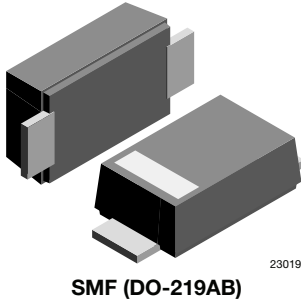


# Standard Recovery Rectifier High Voltage Surface Mount

**eSMP® Series**

**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
- 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**

**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** ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		S07B	$V_{RRM}$	100	V
		S07D	$V_{RRM}$	200	V
		S07G	$V_{RRM}$	400	V
		S07J	$V_{RRM}$	600	V
		S07M	$V_{RRM}$	1000	V
Maximum RMS voltage		S07B	$V_{RMS}$	70	V
		S07D	$V_{RMS}$	140	V
		S07G	$V_{RMS}$	280	V
		S07J	$V_{RMS}$	420	V
		S07M	$V_{RMS}$	700	V
Maximum DC blocking voltage		S07B	$V_{DC}$	100	V
		S07D	$V_{DC}$	200	V
		S07G	$V_{DC}$	400	V
		S07J	$V_{DC}$	600	V
		S07M	$V_{DC}$	1000	V
Maximum average forward rectified current	$T_L = 110\text{ °C}^{(1)}$		$I_{F(AV)}$	1.5	A
	$T_A = 65\text{ °C}^{(1)}$		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms single half sine-wave	$T_L = 25\text{ °C}$		$I_{FSM}$	25	A

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

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	180	K/W
Operating junction and storage temperature range		$T_j, T_{stg}$	-65 to +175	$^{\circ}\text{C}$

**Note**

<sup>(1)</sup> Mounted on epoxy substrate with 3 mm x 3 mm Cu pads ( $\geq 40\text{ }\mu\text{m}$  thick)

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

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 1\text{ A}$ <sup>(1)</sup>	S07B	$V_F$			1.1	V
		S07D	$V_F$			1.1	V
		S07G	$V_F$			1.1	V
		S07J	$V_F$			1.1	V
		S07M	$V_F$			1.1	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	S07B	$I_R$			10	$\mu\text{A}$
		S07D	$I_R$			10	$\mu\text{A}$
		S07G	$I_R$			10	$\mu\text{A}$
		S07J	$I_R$			10	$\mu\text{A}$
		S07M	$I_R$			10	$\mu\text{A}$
	$T_A = 125\text{ }^{\circ}\text{C}$	S07B	$I_R$			50	$\mu\text{A}$
		S07D	$I_R$			50	$\mu\text{A}$
		S07G	$I_R$			50	$\mu\text{A}$
		S07J	$I_R$			50	$\mu\text{A}$
		S07M	$I_R$			50	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$	S07B	$t_{rr}$			1800	ns
		S07D	$t_{rr}$			1800	ns
		S07G	$t_{rr}$			1800	ns
		S07J	$t_{rr}$			1800	ns
		S07M	$t_{rr}$			1800	ns
Typical capacitance	4 V, 1 MHz	S07B	$C_j$		4		pF
		S07D	$C_j$		4		pF
		S07G	$C_j$		4		pF
		S07J	$C_j$		4		pF
		S07M	$C_j$		4		pF

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

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

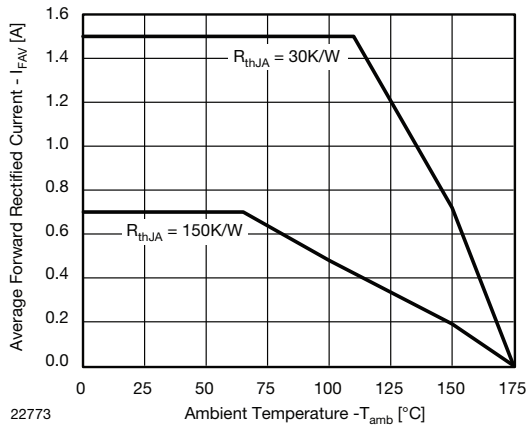


Fig. 1 - Forward Current Derating Curve

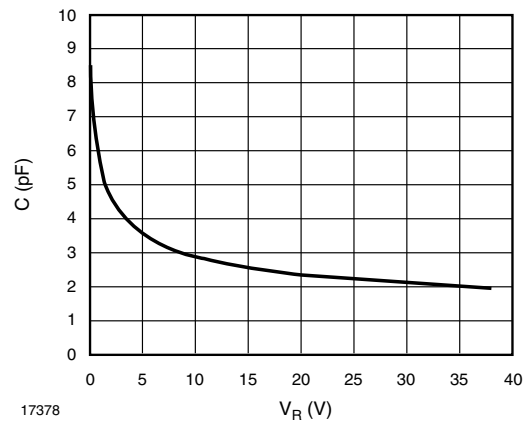


Fig. 4 - Capacitance vs. Reverse Voltage

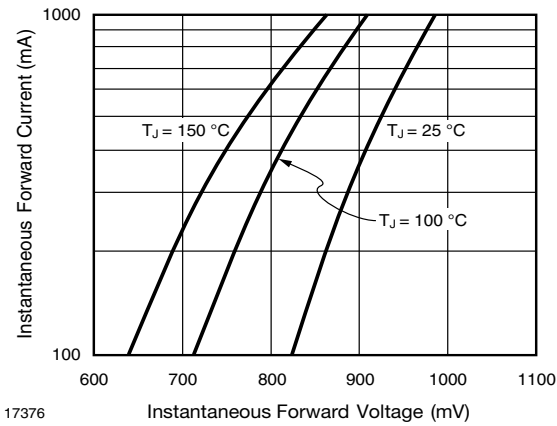


Fig. 2 - Typical Instantaneous Forward Characteristics

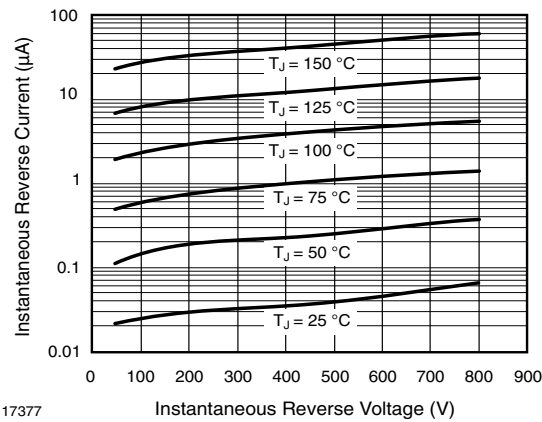
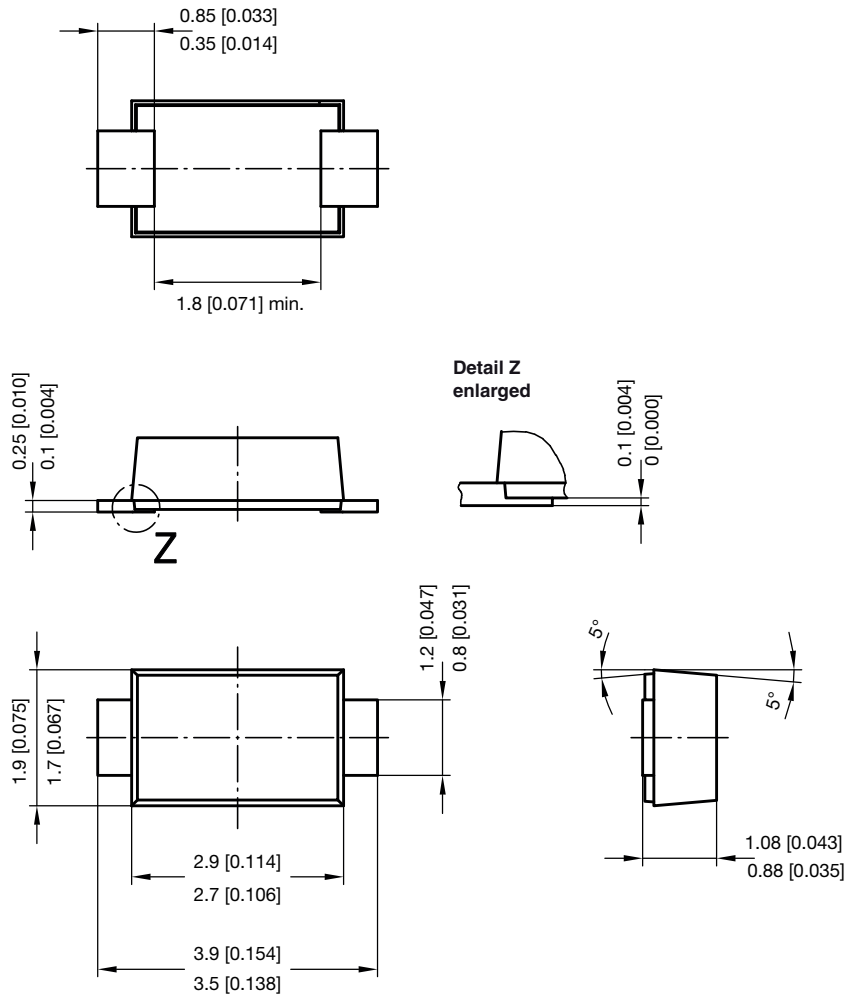
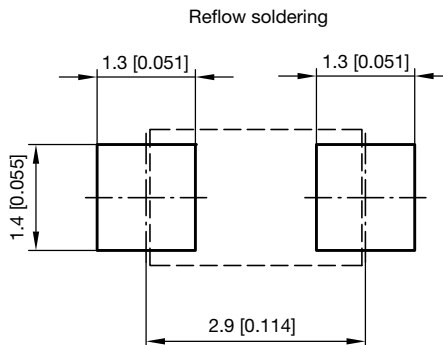


Fig. 3 - Typical Instantaneous Reverse Characteristics

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



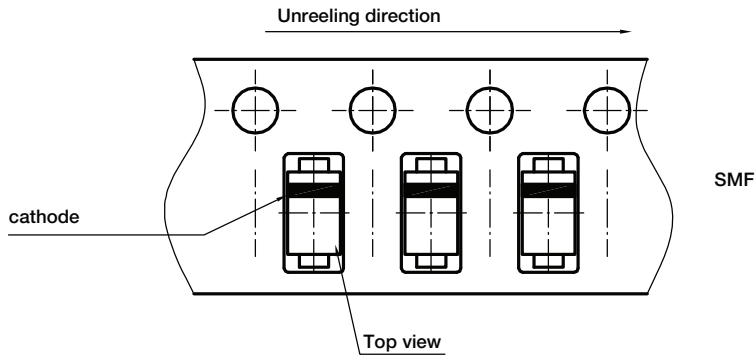
foot print recommendation:



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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