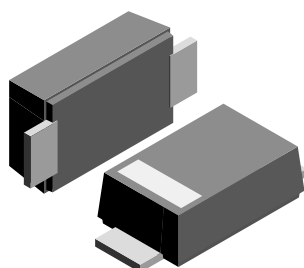
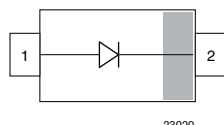


Ultrafast Rectifier Surface-Mount

eSMP® Series



SMF (DO-219AB)



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
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES



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
ES07B-M	ES07B-M-18 or ES07B-M-08	GB	Tape and reel
ES07D-M	ES07D-M-18 or ES07D-M-08	GD	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		ES07B-M	V _{RRM}	100	V
		ES07D-M	V _{RRM}	200	V
Maximum RMS voltage		ES07B-M	V _{RMS}	70	V
		ES07D-M	V _{RMS}	140	V
Maximum DC blocking voltage		ES07B-M	V _{DC}	100	V
		ES07D-M	V _{DC}	200	V
Maximum average forward rectified current	T _L = 109 °C		I _{F(AV)}	1.2	A
	T _A = 65 °C ⁽¹⁾		I _{F(AV)}	0.5	A
Peak forward surge current 8.3 ms single half sine-wave	T _L = 25 °C		I _{FSM}	30	A

Note

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

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 glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm 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-M	V_F			0.98	V
		ES07D-M	V_F			0.98	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	ES07B-M	I_R			10	μA
		ES07D-M	I_R			10	μA
	$T_A = 100\text{ }^{\circ}\text{C}$	ES07B-M	I_R			50	μA
		ES07D-M	I_R			50	μA
Reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $t_{rr} = 0.25\text{ A}$	ES07B-M	t_{rr}			25	ns
		ES07D-M	t_{rr}			25	ns
Typical capacitance	4 V, 1 MHz	ES07B-M	C_j		4		pF
		ES07D-M	C_j		4		pF

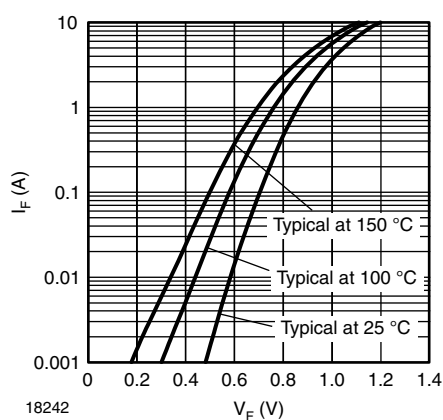
Note(1) Pulse test: 300 μs pulse width, 1 % duty cycle**TYPICAL CHARACTERISTICS** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Fig. 1 - Typical Forward Characteristics

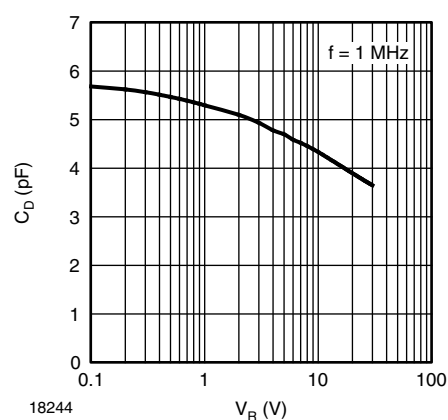


Fig. 3 - Typical Diode Capacitance vs. Reverse Voltage

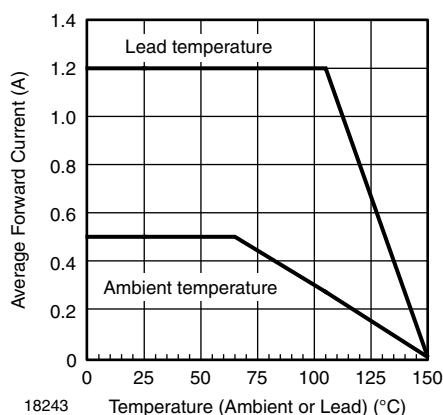


Fig. 2 - Forward Current Derating Curve

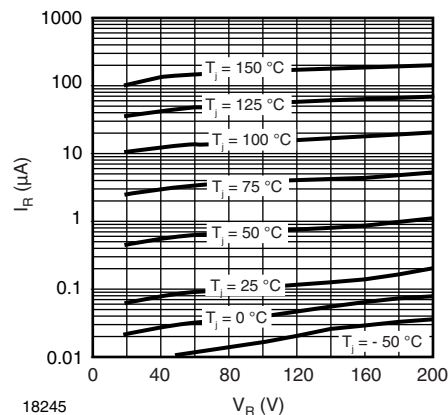
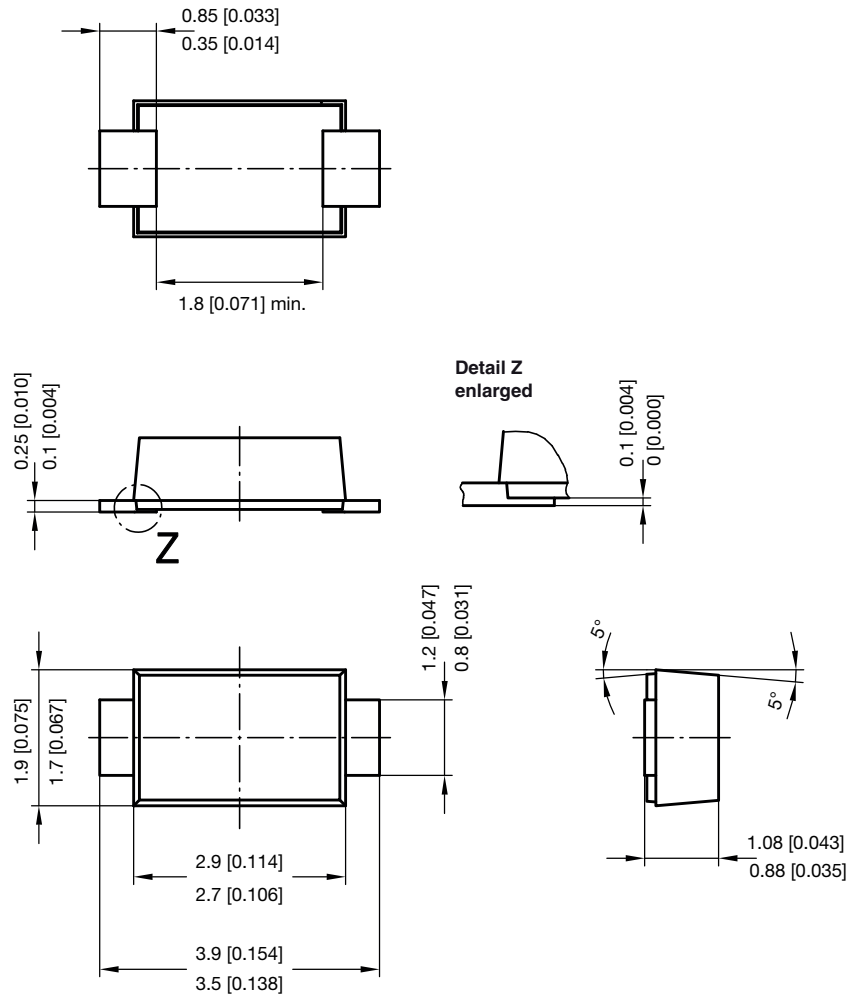


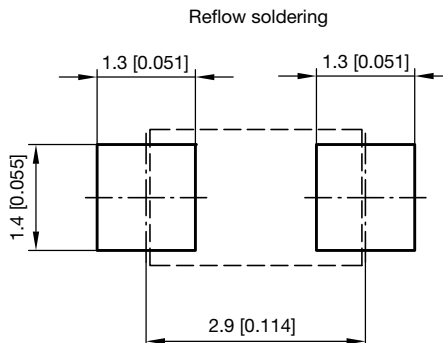
Fig. 4 - Typical Reverse Characteristics



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



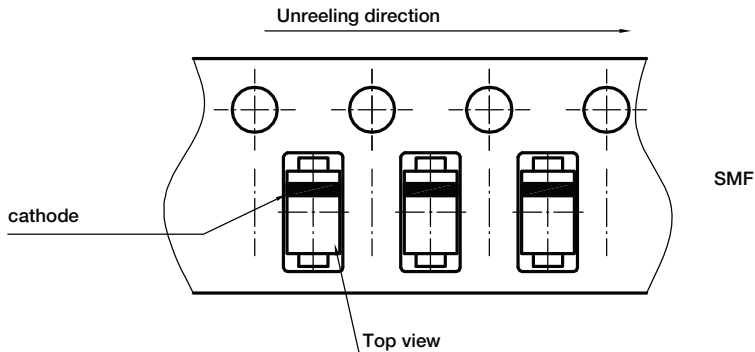
foot print recommendation:



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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