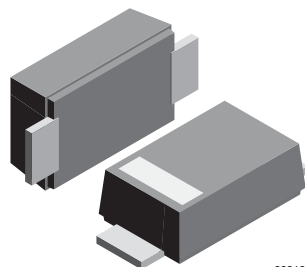
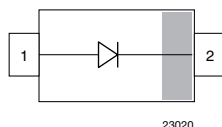


## Schottky Rectifier Surface Mount

### eSMP® Series



SMF (DO-219AB)



23020


**RoHS**  
COMPLIANT

### FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Low power loss, high efficiency
- 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 available
- Base P/N-E3 - RoHS-compliant, and commercial grade
- Base P/N-HE3 - RoHS-compliant, and AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### DESIGN SUPPORT TOOLS

[click logo to get started](#)


### MECHANICAL DATA

**Case:** SMF (DO-219AB)

**Polarity:** color band denotes cathode end

**Weight:** approx. 15 mg

**Packaging codes / options:**

18/10K per 13" reel (8 mm tape), 50K/box

08/3K per 7" reel (8 mm tape), 30K/box

**Circuit configuration:** single

### TYPICAL APPLICATIONS

For use in high frequency inverters, freewheeling, DC/DC converters, and polarity protection in commercial, industrial, and automotive applications.

### PARTS TABLE

PART	ORDERING CODE	MARKING	REMARKS
SL04	SL04-E3-18 or SL04-E3-08 SL04-HE3-18 or SL04-HE3-08	S4	Tape and reel

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		$V_{RRM}$	40	V
Maximum average forward rectified current (fig. 4)		$I_{F(AV)}$	1.1	A
Peak forward surge current 8.3 ms single half sine-wave $T_{J(init)} = 25\text{ }^{\circ}\text{C}$		$I_{FSM}$	40	A

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead		$R_{thJL}$	22	K/W
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	180	K/W
Junction temperature in DC forward current without reverse bias		$T_j$	175	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-55 to +175	$^{\circ}\text{C}$

#### Note

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

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 0.5 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.41	0.47	V
	I <sub>F</sub> = 1.1 A			0.48	0.54	
	I <sub>F</sub> = 0.5 A	T <sub>J</sub> = 100 °C		0.34	-	
	I <sub>F</sub> = 1.1 A			0.43	-	
	I <sub>F</sub> = 0.5 A	T <sub>J</sub> = 125 °C		0.31	-	
	I <sub>F</sub> = 1.1 A			0.42	-	
Reverse current	V <sub>R</sub> = 40 V	T <sub>J</sub> = 25 °C	I <sub>R</sub>	10	20	μA
		T <sub>J</sub> = 100 °C		1.2	2.6	mA
		T <sub>J</sub> = 125 °C		4.5	13	mA
Typical junction capacitance	V <sub>R</sub> = 4.0 V, 1 MHz		C <sub>D</sub>	65	-	pF

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

**RATINGS AND CHARACTERISTICS CURVES (T<sub>amb</sub> = 25 °C, unless otherwise specified)**

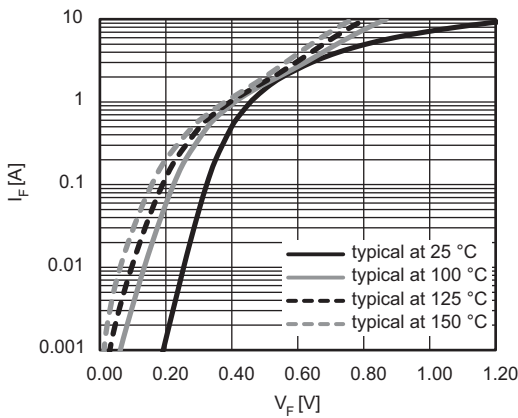


Fig. 1 - Typical Forward Characteristics

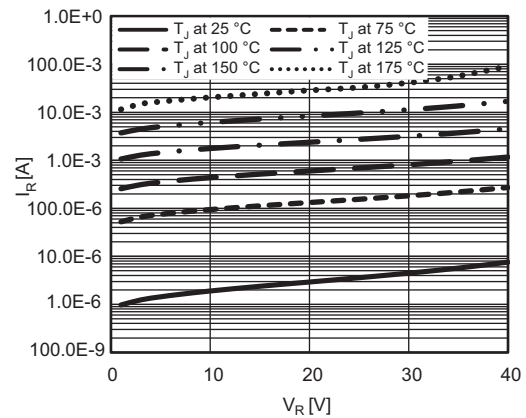


Fig. 3 - Typical Reverse Characteristics

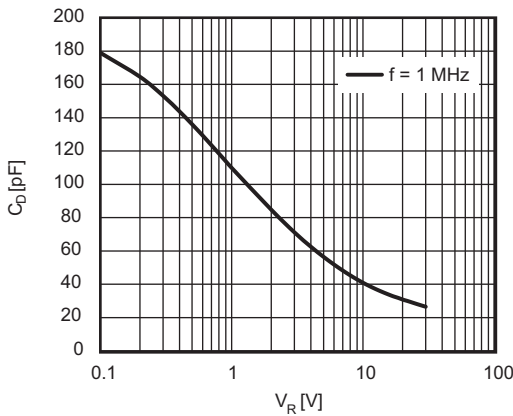


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

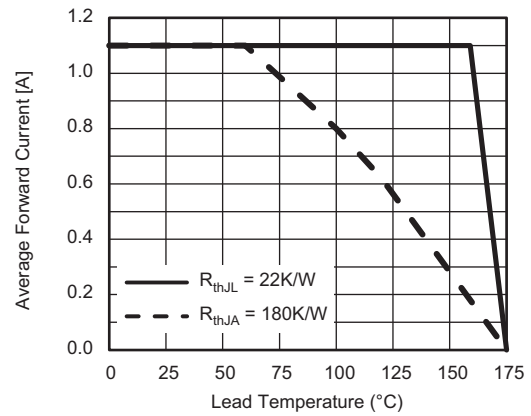


Fig. 4 - Forward Current Derating Curve

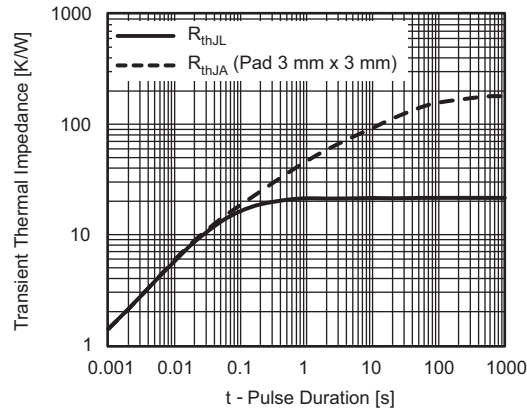
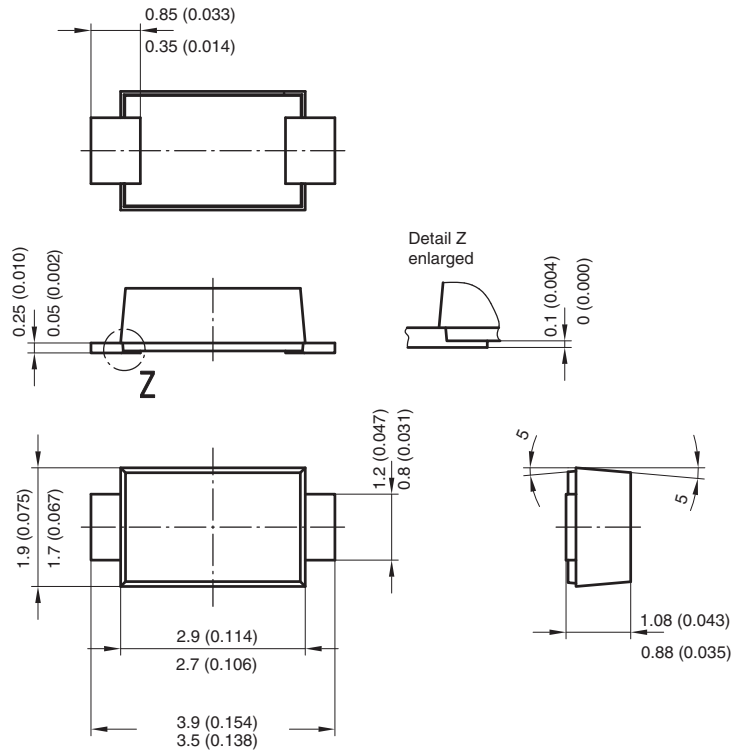
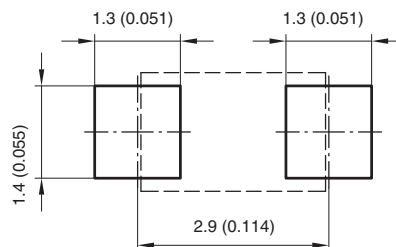


Fig. 5 - Typical Transient Thermal Impedance

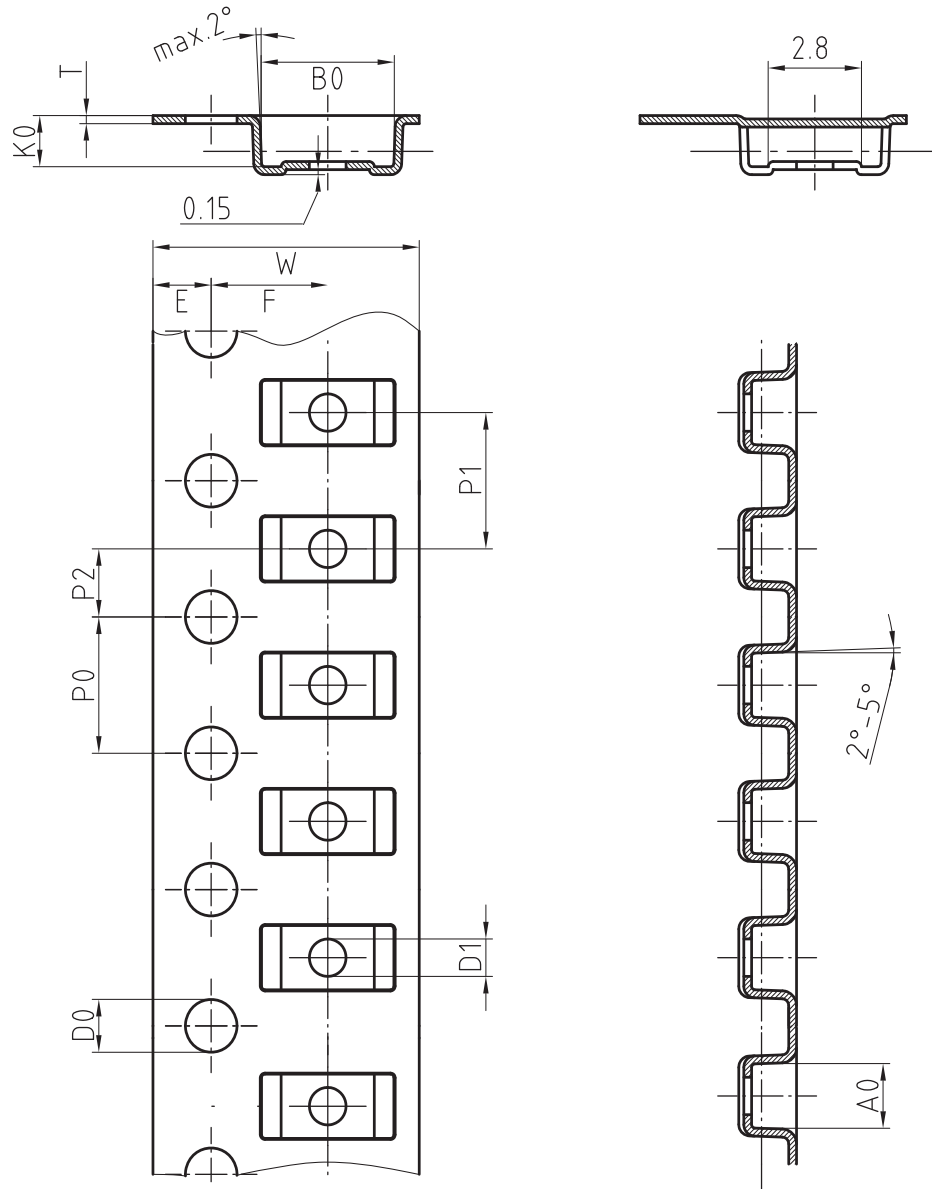
**PACKAGE DIMENSIONS** in millimeters (inches): **SMF (DO-219AB)**



Foot print recommendation:



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

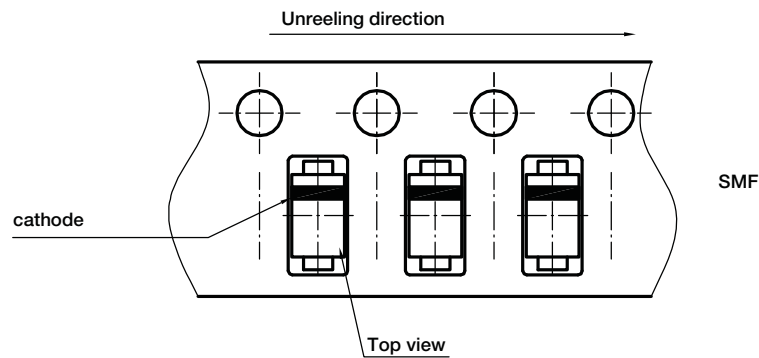
**BLISTER TAPE DIMENSIONS** in millimeters: **SMF (DO-219AB)**


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**



Document no.: S8-V-3717.02-003 (4)  
Created - Date: 09. Feb. 2010  
22670



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