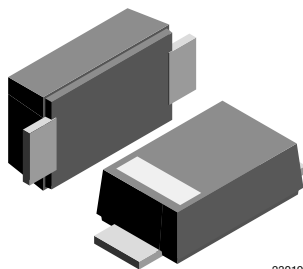


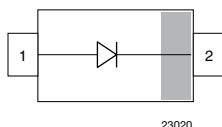
Ultrafast Rectifier Surface-Mount

eSMP® Series



SMF (DO-219AB)

23019



23020

FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated pellet chip junction
- 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



3D Models

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
ES07B	ES07B-GS18 or ES07B-GS08	EB	Tape and reel
ES07D	ES07D-GS18 or ES07D-GS08	ED	Tape and reel

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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		ES07B	V_{RRM}	100	V
		ES07D	V_{RRM}	200	V
Maximum RMS voltage		ES07B	V_{RMS}	70	V
		ES07D	V_{RMS}	140	V
Maximum DC blocking voltage		ES07B	V_{DC}	100	V
		ES07D	V_{DC}	200	V
Maximum average forward rectified current	$T_L = 109\text{ °C}$		$I_{F(AV)}$	1.2	A
	$T_A = 65\text{ °C}^{(1)}$		$I_{F(AV)}$	0.5	A
Peak forward surge current 8.3 ms single half sine-wave	$T_L = 25\text{ °C}$		I_{FSM}	30	A

Note

⁽¹⁾ Mounted on epoxy glass PCB with 3 mm x 3 mm Cu pads ($\geq 40\text{ }\mu\text{m}$ thick)

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$, 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	°C

Note

⁽¹⁾ Mounted on epoxy glass PCB 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⁾	ES07B	V_F			0.98	V
		ES07D	V_F			0.98	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	ES07B	I_R			10	μA
		ES07D	I_R			10	μA
	$T_A = 100\text{ }^{\circ}\text{C}$	ES07B	I_R			50	μA
		ES07D	I_R			50	μA
Reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$	ES07B	t_{rr}			25	ns
		ES07D	t_{rr}			25	ns
Typical capacitance	4 V, 1 MHz	ES07B	C_j		4		pF
		ES07D	C_j		4		pF

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

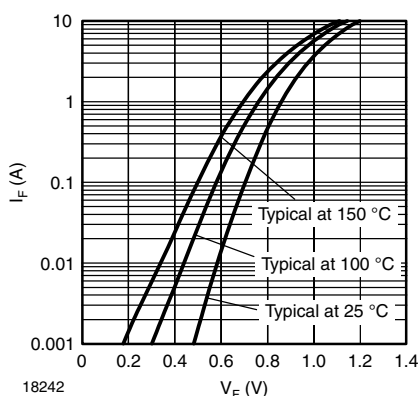
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Forward Characteristics

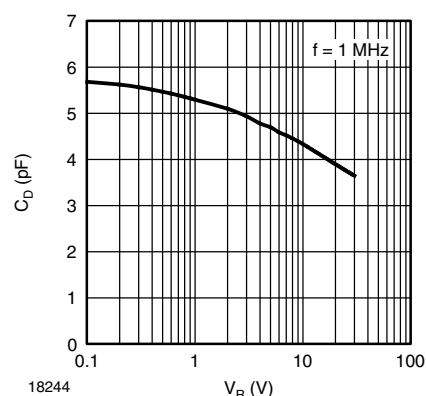


Fig. 3 - Typical Diode Capacitance vs. Reverse Voltage

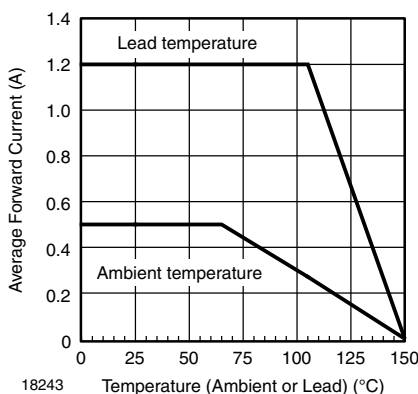


Fig. 2 - Forward Current Derating Curve

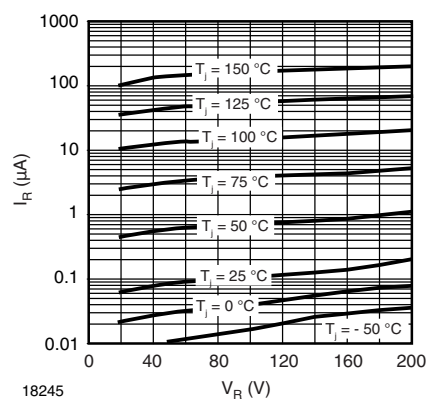
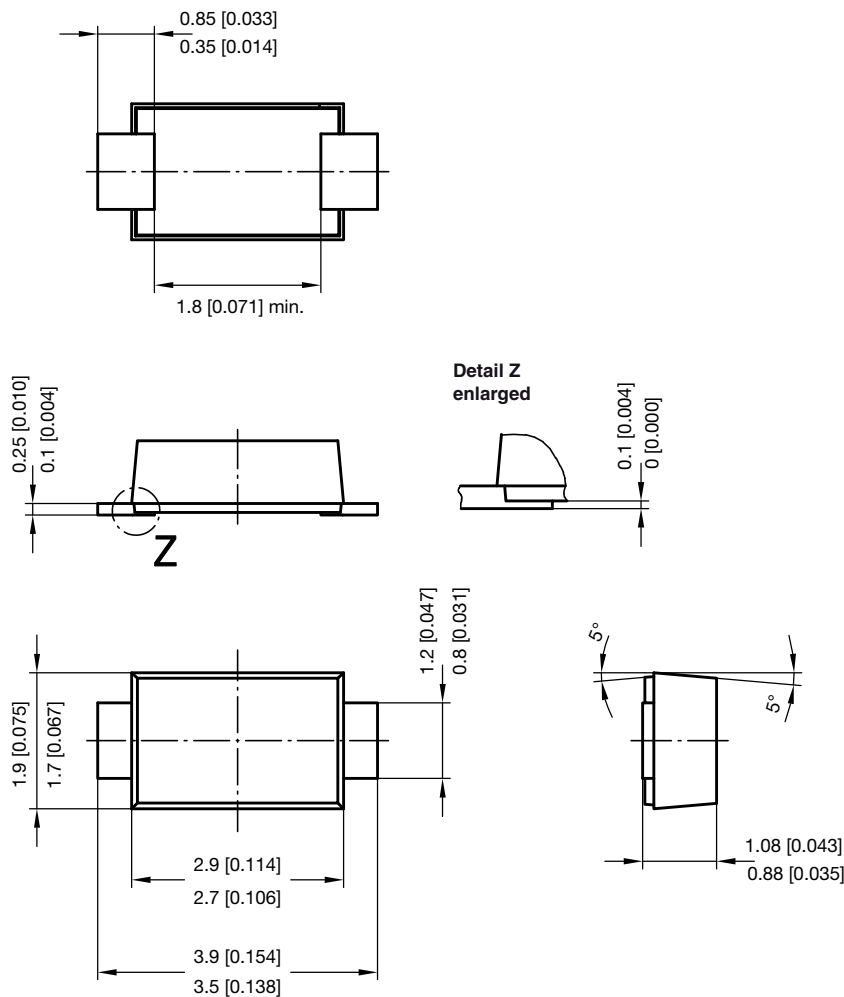
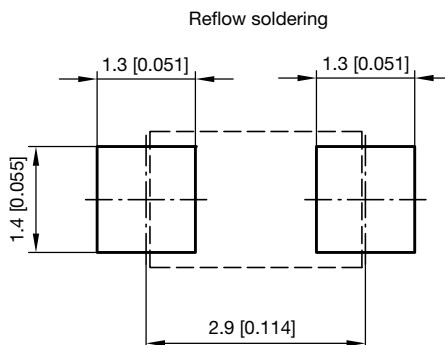


Fig. 4 - Typical Reverse Characteristics

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


foot print recommendation:



Created - Date: 15. February 2005

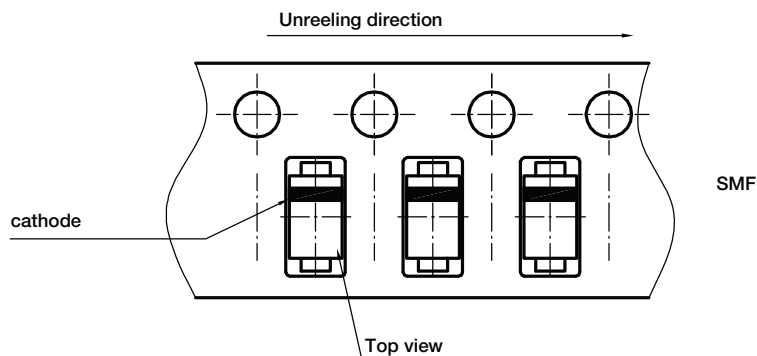
Rev. 6 - Date: 24.Feb.2021

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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