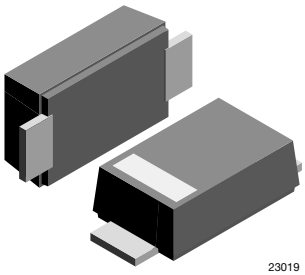
Standard Recovery Rectifier High Voltage Surface-Mount

eSMP® Series



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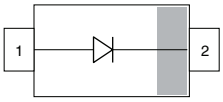

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SMF (DO-219AB)

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

RoHS COMPLIANT
HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

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	

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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 °C (1)		$I_{F(AV)}$	1.5	A
	T_A = 65 °C (1)		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms single half	T_L = 25 °C		I_{FSM}	25	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}	-65 to +175	°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	I_F = 1 A (1)	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 °C	S07B-M	I_R			10	µA
		S07D-M	I_R			10	µA
		S07G-M	I_R			10	µA
		S07J-M	I_R			10	µA
		S07M-M	I_R			10	µA
	T_A = 125 °C	S07B-M	I_R			50	µA
		S07D-M	I_R			50	µA
		S07G-M	I_R			50	µA
		S07J-M	I_R			50	µA
		S07M-M	I_R			50	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 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
(1) Pulse test: 300 µs pulse width, 1 % duty cycle

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

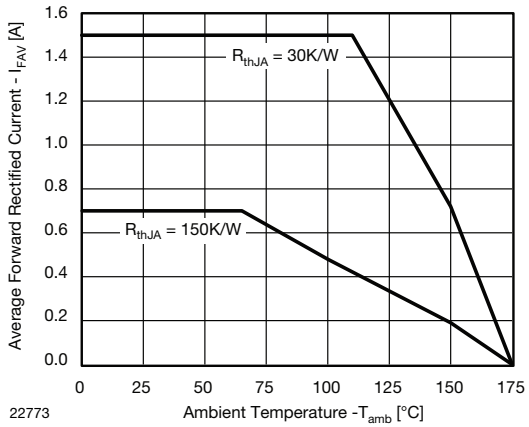

Fig. 1 - Forward Current Derating Curve

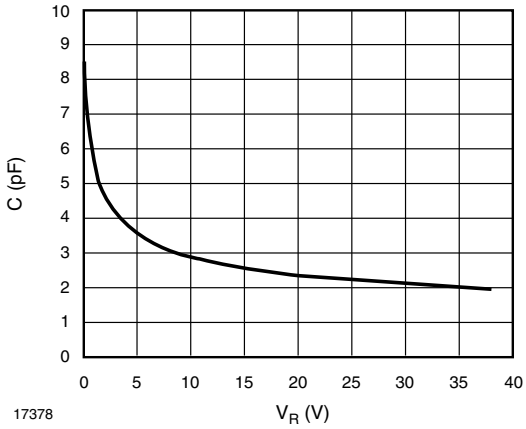

Fig. 4 - Capacitance vs. Reverse Voltage

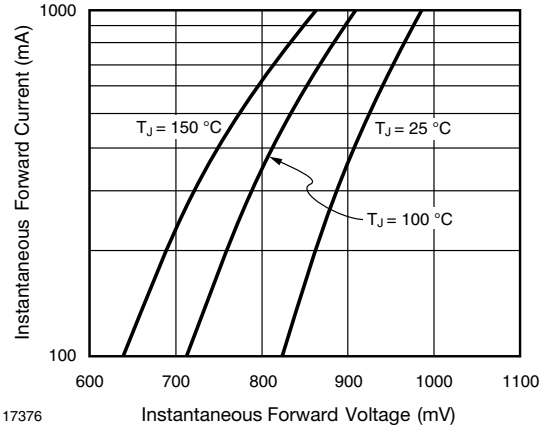

Fig. 2 - Typical Instantaneous Forward Characteristics

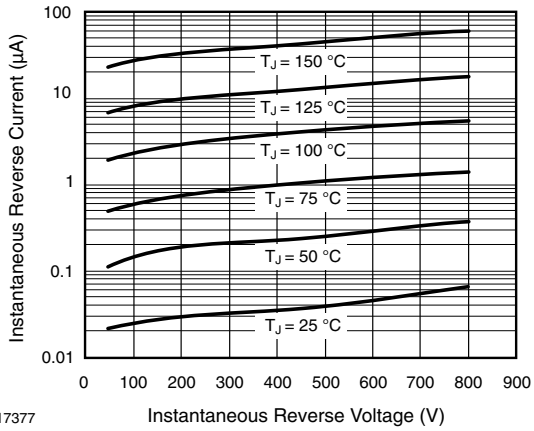

Fig. 3 - Typical Instantaneous Reverse Characteristics

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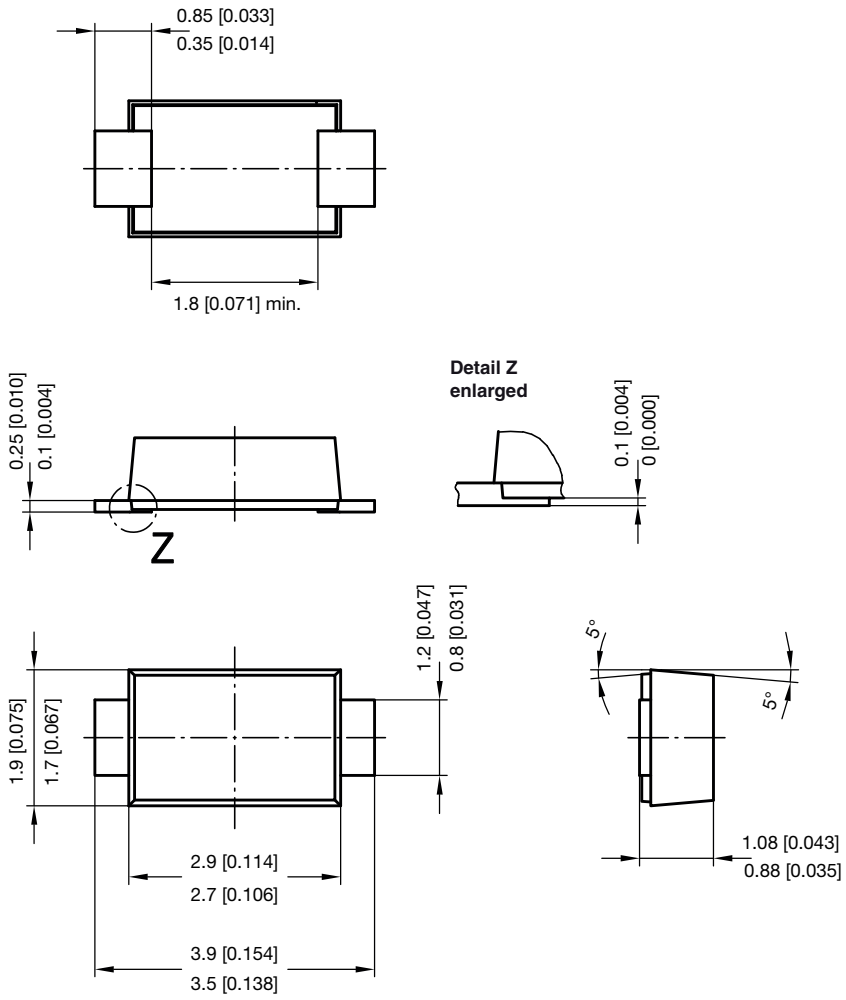
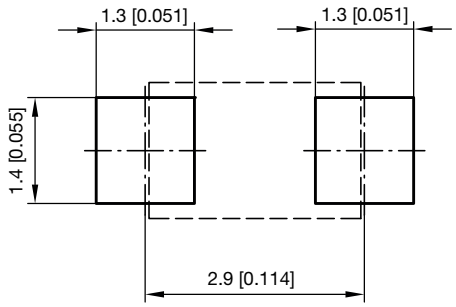
PACKAGE DIMENSIONS in millimeters (inches): **SMF (DO-219AB)**



foot print recommendation:

Reflow soldering



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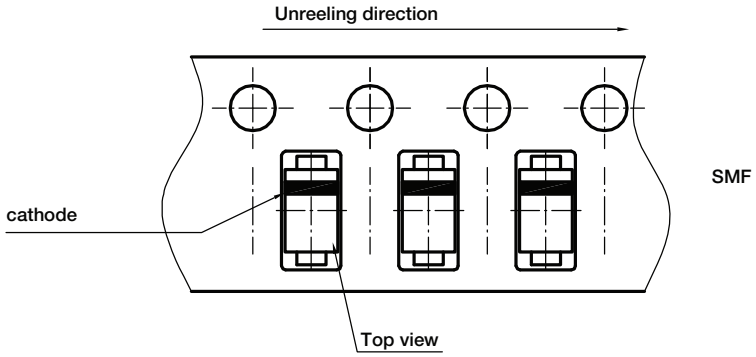
ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)



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