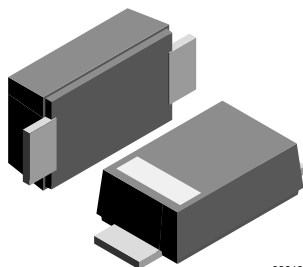
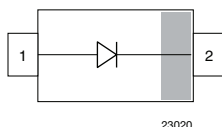


Standard Recovery Rectifier High Voltage Surface Mount

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
- 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

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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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	$T_L = 110\text{ }^{\circ}\text{C}$ ⁽¹⁾		$I_{F(AV)}$	1.5	A
	$T_A = 65\text{ }^{\circ}\text{C}$ ⁽¹⁾		$I_{F(AV)}$	0.7	A
Peak forward surge current 8.3 ms single half sine-wave	$T_L = 25\text{ }^{\circ}\text{C}$		I_{FSM}	25	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}	-65 to +175	$^{\circ}\text{C}$

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	$I_F = 1\text{ A}$ ⁽¹⁾	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	μA
		S07D	I_R			10	μA
		S07G	I_R			10	μA
		S07J	I_R			10	μA
		S07M	I_R			10	μA
	$T_A = 125\text{ }^{\circ}\text{C}$	S07B	I_R			50	μA
		S07D	I_R			50	μA
		S07G	I_R			50	μA
		S07J	I_R			50	μA
		S07M	I_R			50	μA
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

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



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

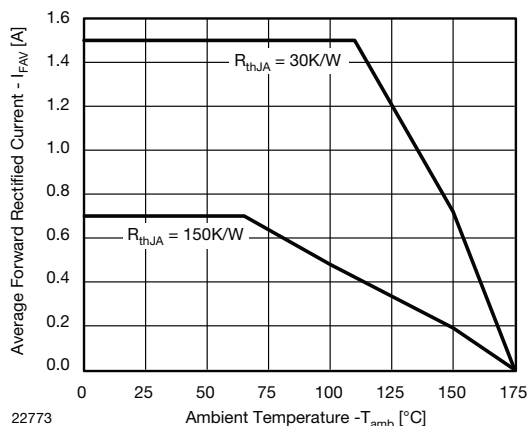


Fig. 1 - Forward Current Derating Curve

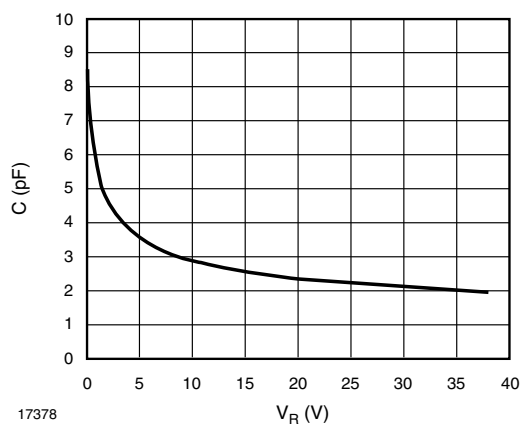


Fig. 4 - Capacitance vs. Reverse Voltage

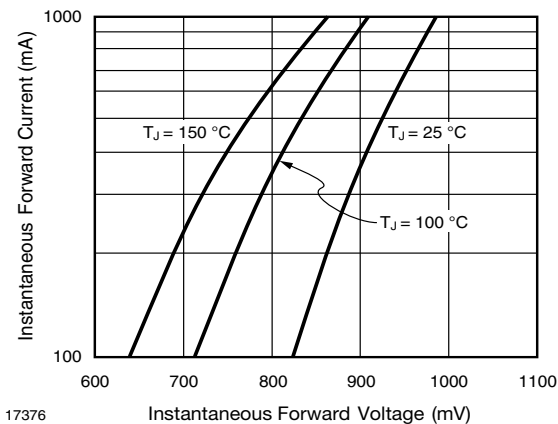


Fig. 2 - Typical Instantaneous Forward Characteristics

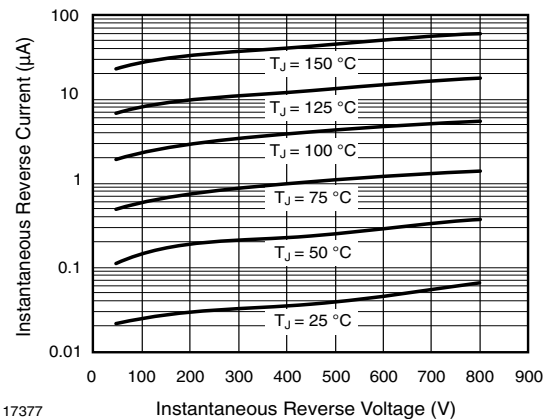
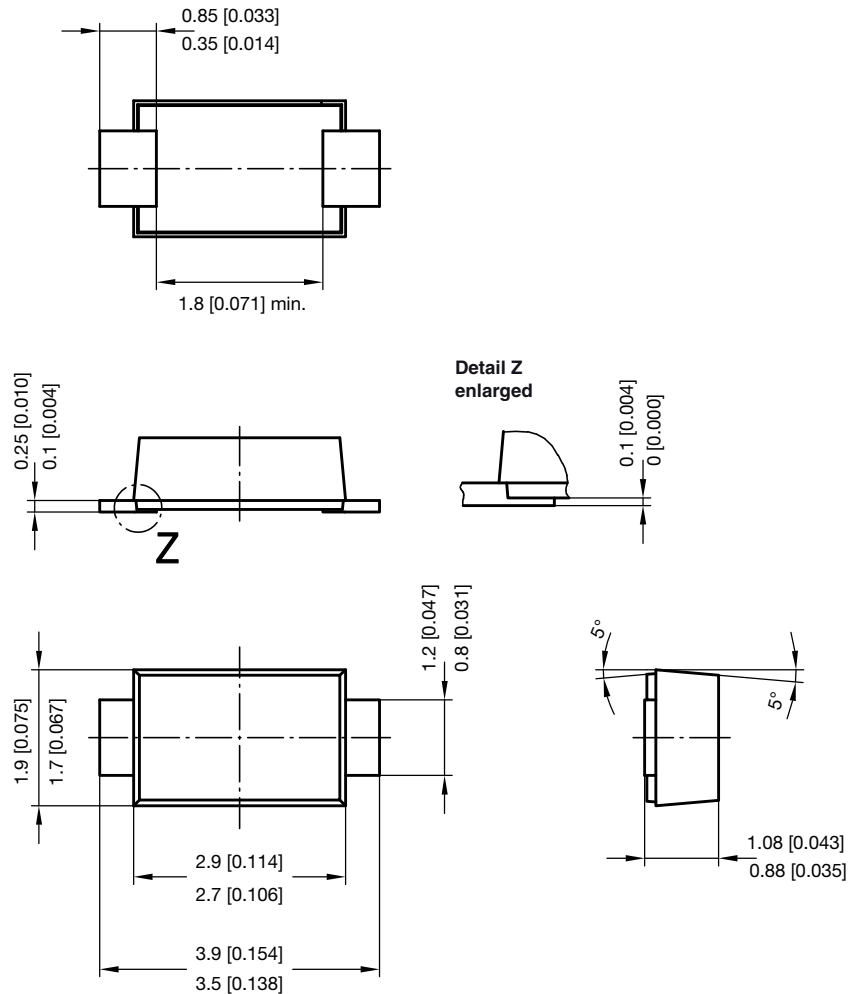


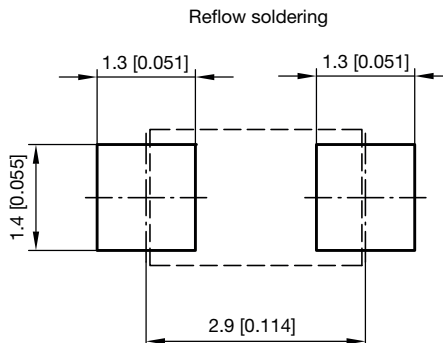
Fig. 3 - Typical Instantaneous Reverse Characteristics



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

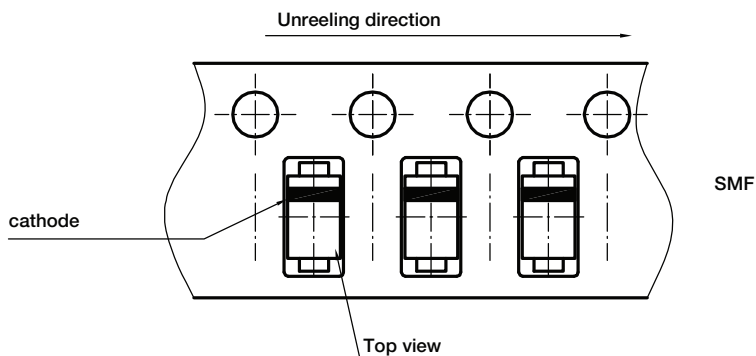


foot print recommendation:





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



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