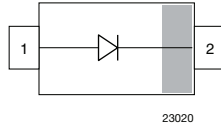
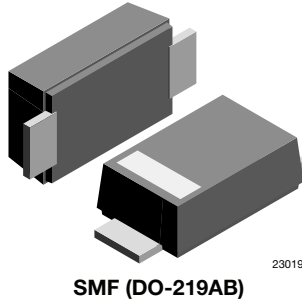


## Ultrafast Rectifier Surface-Mount

**eSMP® Series**

**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
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**DESIGN SUPPORT TOOLS**
[click logo to get started](#)

**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**
<sup>(1)</sup> 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 <sup>(1)</sup>		$R_{thJA}$	180	K/W
Operating junction and storage temperature range		$T_j, T_{stg}$	-55 to 150	°C

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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 1\text{ A}$ <sup>(1)</sup>	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	$\mu\text{A}$
		ES07D	$I_R$			10	$\mu\text{A}$
	$T_A = 100\text{ }^{\circ}\text{C}$	ES07B	$I_R$			50	$\mu\text{A}$
		ES07D	$I_R$			50	$\mu\text{A}$
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  $\mu\text{s}$  pulse width, 1 % duty cycle

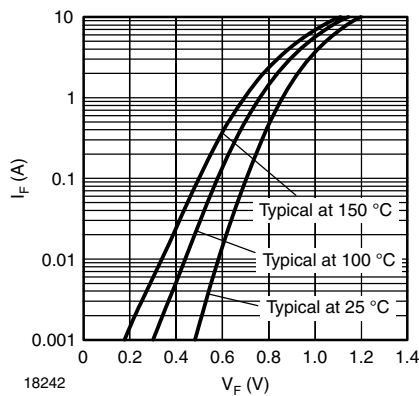
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Forward Characteristics

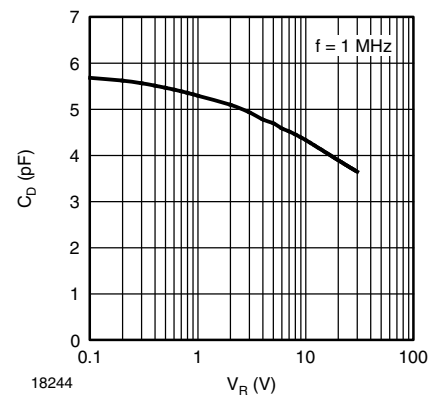


Fig. 3 - Typical Diode Capacitance vs. Reverse Voltage

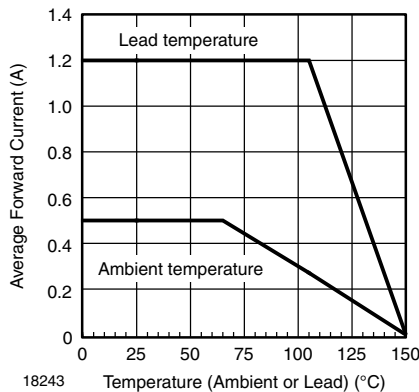


Fig. 2 - Forward Current Derating Curve

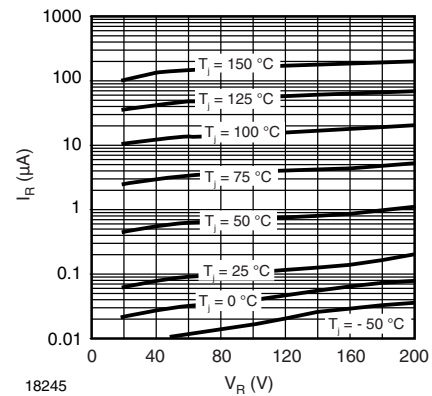
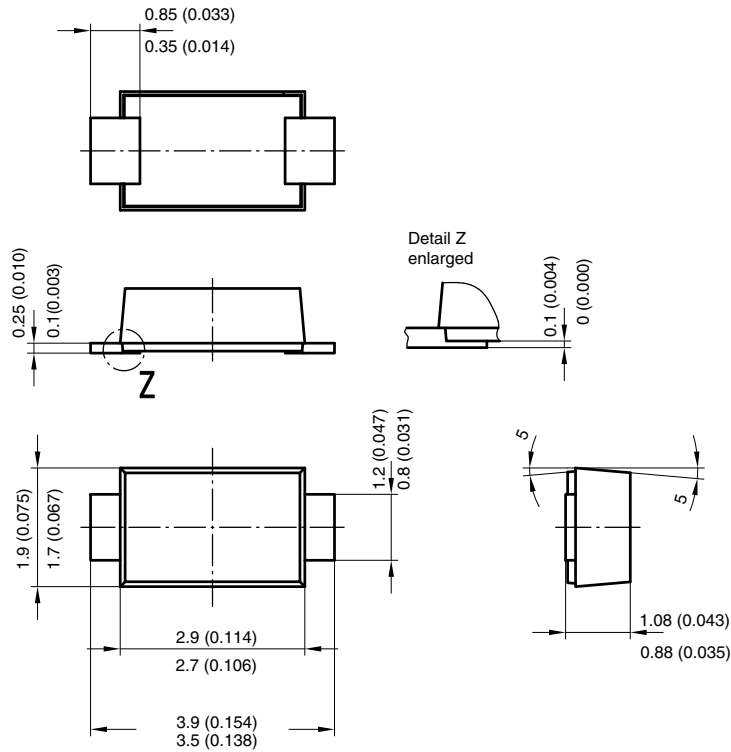


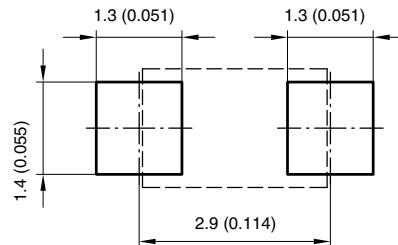
Fig. 4 - Typical Reverse Characteristics



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



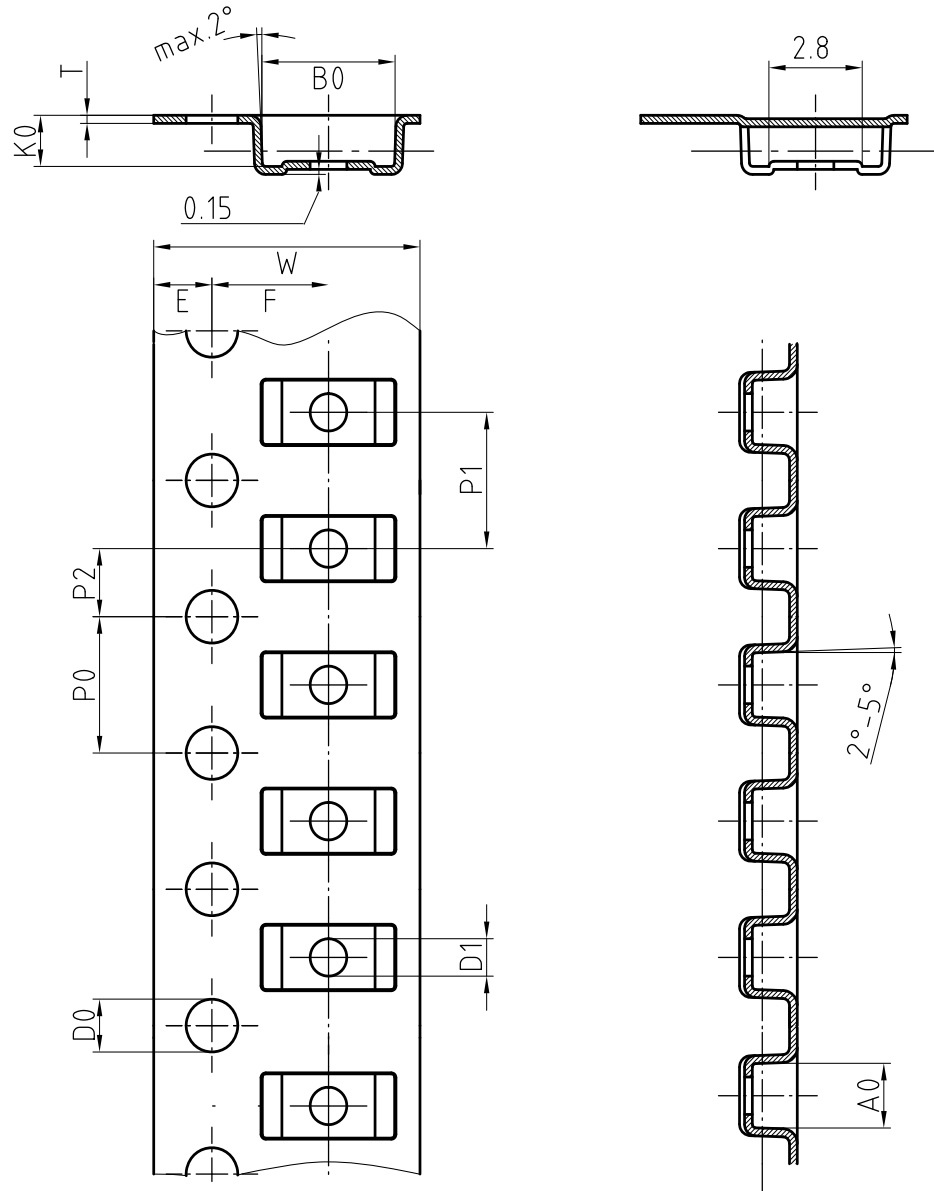
Foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 3 - Date: 13. March 2007  
 Document no.: S8-V-3915.01-001 (4)  
 17247



**BLISTER TAPE DIMENSIONS** in millimeters: **SMF (DO-219AB)**



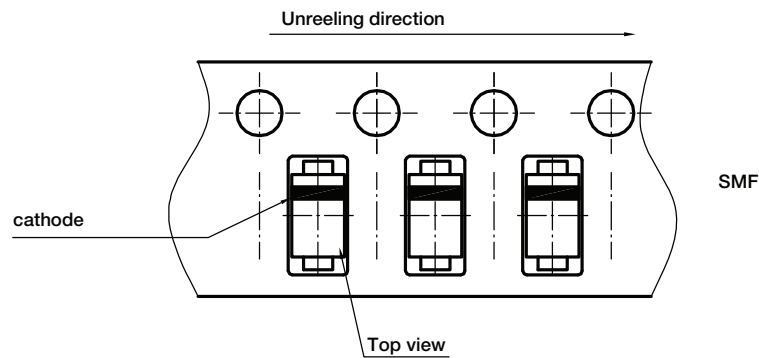
Mat:	A0	B0	K0	W	T	P0	P2	P1	D0	D1	E	F
PS	1.9	4.0	1.5	8.0	0.235	4.0	2.0	4.0	1.5	1	1.75	3.5

Document-No.: S8-V-3717.02-001 (3)

18513



**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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