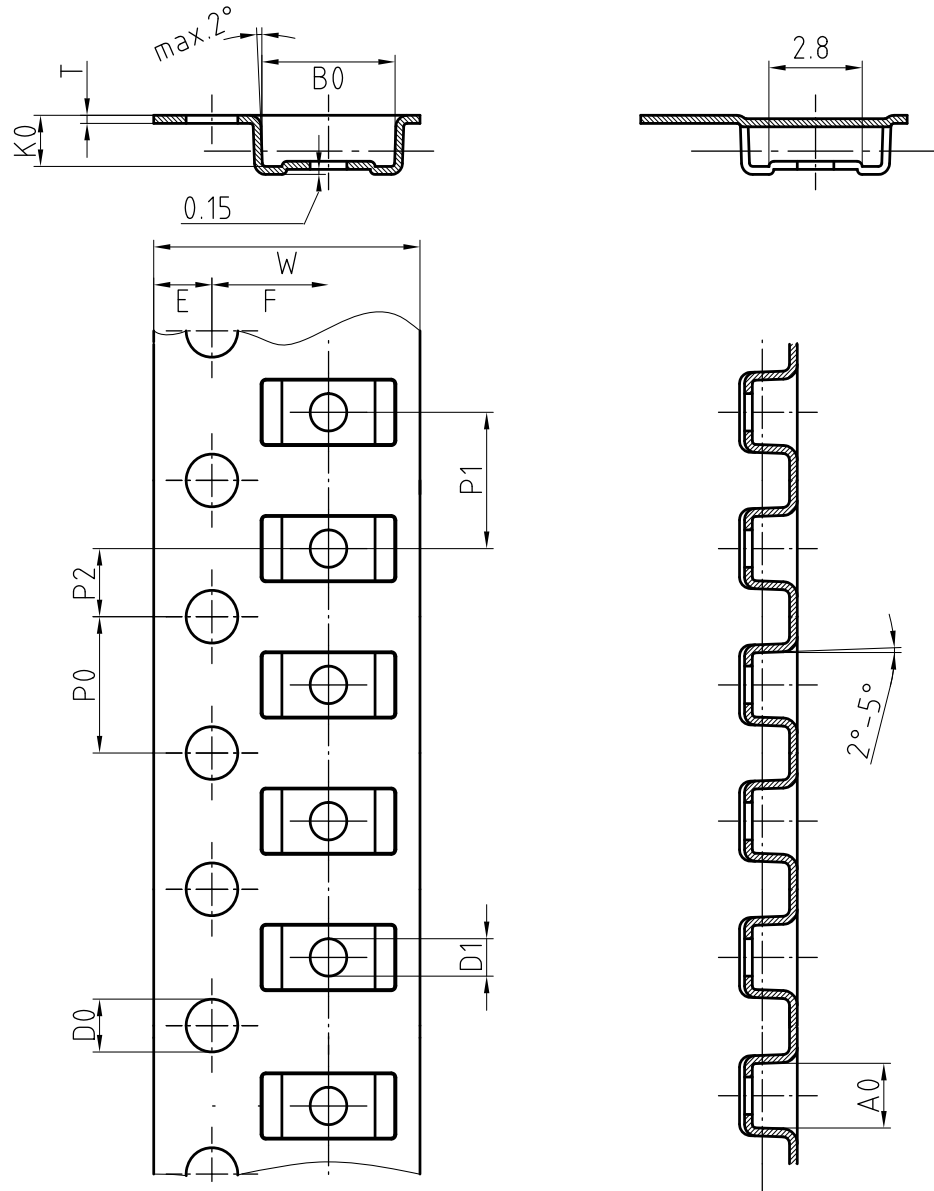
Foot print recommendation:



Created - Date: 15. February 2005  
Rev. 3 - Date: 13. March 2007  
Document no.: S8-V-3915.01-001 (4)  
17247



**BLISTER TAPE DIMENSIONS** in millimeters: **SMF (DO-219AB)**



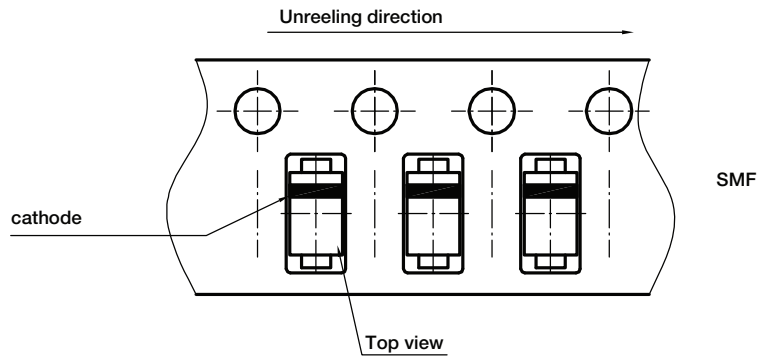
Mat:	A0	B0	K0	W	T	P0	P2	P1	D0	D1	E	F
PS	1.9	4.0	1.5	8.0	0.235	4.0	2.0	4.0	1.5	1	1.75	3.5

Document-No.: S8-V-3717.02-001 (3)

18513



**ORIENTATION IN CARRIER TAPE - SMF**



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



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