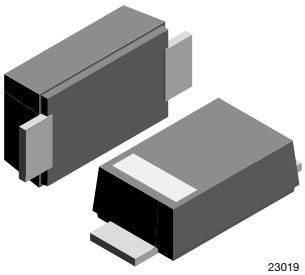
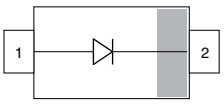
S1FLB-M, S1FLD-M, S1FLG-M, S1FLJ-M, S1FLK-M, S1FLM-M

Standard Recovery Rectifier, High Voltage Surface Mount

eSMP® Series



23019



23020

SMF (DO-219AB)

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

Pb e3 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

3D Models

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 °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 °C (1)		$I_{F(AV)}$	1.5	A
	T_A = 25 °C (1) at R_{thJA} < 110 K/W		$I_{F(AV)}$	1	A
	T_A = 65 °C (1)		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms half sine-wave	T_L = 25 °C		I_{FSM}	22	A

Note

(1) Averaged over any 20 ms period

THERMAL CHARACTERISTICS (T_{amb} = 25 °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	°C

Note

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

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °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 °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 °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 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 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)

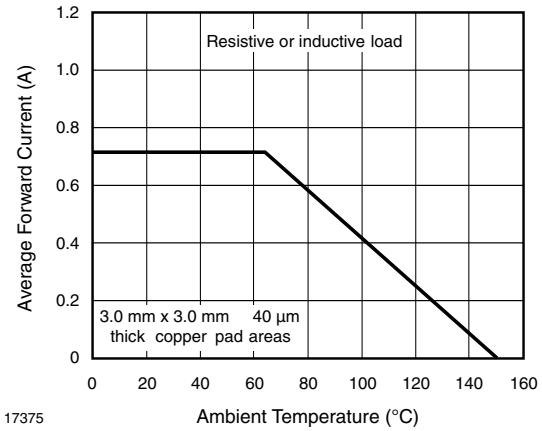


Fig. 1 - Forward Current Derating Curve

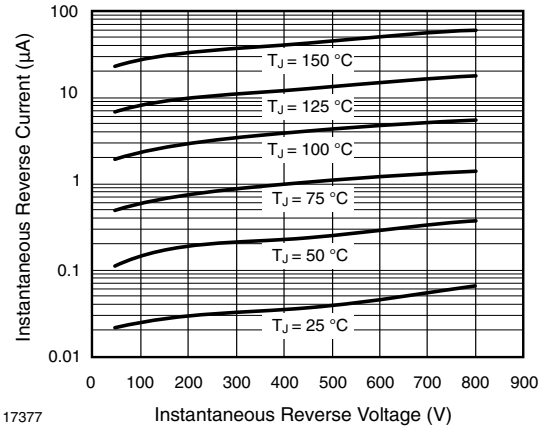


Fig. 3 - Typical Instantaneous Reverse Characteristics

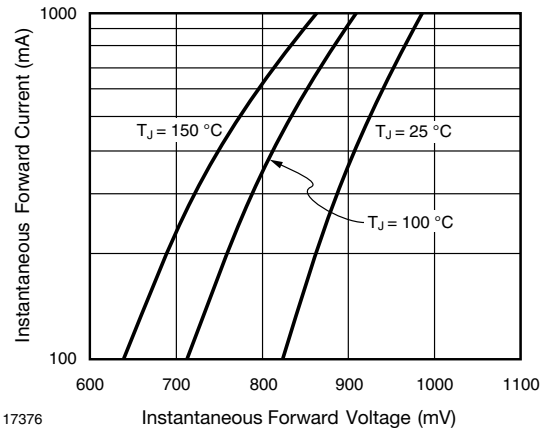


Fig. 2 - Typical Instantaneous Forward Characteristics

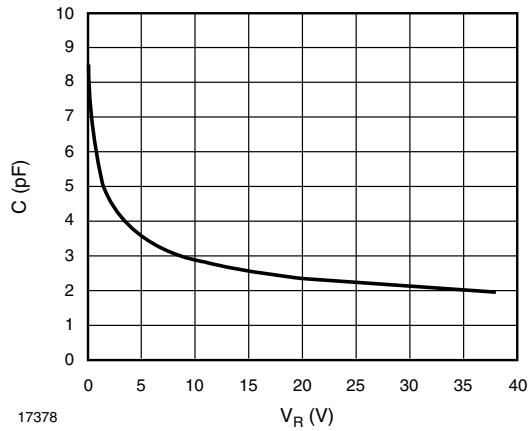
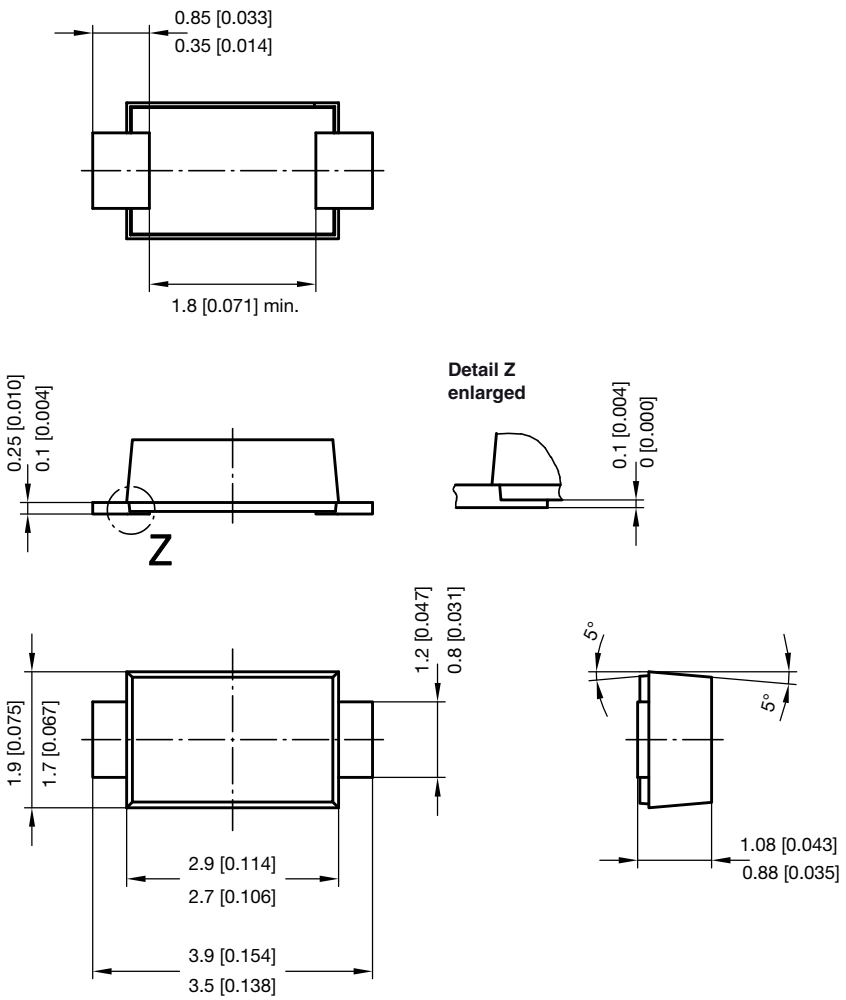


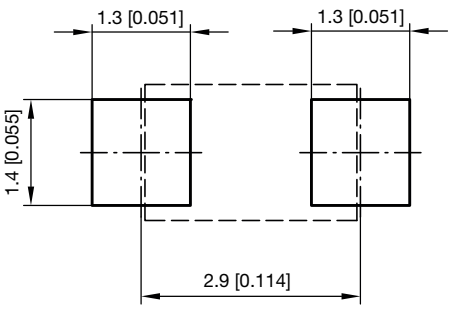
Fig. 4 - Capacitance vs. Reverse Voltage

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



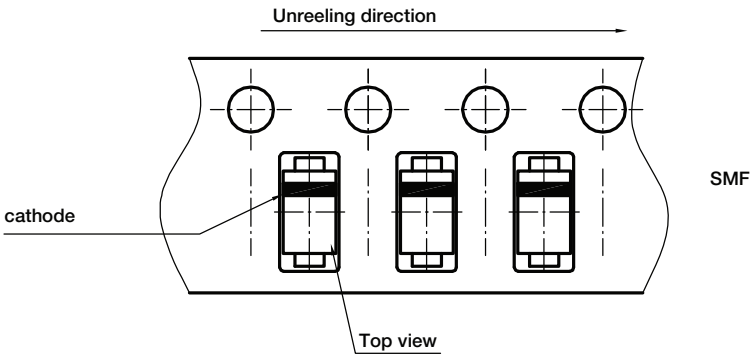
foot print recommendation:

Reflow soldering



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

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.