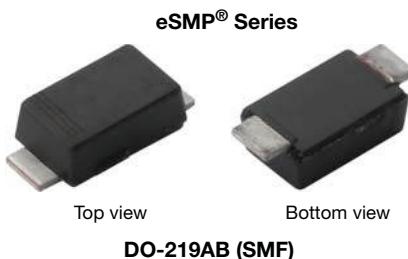


Surface Mount Schottky Barrier Rectifier



FEATURES

- Low profile package
- Ideal for automated placement
- Low forward voltage drop, low power losses
- Low leakage current
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Wave and reflow solderable
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-219AB (SMF)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	40 V
I_{FSM}	40 A
V_F at $I_F = 1.0$ A ($T_A = 125$ °C)	0.34 V
T_J max.	150 °C
Package	DO-219AB (SMF)
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	SS1FL4	UNIT
Device marking code		1L4	
Maximum repetitive peak reverse voltage	V_{RRM}	40	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}^{(1)}$	1.0	A
Non-repetitive peak forward surge current 8.3 ms single half sine-wave at T_J (init) = 25 °C	I_{FSM}	40	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Note

(1) Free air, mounted on recommended copper pad area

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 0.5 \text{ A}$	$T_A = 25^\circ\text{C}$	V_F ⁽¹⁾	0.39	-	V	
	$I_F = 1.0 \text{ A}$			0.44	0.50		
	$I_F = 0.5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.27	-		
	$I_F = 1.0 \text{ A}$			0.34	0.41		
Reverse current	$V_R = 40 \text{ V}$	$T_A = 25^\circ\text{C}$	I_R ⁽²⁾	-	200	μA	
		$T_A = 125^\circ\text{C}$		7	13	mA	
Typical junction capacitance	4.0 V, 1 MHz		C_J	115	-	pF	

Notes

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

(2) Pulse test: Pulse width $\leq 5 \text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS1FL4			UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾⁽²⁾⁽³⁾	125		22	$^\circ\text{C/W}$
	$R_{\theta JM}$ ⁽²⁾⁽³⁾				

Notes

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

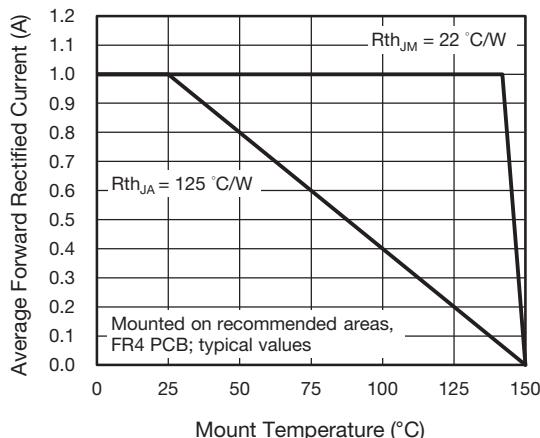
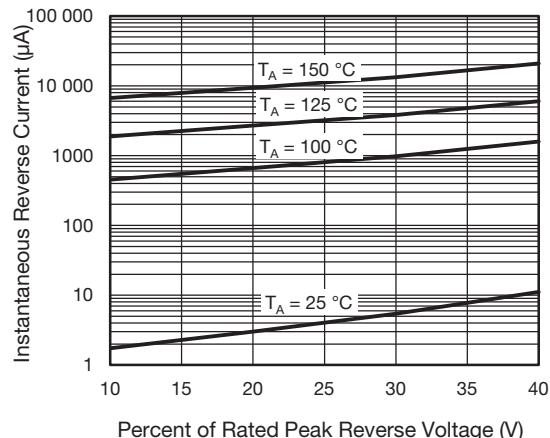
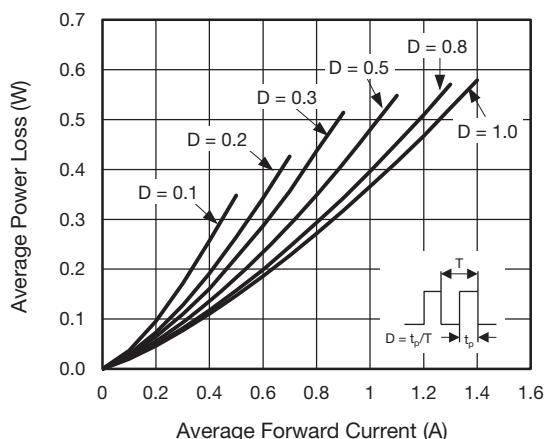
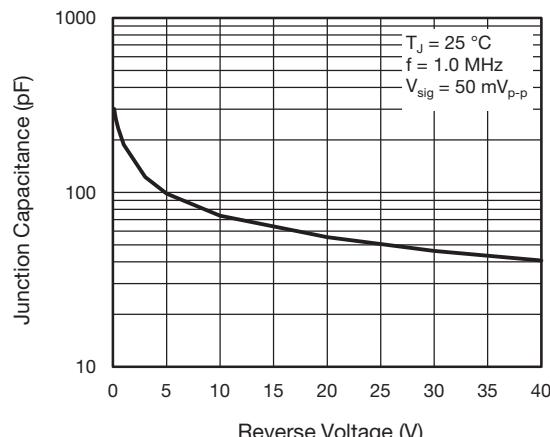
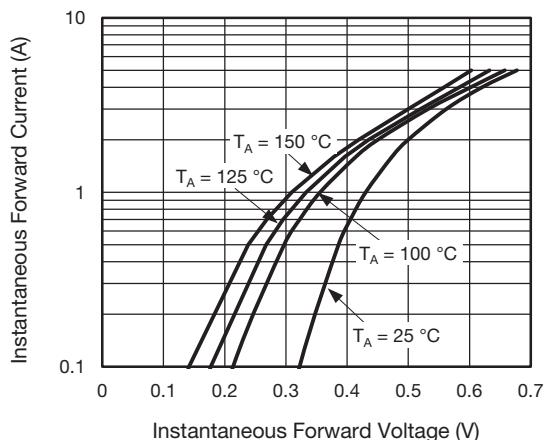
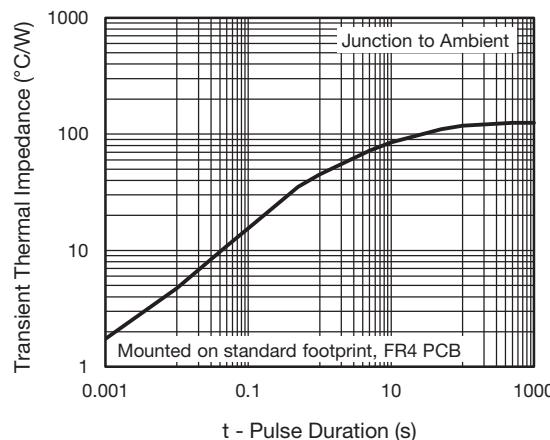
(2) Device mounted on FR4 PCB, 2 oz. standard footprint

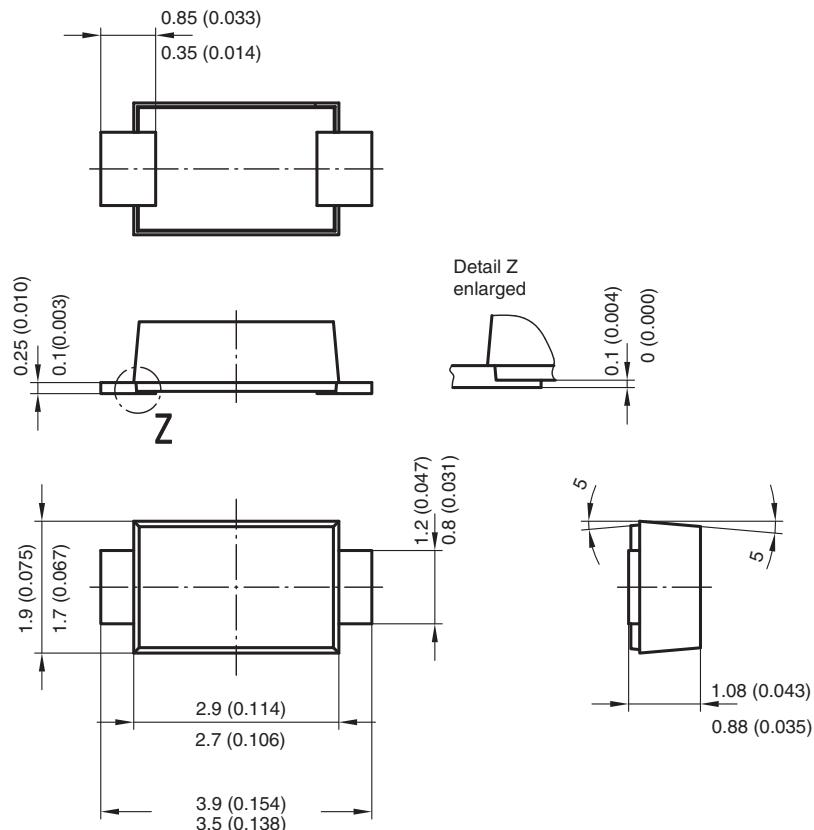
(3) Thermal resistance $R_{\theta JA}$ - junction to ambient; $R_{\theta JM}$ - junction to mount

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SS1FL4-M3/H	0.015	H	3000	7" diameter plastic tape and reel	
SS1FL4-M3/I	0.015	I	10 000	13" diameter plastic tape and reel	
SS1FL4HM3/H ⁽¹⁾	0.015	H	3000	7" diameter plastic tape and reel	
SS1FL4HM3/I ⁽¹⁾	0.015	I	10 000	13" diameter plastic tape and reel	

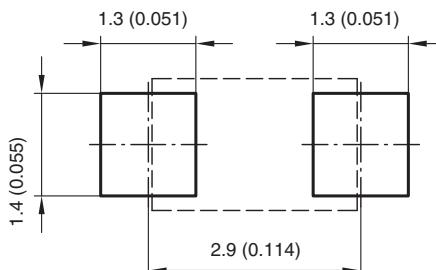
Note

(1) AEC-Q101 qualified

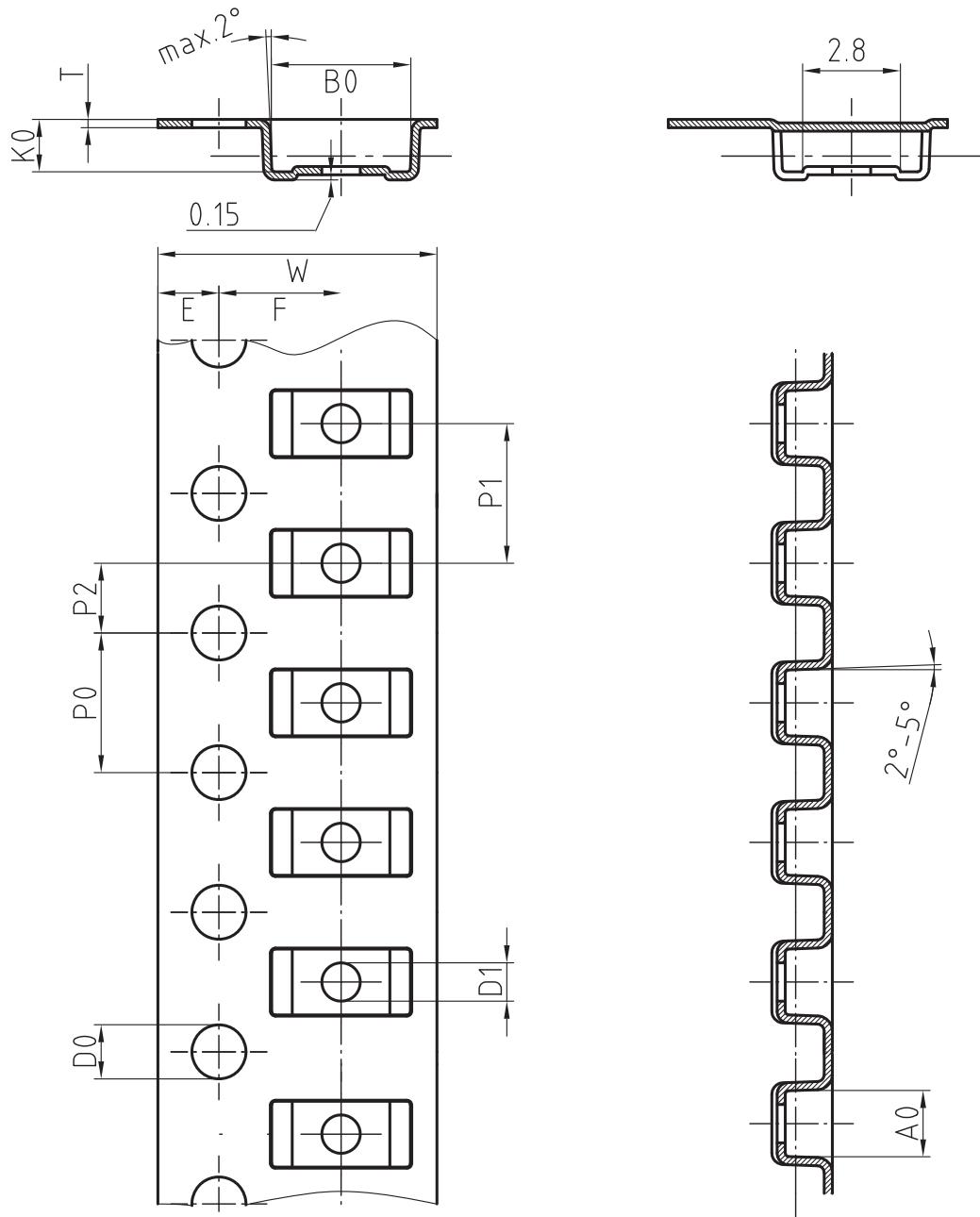
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Typical Forward Current Derating Curve

Fig. 4 - Typical Reverse Leakage Characteristics

Fig. 2 - Forward Power Loss Characteristics

Fig. 5 - Typical Junction Capacitance

Fig. 3 - Typical Instantaneous Forward Characteristics

Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in millimeters (inches)


Foot print recommendation:



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

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


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)

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