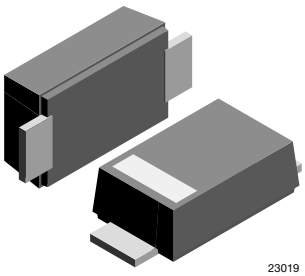
Schottky Rectifier Surface-Mount

eSMP® Series



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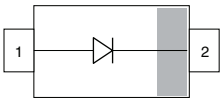

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SMF (DO-219AB)

FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- 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

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

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 (≥ 40 µm thick)

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I_F = 0.5 A	T_J = 25 °C	V_F (1)	0.41	0.47	V
	I_F = 1.1 A			0.48	0.54	
	I_F = 0.5 A	T_J = 100 °C		0.34	-	
	I_F = 1.1 A			0.43	-	
	I_F = 0.5 A	T_J = 125 °C		0.31	-	
	I_F = 1.1 A			0.42	-	
Reverse current	V_R = 40 V	T_J = 25 °C	I_R	10	20	µA
		T_J = 100 °C		1.2	2.6	mA
		T_J = 125 °C		4.5	13	mA
Typical junction capacitance	V_R = 4.0 V, 1 MHz		C_D	65	-	pF

Note

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

RATINGS AND CHARACTERISTICS CURVES (T_{amb} = 25 °C, unless otherwise specified)

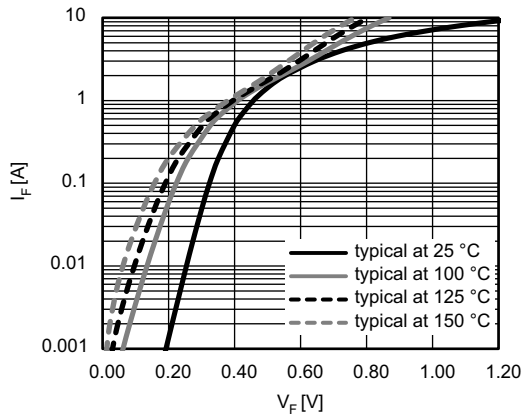


Fig. 1 - Typical Forward Characteristics

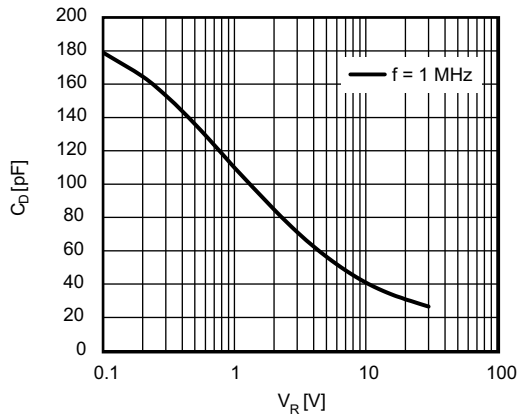


Fig. 2 - Typical Diode Capacitance vs. Reverse Voltage

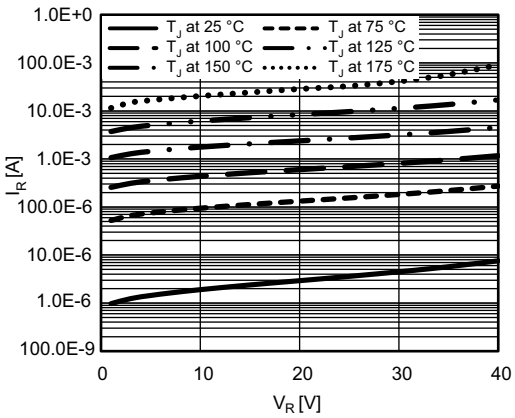


Fig. 3 - Typical Reverse Characteristics

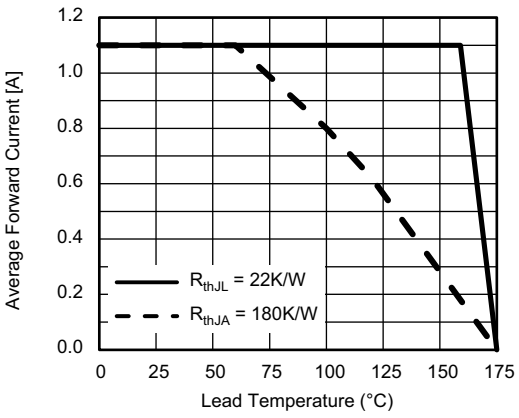


Fig. 4 - Forward Current Derating Curve

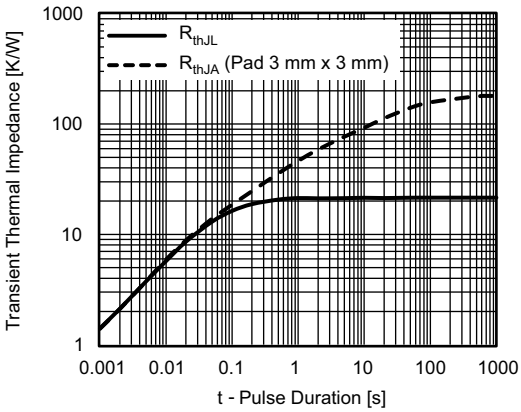
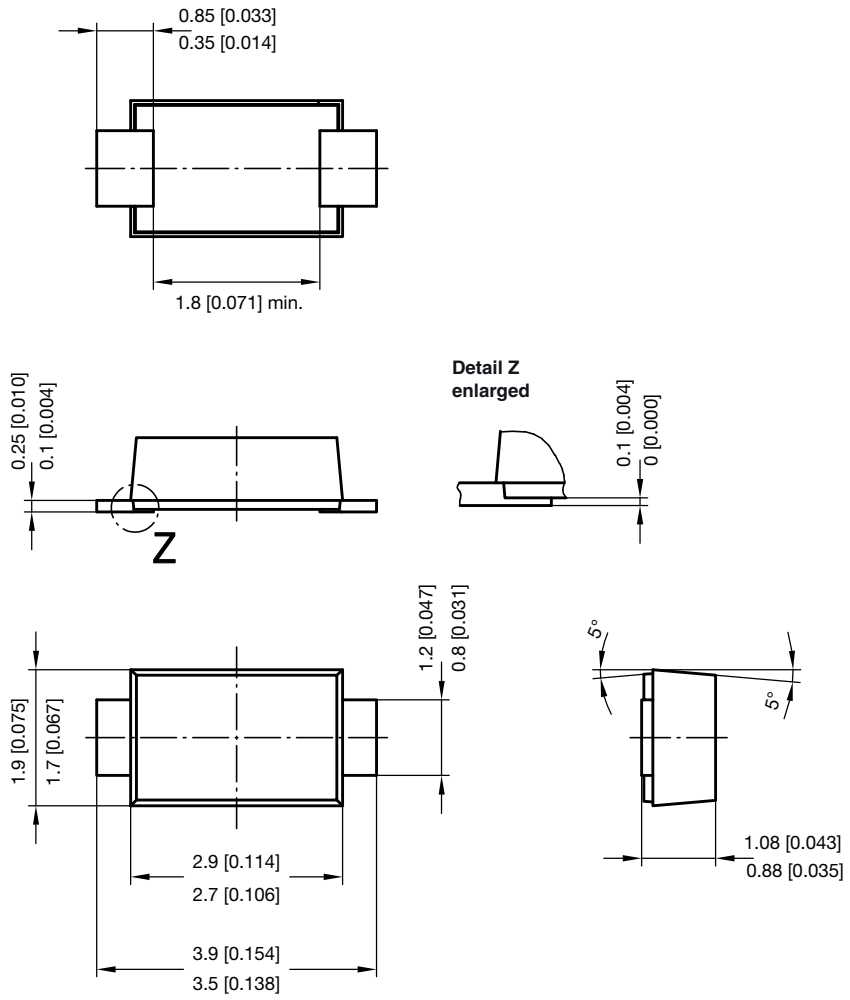


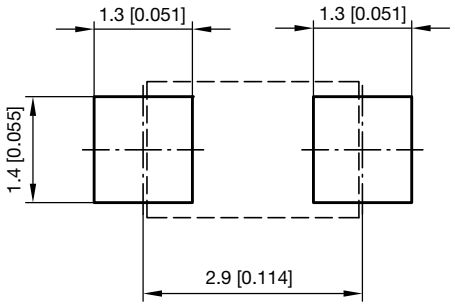
Fig. 5 - Typical Transient Thermal Impedance

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



foot print recommendation:

Reflow soldering



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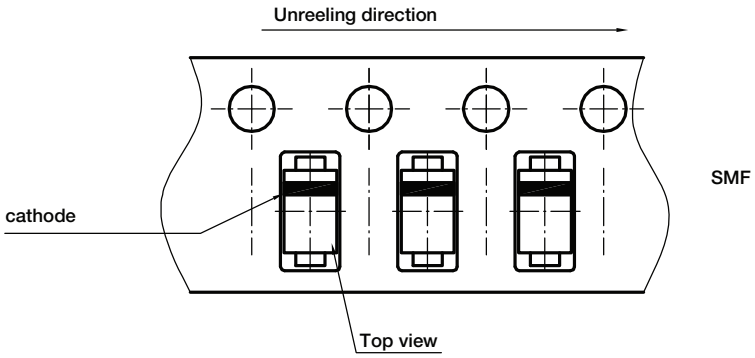
ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)



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