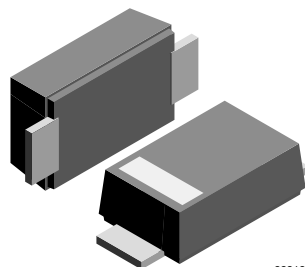
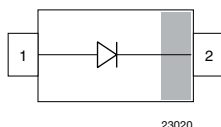


## Standard Recovery Rectifier High Voltage Surface-Mount

### 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
- Base P/N-M3 - halogen-free, RoHS-compliant  
Base P/N-M - halogen-free, 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  
HALOGEN  
**FREE**

### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

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

**Polarity:** band denotes cathode end

**Weight:** approx. 15 mg

**Packaging codes / options:**

18/10K per 13" reel (8 mm tape)

08/3K per 7" reel (8 mm tape)

**Circuit configuration:** single

PARTS TABLE			
PART	ORDERING CODE	MARKING	REMARKS
S07B-M	S07B-M3-18 or S07B-M3-08	Y5	Tape and reel
	S07B-M-18 or S07B-M-08	UB	
S07D-M	S07D-M3-18 or S07D-M3-08	Y6	Tape and reel
	S07D-M-18 or S07D-M-08	UD	
S07G-M	S07G-M3-18 or S07G-M3-08	Y7	Tape and reel
	S07G-M-18 or S07G-M-08	UG	
S07J-M	S07J-M3-18 or S07J-M3-08	Y8	Tape and reel
	S07J-M-18 or S07J-M-08	UJ	
S07M-M	S07M-M3-18 or S07M-M3-08	Y9	Tape and reel
	S07M-M-18 or S07M-M-08	UM	

**ABSOLUTE MAXIMUM RATINGS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		S07B-M	$V_{RRM}$	100	V
		S07D-M	$V_{RRM}$	200	V
		S07G-M	$V_{RRM}$	400	V
		S07J-M	$V_{RRM}$	600	V
		S07M-M	$V_{RRM}$	1000	V
Maximum RMS voltage		S07B-M	$V_{RMS}$	70	V
		S07D-M	$V_{RMS}$	140	V
		S07G-M	$V_{RMS}$	280	V
		S07J-M	$V_{RMS}$	420	V
		S07M-M	$V_{RMS}$	700	V
Maximum DC blocking voltage		S07B-M	$V_{DC}$	100	V
		S07D-M	$V_{DC}$	200	V
		S07G-M	$V_{DC}$	400	V
		S07J-M	$V_{DC}$	600	V
		S07M-M	$V_{DC}$	1000	V
Maximum average forward rectified current	$T_L = 110\text{ }^{\circ}\text{C}$ <sup>(1)</sup>		$I_{F(AV)}$	1.5	A
	$T_A = 65\text{ }^{\circ}\text{C}$ <sup>(1)</sup>		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms single half	$T_L = 25\text{ }^{\circ}\text{C}$		$I_{FSM}$	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-M	$V_F$			1.1	V
		S07D-M	$V_F$			1.1	V
		S07G-M	$V_F$			1.1	V
		S07J-M	$V_F$			1.1	V
		S07M-M	$V_F$			1.1	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	S07B-M	$I_R$			10	$\mu\text{A}$
		S07D-M	$I_R$			10	$\mu\text{A}$
		S07G-M	$I_R$			10	$\mu\text{A}$
		S07J-M	$I_R$			10	$\mu\text{A}$
		S07M-M	$I_R$			10	$\mu\text{A}$
	$T_A = 125\text{ }^{\circ}\text{C}$	S07B-M	$I_R$			50	$\mu\text{A}$
		S07D-M	$I_R$			50	$\mu\text{A}$
		S07G-M	$I_R$			50	$\mu\text{A}$
		S07J-M	$I_R$			50	$\mu\text{A}$
		S07M-M	$I_R$			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-M	$t_{rr}$			1800	ns
		S07D-M	$t_{rr}$			1800	ns
		S07G-M	$t_{rr}$			1800	ns
		S07J-M	$t_{rr}$			1800	ns
		S07M-M	$t_{rr}$			1800	ns
Typical capacitance	4 V, 1 MHz	S07B-M	$C_j$		4		pF
		S07D-M	$C_j$		4		pF
		S07G-M	$C_j$		4		pF
		S07J-M	$C_j$		4		pF
		S07M-M	$C_j$		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)

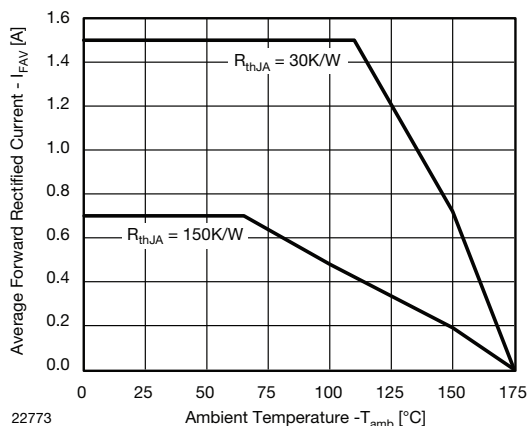


Fig. 1 - Forward Current Derating Curve

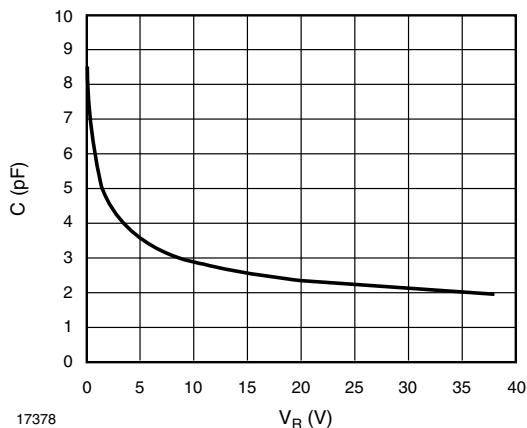


Fig. 4 - Capacitance vs. Reverse Voltage

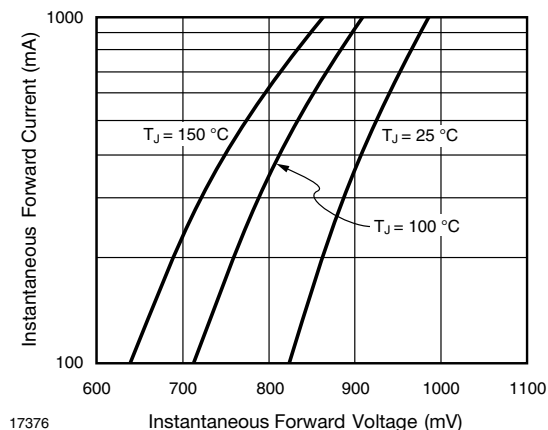


Fig. 2 - Typical Instantaneous Forward Characteristics

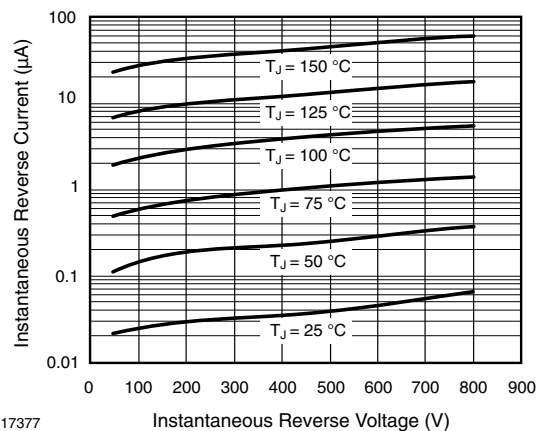
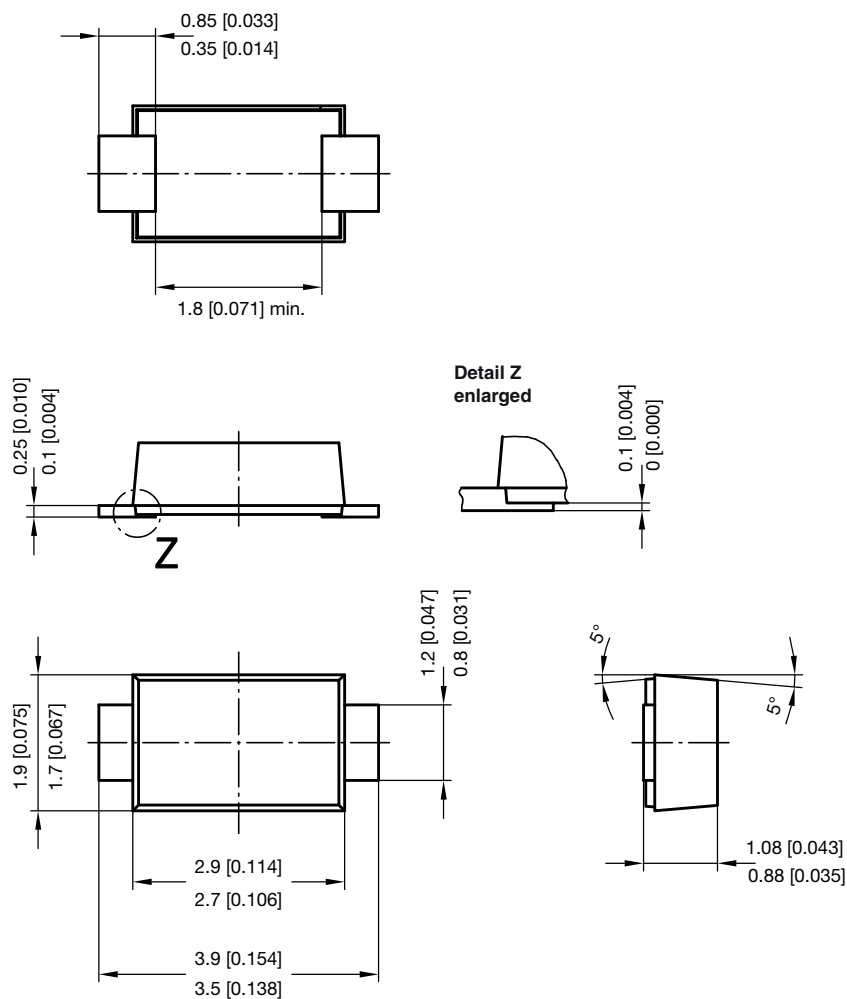


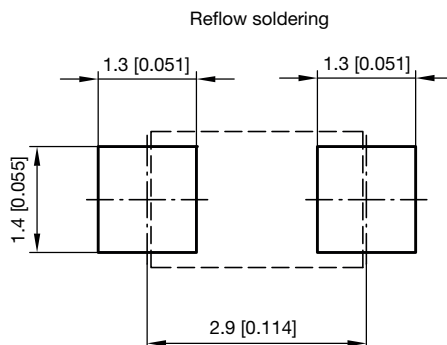
Fig. 3 - Typical Instantaneous Reverse Characteristics



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



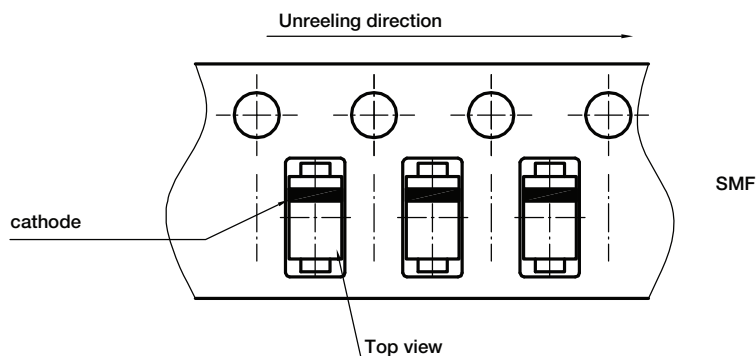
foot print recommendation:



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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