SS1FL4

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Vishay General Semiconductor

# Surface-Mount Schottky Barrier Rectifier



## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	1.0 A			
V <sub>RRM</sub>	40 V			
I <sub>FSM</sub>	40 A			
$V_F$ at $I_F$ = 1.0 A ( $T_A$ = 125 °C)	0.34 V			
T <sub>J</sub> max.	150 °C			
Package	SMF (DO-219AB)			
Circuit configuration	Single			

### 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
- Compatible to SOD-123W package case outline
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

#### **TYPICAL APPLICATIONS**

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

#### **MECHANICAL DATA**

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

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

Note

<sup>(1)</sup> Free air, mounted on recommended co

(2) pper pad area





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1

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SS1FL4

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 0.5 A	— T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.39	-	v
	I <sub>F</sub> = 1.0 A			0.44	0.50	
	I <sub>F</sub> = 0.5 A	- T <sub>A</sub> = 125 °C		0.27	-	
	I <sub>F</sub> = 1.0 A			0.34	0.41	
Reverse current	V 40.V	T <sub>A</sub> = 25 °C	– I <sub>R</sub> <sup>(2)</sup>	-	200	μA
	$V_{\rm R} = 40 \text{ V}$ $T_{\rm A} = 125 ^{\circ}$	T <sub>A</sub> = 125 °C		7	13	mA
Typical junction capacitance	4.0 V, 1 MHz		CJ	115	-	pF

#### Notes

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

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  5 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25$ °c unless otherwise noted)				
PARAMETER	SYMBOL	SS1FL4	UNIT	
Typical thermal resistance	R <sub>0JA</sub> (1)(2)(3)	125	°C/W	
	R <sub>0JM</sub> <sup>(2)(3)</sup>	22		

#### Notes

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

<sup>(2)</sup> 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	Н	3000	7" diameter plastic tape and reel
SS1FL4-M3/I	0.015	I	10 000	13" diameter plastic tape and reel
SS1FL4HM3/H <sup>(1)</sup>	0.015	Н	3000	7" diameter plastic tape and reel
SS1FL4HM3/I <sup>(1)</sup>	0.015	l	10 000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified



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### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

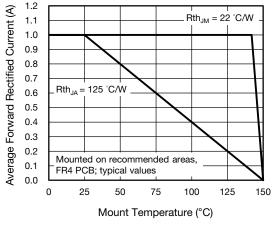
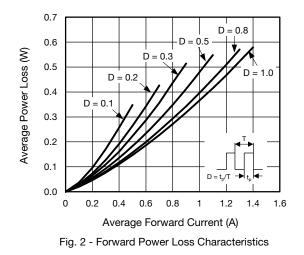
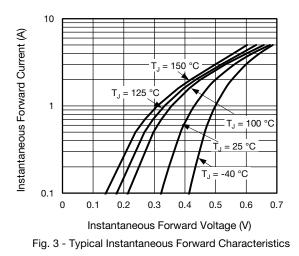


Fig. 1 - Typical Forward Current Derating Curve





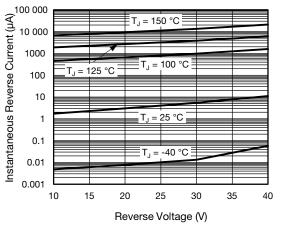
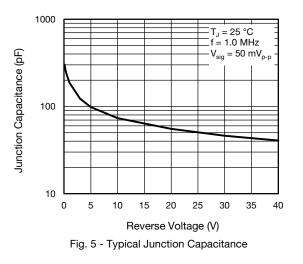
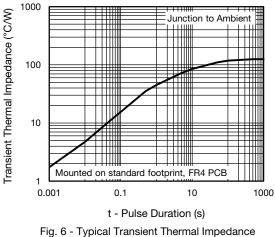


Fig. 4 - Typical Reverse Leakage Characteristics





Revision: 13-May-2020

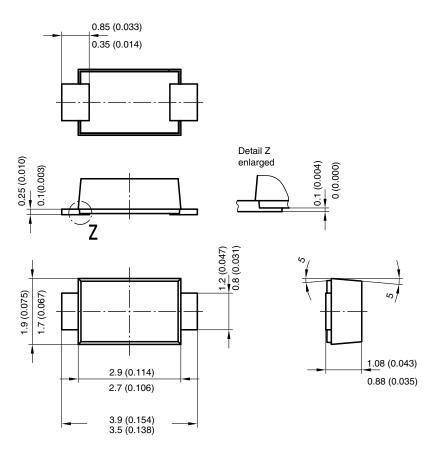
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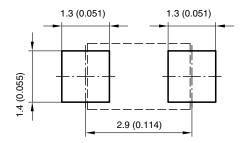


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### PACKAGE OUTLINE DIMENSIONS in millimeters (inches)



Foot print recommendation:



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