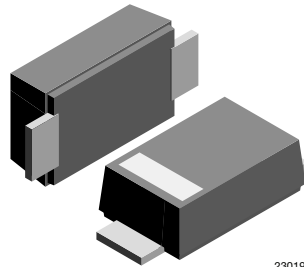
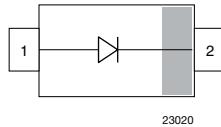


## Schottky Rectifier Surface-Mount

### eSMP® Series



SMF (DO-219AB)



23020

### 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-M3 - halogen-free, RoHS-compliant, and commercial grade
- Base P/N-HM3 - halogen-free, RoHS-compliant, and 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### LINKS TO ADDITIONAL RESOURCES



### 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), MOQ = 50K

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

**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-M	SL04-M3-18 or SL04-M3-08 SL04-HM3_A18 or SL04-HM3_A08	U4	Tape and reel

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	40	V
Maximum average forward rectified current (fig. 4)		I <sub>F(AV)</sub>	1.1	A
Peak forward surge current 8.3 ms single half sine-wave T <sub>J(init)</sub> = 25 °C		I <sub>FSM</sub>	40	A

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead		R <sub>thJL</sub>	22	K/W
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	180	K/W
Junction temperature in DC forward current without reverse bias		T <sub>J</sub>	175	°C
Storage temperature range		T <sub>stg</sub>	-55 to +175	°C

#### Note

<sup>(1)</sup> Mounted on epoxy substrate 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 CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 0.5\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	0.41	0.47	V
	$I_F = 1.1\text{ A}$			0.48	0.54	
	$I_F = 0.5\text{ A}$	$T_J = 100\text{ }^{\circ}\text{C}$		0.34	-	
	$I_F = 1.1\text{ A}$			0.43	-	
	$I_F = 0.5\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$		0.31	-	
	$I_F = 1.1\text{ A}$			0.42	-	
Reverse current	$V_R = 40\text{ V}$	$T_J = 25\text{ }^{\circ}\text{C}$	$I_R$	10	20	$\mu\text{A}$
		$T_J = 100\text{ }^{\circ}\text{C}$		1.2	2.6	mA
		$T_J = 125\text{ }^{\circ}\text{C}$		4.5	13	mA
Typical junction capacitance	$V_R = 4.0\text{ V}, 1\text{ MHz}$		$C_D$	65	-	pF

**Note**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

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

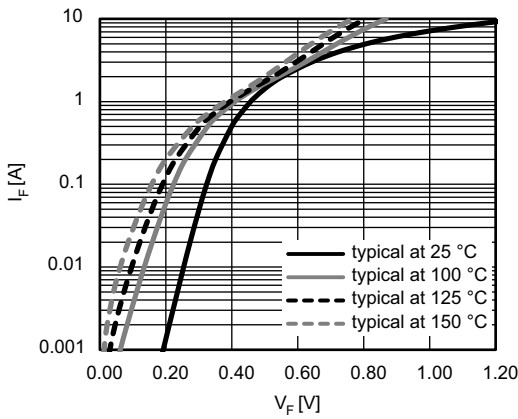


Fig. 1 - Typical Forward Characteristics

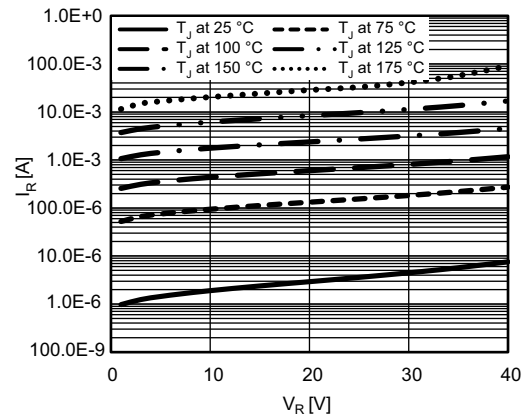


Fig. 3 - Typical Reverse Characteristics

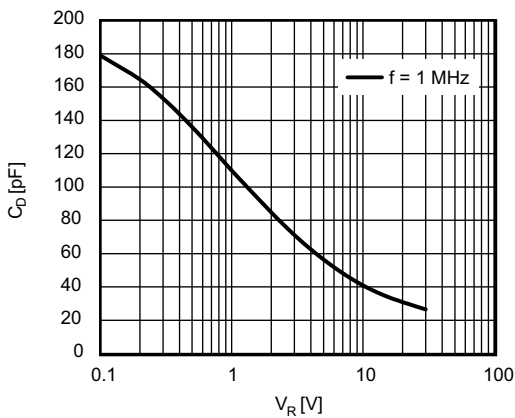


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

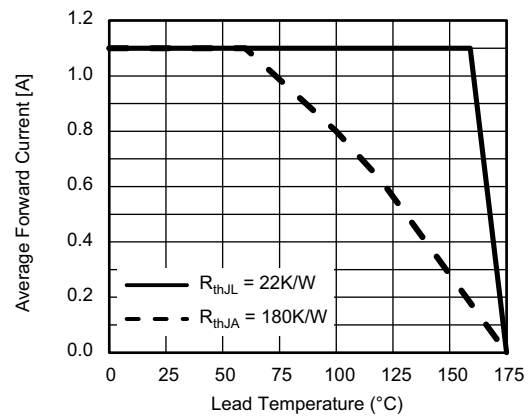


Fig. 4 - Forward Current Derating Curve

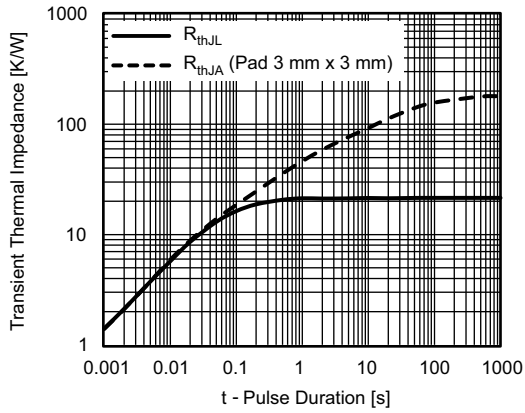
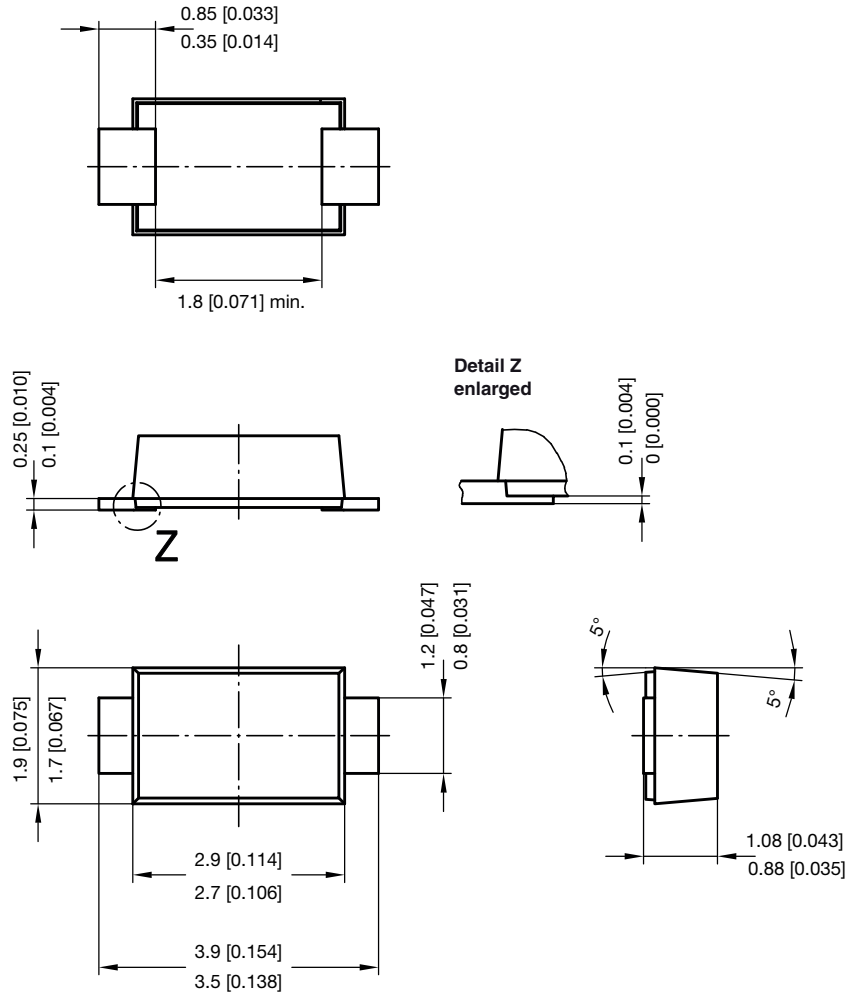
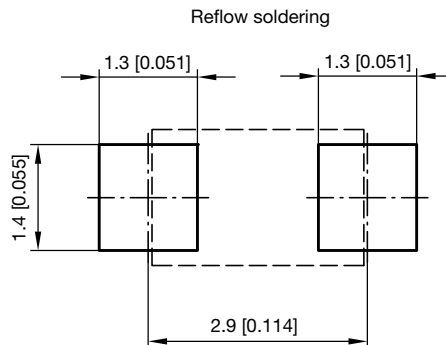


Fig. 5 - Typical Transient Thermal Impedance

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

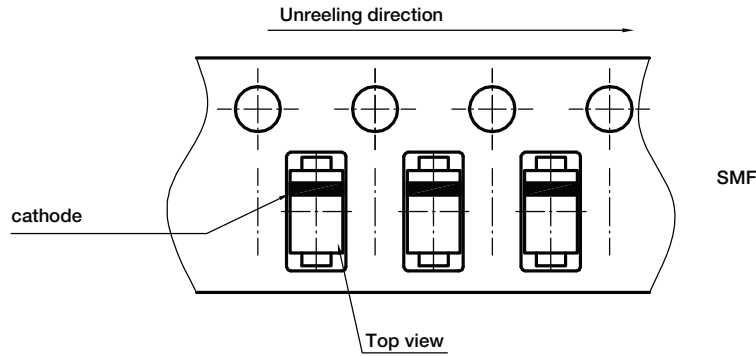


foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 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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