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Vishay General Semiconductor

Surface Mount Schottky Barrier Rectifier



Cathode O Anode

DESIGN SUPPORT TOOLS AVAILABLE



PRIMARY CHARACTERISTICS								
I _{F(AV)}	1.0 A							
V _{RRM}	100 V							
I _{FSM}	40 A							
V_F at I_F = 1.0 A (T_A = 125 °C)	0.57 V							
T _J max.	175 °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
- 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 ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	SS1FH10	UNIT						
Device marking code		110							
Maximum repetitive peak reverse voltage	V _{RRM}	100	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 $T_{J \text{ (init)}} = 25 \text{ °C}$	I _{FSM}	40	A						
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +175	°C						

Note

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





COMPLIANT

HALOGEN

FREE

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SS1FH10

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ 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)	0.65	-	V		
	I _F = 1.0 A	$T_{A} = 25$ C		0.72	0.80			
	I _F = 0.5 A	T _A = 125 °C		0.51	-			
	I _F = 1.0 A	$T_{A} = 125 \text{ C}$		0.57	0.65			
Reverse current	V 100.V	T _A = 25 °C	ı (2)	-	5	μA		
	V _R = 100 V	T _A = 125 °C	I _R ⁽²⁾	65	160			
Typical junction capacitance	4.0 V, 1 MHz		CJ	70	-	pF		

Notes

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

⁽²⁾ Pulse test: Pulse width \leq 5 ms

THERMAL CHARACTERISTICS ($T_A = 25$ °c unless otherwise noted)							
PARAMETER	SYMBOL	SS1FH10	UNIT				
Typical thermal resistance	R _{0JA} (1)(2)(3)	125	°C/W				
Typical mermanesistance	R _{0JM} ⁽²⁾⁽³⁾	26	0/11				

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					
SS1FH10-M3/H	0.015	Н	3000	7" diameter plastic tape and reel					
SS1FH10-M3/I	0.015	I	10 000	13" diameter plastic tape and reel					
SS1FH10HM3/H (1)	0.015	Н	3000	7" diameter plastic tape and reel					
SS1FH10HM3/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 ($T_A = 25 \text{ °C}$ unless otherwise noted)

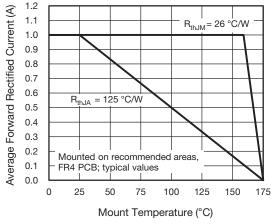


Fig. 1 - Typical Forward Current Derating Curve

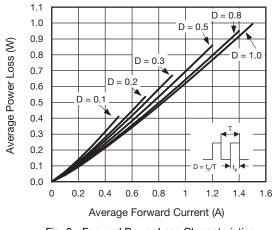
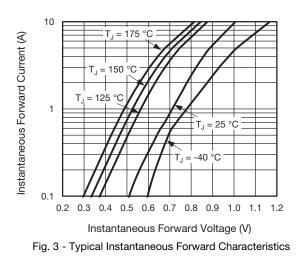
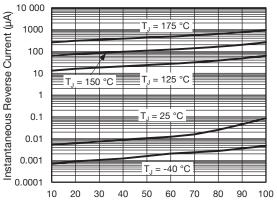


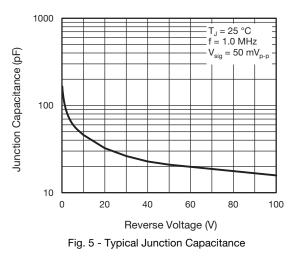
Fig. 2 - Forward Power Loss Characteristics

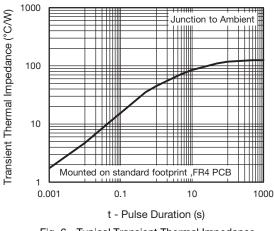




Percent of Rated Peak Reverse Voltage (%)

Fig. 4 - Typical Reverse Leakage Characteristics







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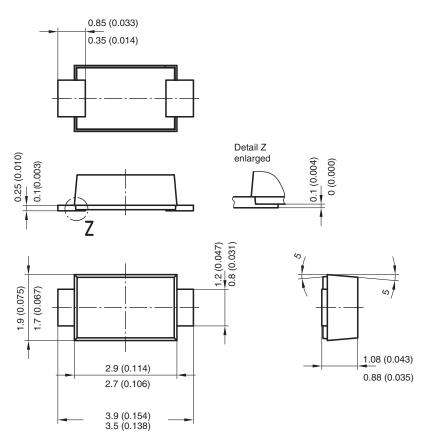
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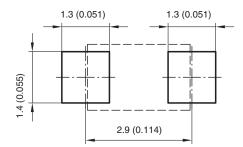


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PACKAGE OUTLINE DIMENSIONS in millimeters (inches)



Foot print recommendation:



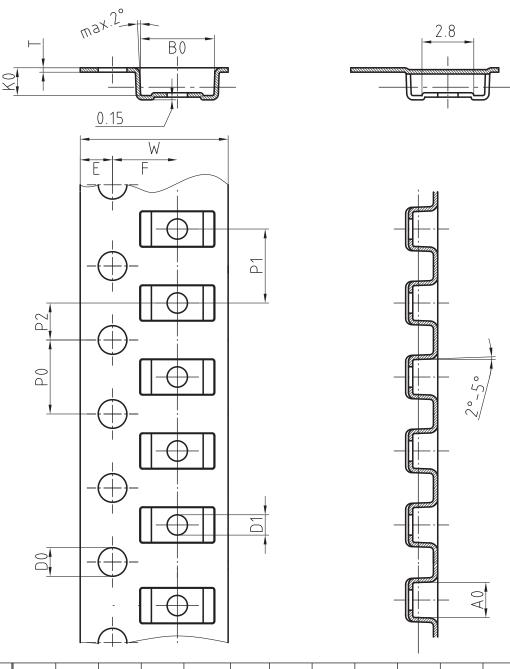
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BLISTERTAPE DIMENSIONS in millimeters: SMF (DO-219AB)



Mat:	A0	B0	K0	W	Т	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

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