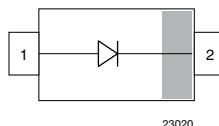
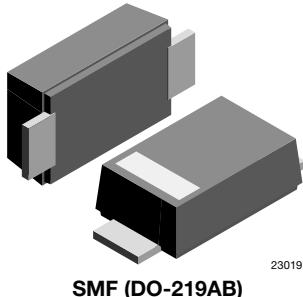


Schottky Rectifier Surface-Mount

eSMP® Series



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


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-HM3-18 or SL04-HM3-08	U4	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS	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 °C		I _{FSM}	40	A

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

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

Note

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

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

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 0.5 \text{ A}$	$T_J = 25^\circ C$	$V_F^{(1)}$	0.41	0.47	V	
	$I_F = 1.1 \text{ A}$			0.48	0.54		
	$I_F = 0.5 \text{ A}$	$T_J = 100^\circ C$		0.34	-		
	$I_F = 1.1 \text{ A}$			0.43	-		
	$I_F = 0.5 \text{ A}$	$T_J = 125^\circ C$		0.31	-		
	$I_F = 1.1 \text{ A}$			0.42	-		
Reverse current	$V_R = 40 \text{ V}$	$T_J = 25^\circ C$	I_R	10	20	μA	
		$T_J = 100^\circ C$		1.2	2.6	mA	
		$T_J = 125^\circ C$		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 μs pulse width, 1 % duty cycle

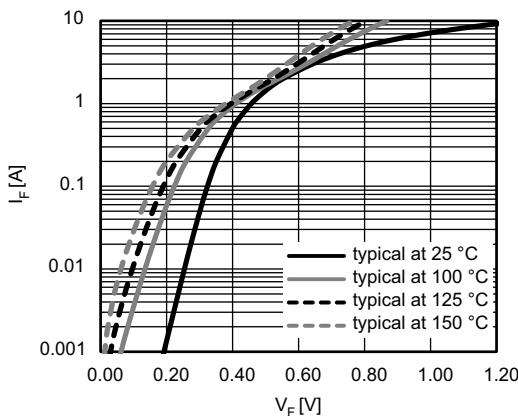
RATINGS AND CHARACTERISTICS CURVES ($T_{amb} = 25^\circ C$, unless otherwise specified)


Fig. 1 - Typical Forward Characteristics

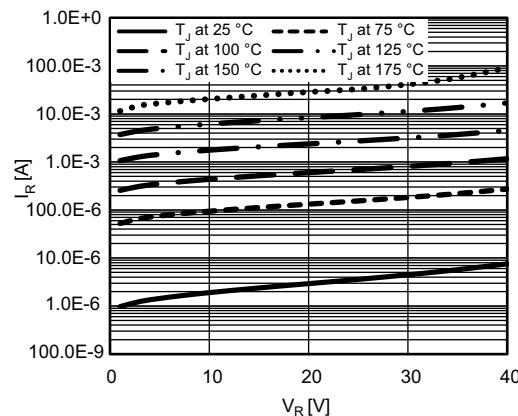


Fig. 3 - Typical Reverse Characteristics

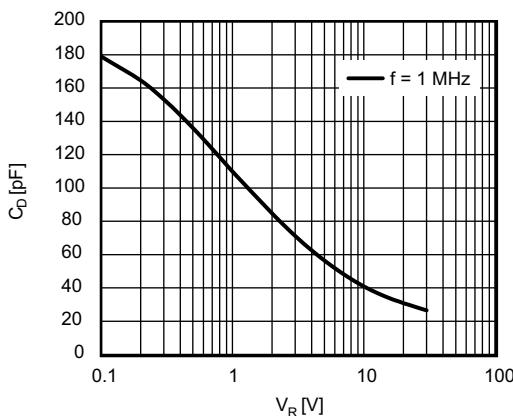


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

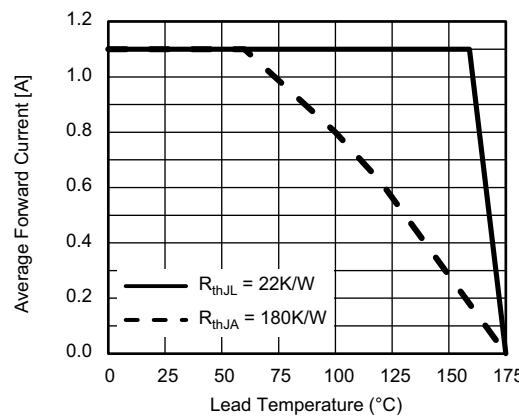


Fig. 4 - Forward Current Derating Curve

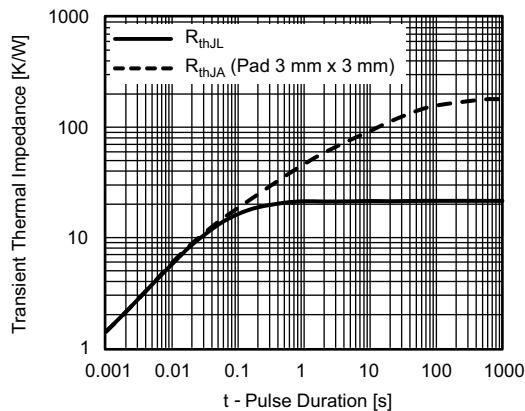
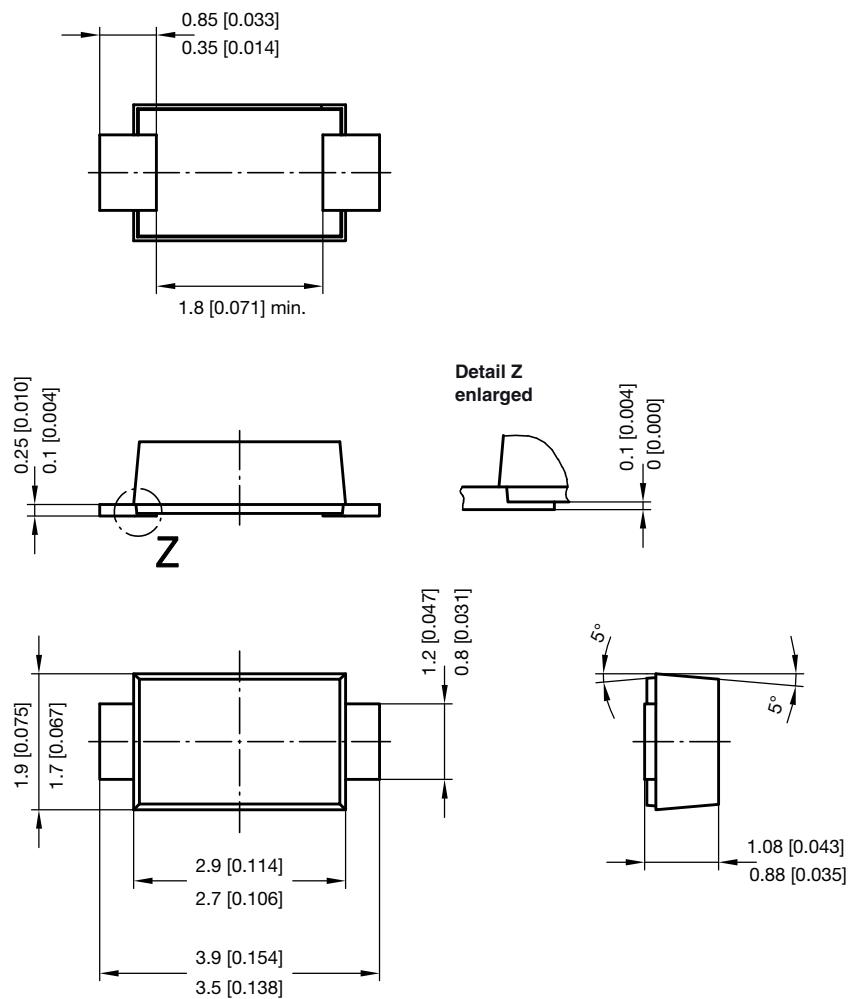
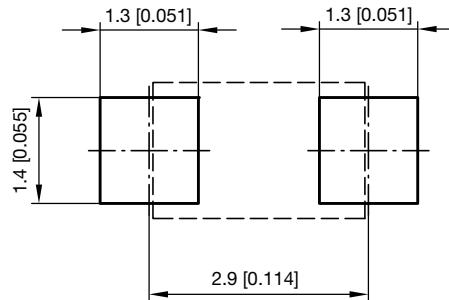


Fig. 5 - Typical Transient Thermal Impedance

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


foot print recommendation:

Reflow soldering

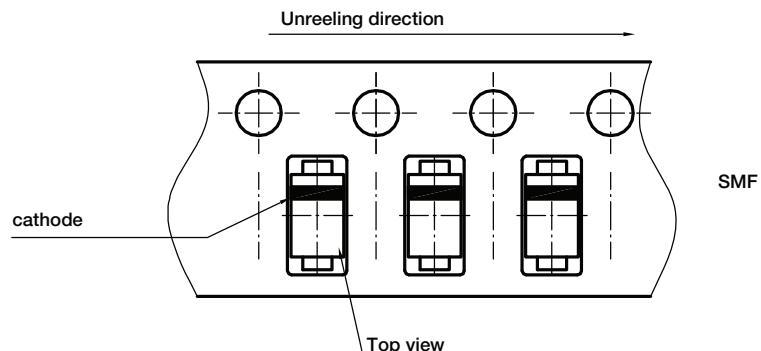


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22989

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

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22670

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