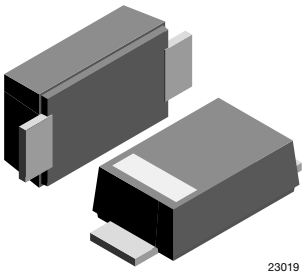
Ultrafast Rectifier Surface-Mount

eSMP® Series



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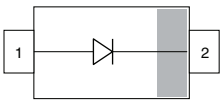

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SMF (DO-219AB)

FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated 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 °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 °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 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage	I_F = 1 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 °C	ES07B	I_R			10	µA
		ES07D	I_R			10	µA
	T_A = 100 °C	ES07B	I_R			50	µA
		ES07D	I_R			50	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 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 °C, unless otherwise specified)

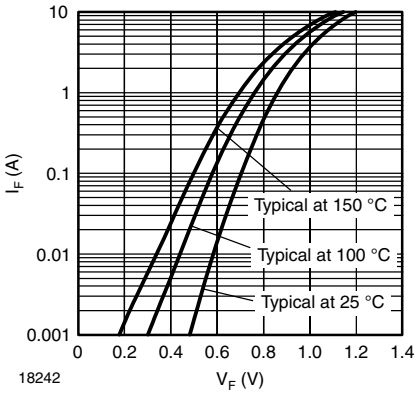


Fig. 1 - Typical Forward Characteristics

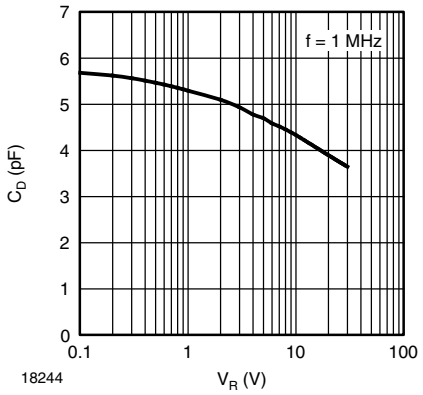


Fig. 3 - Typical Diode Capacitance vs. Reverse Voltage

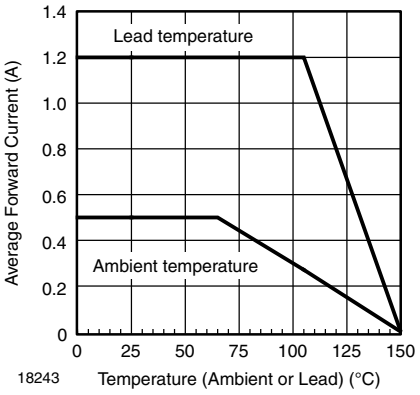


Fig. 2 - Forward Current Derating Curve

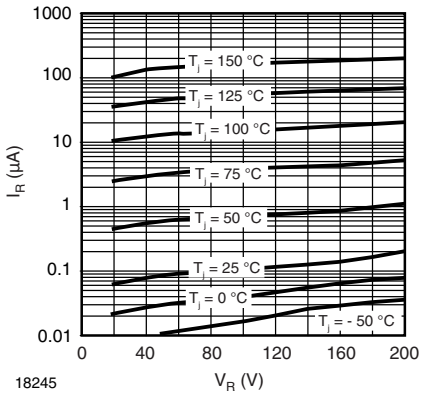
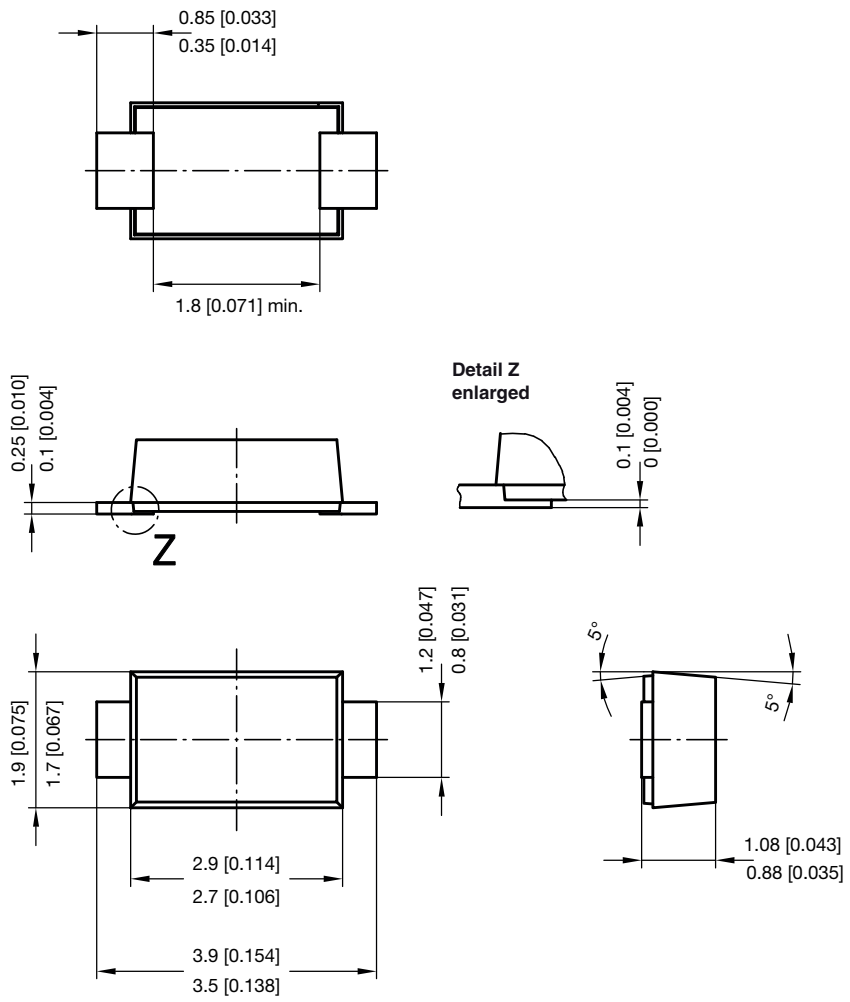


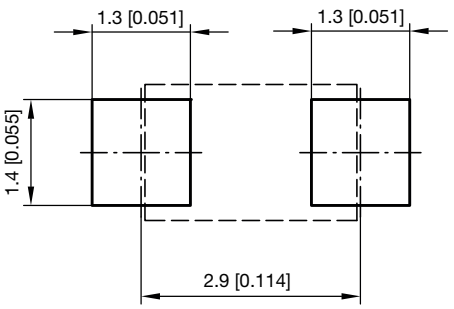
Fig. 4 - Typical Reverse Characteristics

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



foot print recommendation:

Reflow soldering



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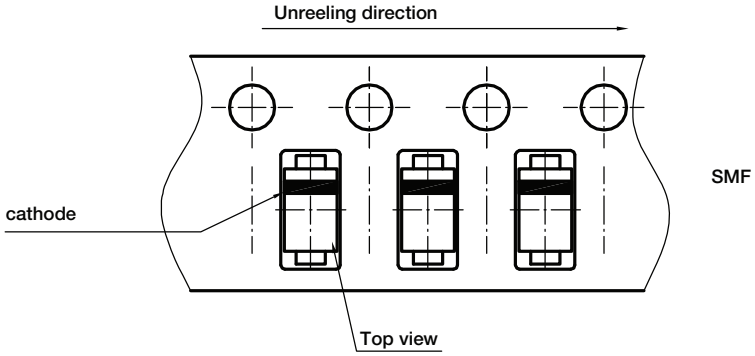
ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)



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