

COMPLIANT

HALOGEN FREE

## **Surface Mount Standard Rectifiers**



#### **DO-219AB (SMF)**

PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	1.0 A				
V <sub>RRM</sub>	200 V, 400 V, 600 V				
I <sub>FSM</sub>	25 A				
$V_F$ at $I_F = 1.0$ A $(T_A = 125  ^{\circ}C)$	0.85 V				
I <sub>R</sub>	5 μΑ				
T <sub>J</sub> max.	175 °C				
Package	DO-219AB (SMF)				
Diode variations	Single die				

#### TYPICAL APPLICATIONS

General purpose, power line polarity protection, in commercial, industrial, and automotive applications.

#### **FEATURES**

- Low profile package
- Ideal for automated placement
- · Oxide planar chip junction
- · Low forward voltage drop, low leakage current
- ESD capability
- 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 <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### **MECHANICAL DATA**

Case: DO-219AB (SMF)

Molding compound meets UL 94 V-0 flammability rating

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

Base P/NHM3 - for 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 <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SE10FD	SE10FG	SE10FJ	UNIT
Device marking code		AD	AG	AJ	
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	V
Maximum DC forward current	I <sub>F(AV)</sub> (1)	1.0		Α	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	25		А	
Operating junction and storage temperature range	$T_J$ , $T_{STG}$	T <sub>STG</sub> -55 to +175			°C

#### Notes

<sup>(1)</sup> Free air, mounted on recommended PCB, 2 oz. pad area

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °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		0.90	-	V
	I <sub>F</sub> = 1.0 A		V <sub>E</sub> (1)	0.95	1.05	
	I <sub>F</sub> = 0.5 A	- T <sub>A</sub> = 125 °C	V <sub>F</sub> (·)	0.78	-	
	I <sub>F</sub> = 1.0 A			0.85	0.95	
Reverse current	Datad V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	-	5	μΑ
	Rated V <sub>R</sub>	T <sub>A</sub> = 125 °C	IR (-)	6.8	50	
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	780	-	ns
Typical junction capacitance	4.0 V, 1 MHz		CJ	7.5	-	pF

#### Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

# SE10FD, SE10FG, SE10FJ

## Vishay General Semiconductor

<b>THERMAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °c unless otherwise noted)						
PARAMETER	SYMBOL	SE10FD	SE10FG	SE10FJ	UNIT	
Typical thermal resistance	R <sub>0JA</sub> (1)	130		°C/W		
Typical trieffial resistance	R <sub>θJM</sub> <sup>(1)</sup>	20			G/ <b>VV</b>	

#### **Notes**

<sup>(1)</sup> Free air, mounted on recommended PCB, 2 oz. pad area; thermal resistance  $R_{\theta JA}$  - junction to ambient;  $R_{\theta JM}$  - junction to mount

IMMUNITY TO ELECTRICAL STATIC DISCHARGE TO THE FOLLOWING STANDARDS (T <sub>A</sub> = $25~^{\circ}$ C unless otherwise noted)					
STANDARD	TEST TYPE TEST CONDITIONS SYMBOL CLASS VALUE				
AEC-Q101-001	Human body model (contact mode)	$C = 100 \text{ pF}, R = 1.5 \text{ k}\Omega$	V <sub>C</sub>	НЗВ	> 8 kV

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SE10FJ-M3/H	0.015	Н	3000	7" diameter plastic tape and reel		
SE10FJ-M3/I	0.015	I	10 000	13" diameter plastic tape and reel		
SE10FJHM3/H (1)	0.015	Н	3000	7" diameter plastic tape and reel		
SE10FJHM3/I (1)	0.015	I	10 000	13" diameter plastic tape and reel		

#### Note

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

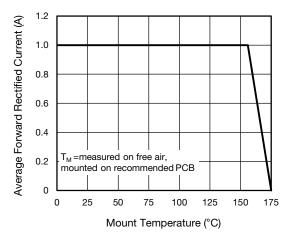


Fig. 1 - Maximum Forward Current Derating Curve

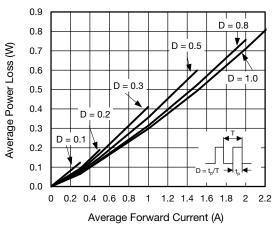


Fig. 2 - Average Power Loss Characteristics

<sup>(1)</sup> AEC-Q101 qualified





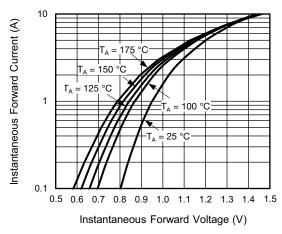


Fig. 3 - Typical Instantaneous Forward Characteristics

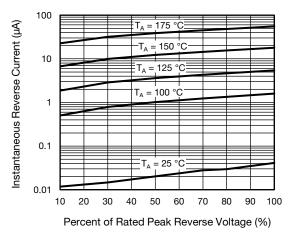


Fig. 4 - Typical Reverse Leakage Characteristics

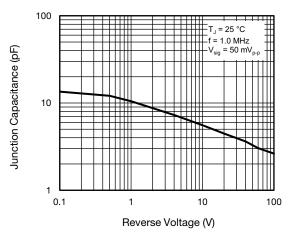


Fig. 5 - Typical Junction Capacitance

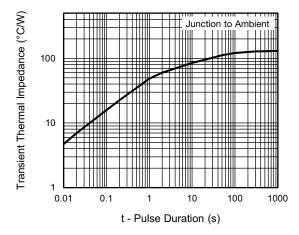
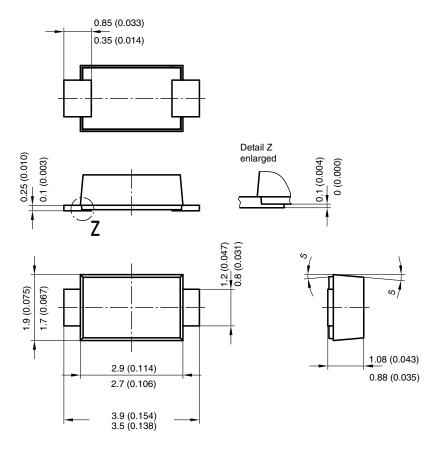
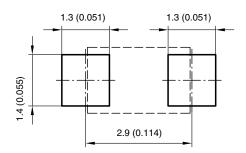


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in millimeters (inches)



#### Foot print recommendation:

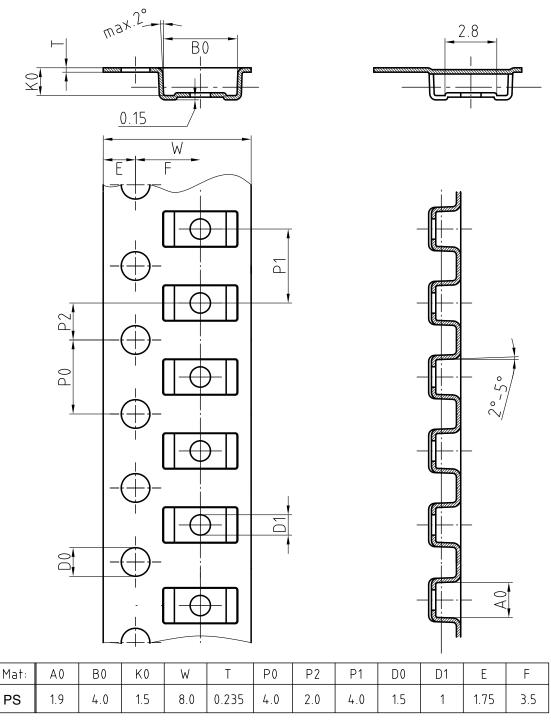


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### **BLISTERTAPE DIMENSIONS** in millimeters: **DO-219AB (SMF)**



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