SS1FL3

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Surface-Mount Schottky Barrier Rectifier



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I _{F(AV)}	1.0 A			
V _{RRM}	30 V			
I _{FSM}	40 A			
V_F at I_F = 1.0 A (T_A = 125 °C)	0.31 V			
T _J 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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SS1FL3	UNIT		
Device marking code		1L3			
Maximum repetitive peak reverse voltage	V _{RRM}	30	V		
Maximum average forward rectified current (fig. 1)	I _{F(AV)} ⁽¹⁾	1.0	А		
Non-repetitive peak forward surge current 8.3 ms single half sine-wave at $T_{J\ (init)}$ = 25 $^{\circ}\text{C}$	I _{FSM}	40	А		
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C		

Note

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

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COMPLIANT

HALOGEN

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ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 0.5 A	— T _A = 25 °C	V _F (1)	0.38	-	V
	I _F = 1.0 A			0.42	0.48	
	I _F = 0.5 A	– T _A = 125 °C		0.26	-	
	I _F = 1.0 A			0.31	0.35	
Reverse current	V 20.V	$V_{\rm R} = 30 \text{ V}$ $T_{\rm A} = 25 \text{ °C}$ $T_{\rm A} = 125 \text{ °C}$	I _R ⁽²⁾	-	200	μA
	$v_{\rm R} = 30$ v			6	12	mA
Typical junction capacitance	4.0 V, 1 MHz		CJ	130	-	pF

Notes

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

⁽²⁾ Pulse test: Pulse width \leq 5 ms

THERMAL CHARACTERISTICS ($T_A = 25 \degree c$ unless otherwise noted)				
PARAMETER	SYMBOL	SS1FL3	UNIT	
Typical thermal resistance	R _{0JA} (1)(2)(3)	125	°C/W	
	R _{0JM} ⁽²⁾⁽³⁾	22		

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	
SS1FL3-M3/H	0.015	Н	3000	7" diameter plastic tape and reel	
SS1FL3-M3/I	0.015	I	10 000	13" diameter plastic tape and reel	
SS1FL3HM3/H ⁽¹⁾	0.015	Н	3000	7" diameter plastic tape and reel	
SS1FL3HM3/I ⁽¹⁾	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_A = 25 °C unless otherwise noted)

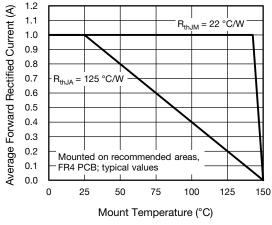
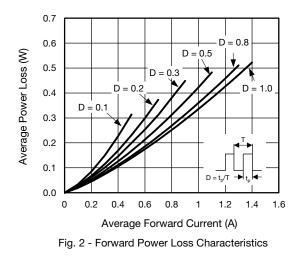
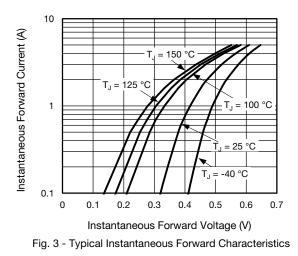


Fig. 1 - Typical Forward Current Derating Curve





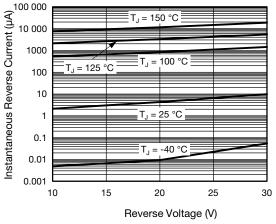
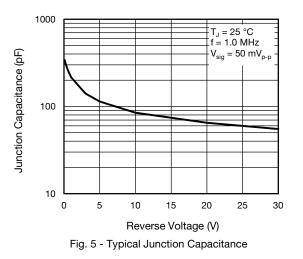
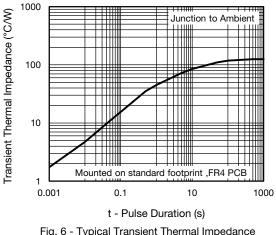
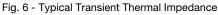


Fig. 4 - Typical Reverse Leakage Characteristics







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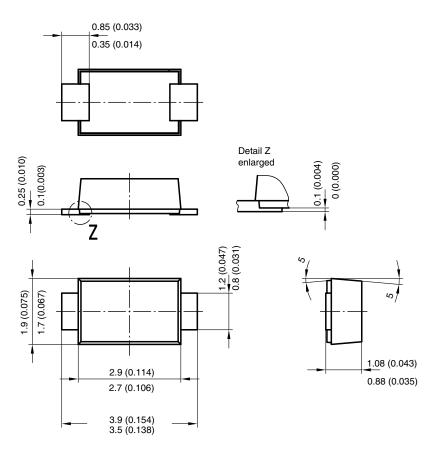
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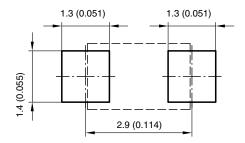


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PACKAGE OUTLINE DIMENSIONS in millimeters (inches)



Foot print recommendation:



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