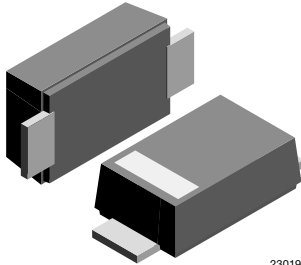




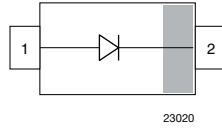
Standard Recovery Rectifier, High Voltage Surface Mount

eSMP® Series



SMF (DO-219AB)

23019



FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- High temperature soldering: 260 °C / 10 s at terminals
- Wave and reflow solderable
- 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



RoHS
COMPLIANT
HALOGEN
FREE

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), MOQ = 50K

08/3K per 7" reel (8 mm tape), MOQ = 30K

Circuit configuration: single

LINKS TO ADDITIONAL RESOURCES



PARTS TABLE			
PART	ORDERING CODE	MARKING	REMARKS
S1FLB-M	S1FLB-M-18 or S1FLB-M-08	HB	Tape and reel
S1FLD-M	S1FLD-M-18 or S1FLD-M-08	HD	Tape and reel
S1FLG-M	S1FLG-M-18 or S1FLG-M-08	HG	Tape and reel
S1FLJ-M	S1FLJ-M-18 or S1FLJ-M-08	HJ	Tape and reel
S1FLK-M	S1FLK-M-18 or S1FLK-M-08	HK	Tape and reel
S1FLM-M	S1FLM-M-18 or S1FLM-M-08	HM	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		S1FLB-M	V _{RRM}	100	V
		S1FLD-M	V _{RRM}	200	V
		S1FLG-M	V _{RRM}	400	V
		S1FLJ-M	V _{RRM}	600	V
		S1FLK-M	V _{RRM}	800	V
		S1FLM-M	V _{RRM}	1000	V
Maximum RMS voltage		S1FLB-M	V _{RMS}	70	V
		S1FLD-M	V _{RMS}	140	V
		S1FLG-M	V _{RMS}	280	V
		S1FLJ-M	V _{RMS}	420	V
		S1FLK-M	V _{RMS}	560	V
		S1FLM-M	V _{RMS}	700	V



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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum DC blocking voltage		S1FLB-M	V_{DC}	100	V
		S1FLD-M	V_{DC}	200	V
		S1FLG-M	V_{DC}	400	V
		S1FLJ-M	V_{DC}	600	V
		S1FLK-M	V_{DC}	800	V
		S1FLM-M	V_{DC}	1000	V
Maximum average forward rectified current	$T_L = 75\text{ }^{\circ}\text{C}$ ⁽¹⁾		$I_{F(AV)}$	1.5	A
	$T_A = 25\text{ }^{\circ}\text{C}$ ⁽¹⁾ at $R_{thJA} < 110\text{ K/W}$		$I_{F(AV)}$	1	A
	$T_A = 65\text{ }^{\circ}\text{C}$ ⁽¹⁾		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms half sine-wave	$T_L = 25\text{ }^{\circ}\text{C}$		I_{FSM}	22	A

Note

⁽¹⁾ 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 ⁽¹⁾		R_{thJA}	180	K/W
Operating junction and storage temperature range		T_j, T_{stg}	-55 to +150	$^{\circ}\text{C}$

Note

⁽¹⁾ 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	1 A ⁽¹⁾	S1FLB-M	V_F			1.1	V	
		S1FLD-M	V_F			1.1	V	
		S1FLG-M	V_F			1.1	V	
		S1FLJ-M	V_F			1.1	V	
		S1FLK-M	V_F			1.1	V	
		S1FLM-M	V_F			1.1	V	
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	S1FLB-M	I_R			10	μA	
		S1FLD-M	I_R			10	μA	
		S1FLG-M	I_R			10	μA	
		S1FLJ-M	I_R			10	μA	
		S1FLK-M	I_R			10	μA	
		S1FLM-M	I_R			10	μA	
	$T_A = 125\text{ }^{\circ}\text{C}$	S1FLB-M	I_R				50	μA
		S1FLD-M	I_R				50	μA
		S1FLG-M	I_R				50	μA
		S1FLJ-M	I_R				50	μA
		S1FLK-M	I_R				50	μA
		S1FLM-M	I_R				50	μA



ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$	S1FLB-M	t_{rr}			1800	ns
		S1FLD-M	t_{rr}			1800	ns
		S1FLG-M	t_{rr}			1800	ns
		S1FLJ-M	t_{rr}			1800	ns
		S1FLK-M	t_{rr}			1800	ns
		S1FLM-M	t_{rr}			1800	ns
Typical capacitance	4 V, 1 MHz	S1FLB-M	C_j		4		pF
		S1FLD-M	C_j		4		pF
		S1FLG-M	C_j		4		pF
		S1FLJ-M	C_j		4		pF
		S1FLK-M	C_j		4		pF
		S1FLM-M	C_j		4		pF

Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle



TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

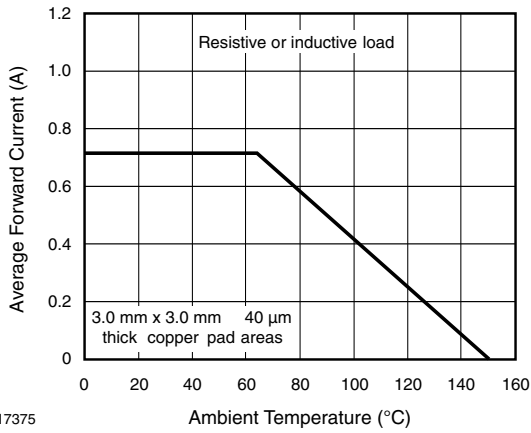


Fig. 1 - Forward Current Derating Curve

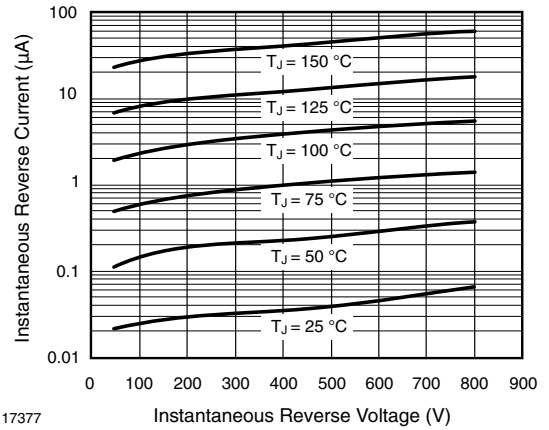


Fig. 3 - Typical Instantaneous Reverse Characteristics

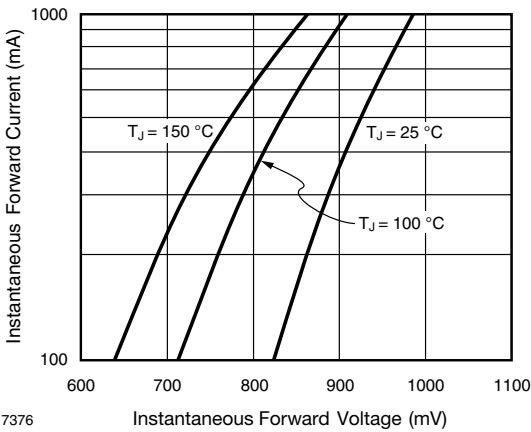


Fig. 2 - Typical Instantaneous Forward Characteristics

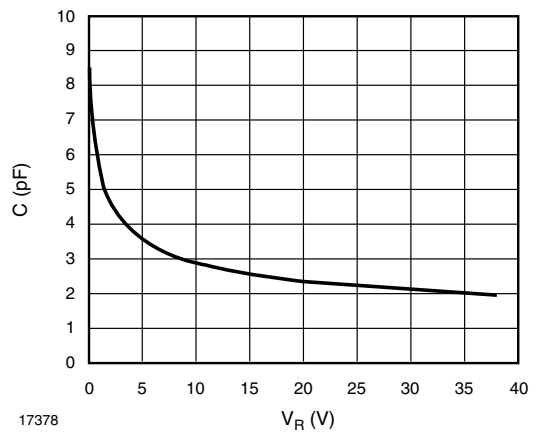
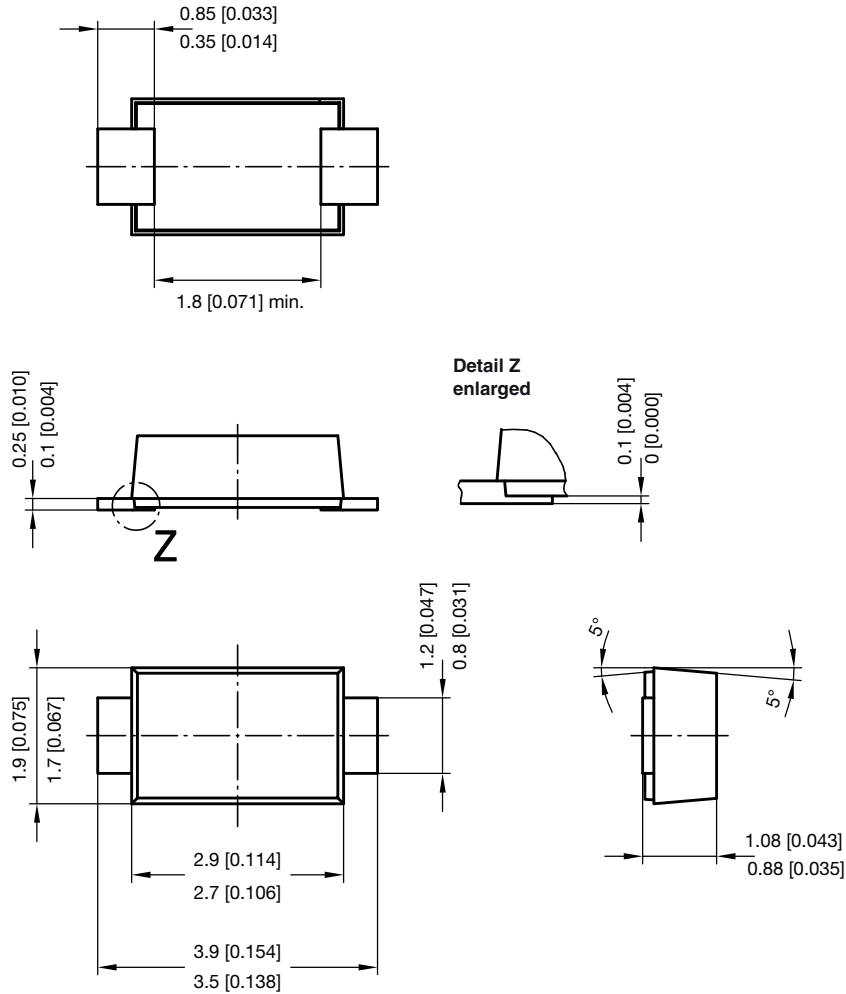


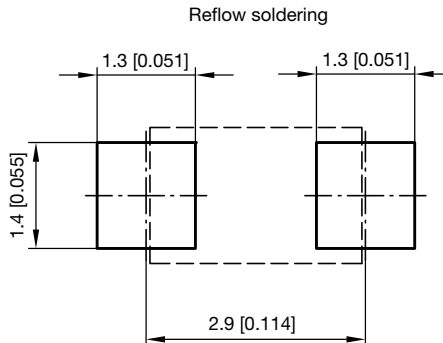
Fig. 4 - Capacitance vs. Reverse Voltage



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



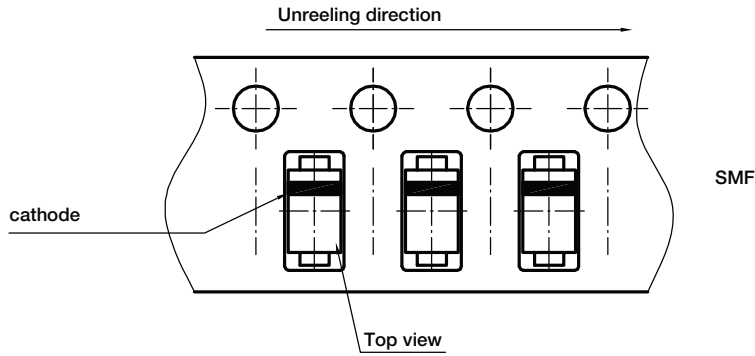
foot print recommendation:



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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