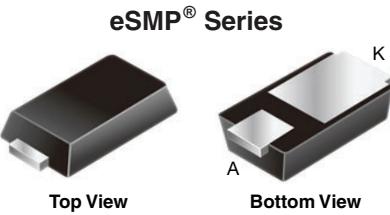


Surface-Mount TMBS® (Trench MOS Barrier Schottky) Rectifier


MicroSMP (DO-219AD)

Anode  Cathode

FEATURES

- Very low profile - typical height of 0.65 mm
- Ideal for automated placement
- Trench MOS Schottky technology
- Low forward voltage drop
- Low power loss, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- 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

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	150 V
I_{FSM}	25 A
V_F at $I_F = 1.0$ A (125 °C)	0.64 V
T_J max.	175 °C
Package	MicroSMP (DO-219AD)
Circuit configuration	Single

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: MicroSMP (DO-219AD)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, and 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	V1PM15	UNIT
Device marking code		1MC	
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum DC forward current	$I_{F(AV)}$	1.0	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	25	
Operating junction and storage temperature range	T_J (1), T_{STG}	-40 to +175	°C

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

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⁾	0.78	-	V
	$I_F = 1.0 \text{ A}$	$T_A = 25^\circ\text{C}$		1.13	1.21	
	$I_F = 0.5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.58	-	
	$I_F = 1.0 \text{ A}$	$T_A = 125^\circ\text{C}$		0.64	0.72	
Reverse current	$V_R = 100 \text{ V}$	$T_A = 25^\circ\text{C}$	I_R ⁽²⁾	0.001	-	mA
		$T_A = 125^\circ\text{C}$		0.15	-	
	$V_R = 150 \text{ V}$	$T_A = 25^\circ\text{C}$		-	0.05	
		$T_A = 125^\circ\text{C}$		0.3	1.5	
Typical junction capacitance	4.0 V, 1 MHz		C_J	65	-	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	V1PM15	UNIT
Typical thermal resistance	R_{0JA} ⁽¹⁾⁽²⁾	130	$^\circ\text{C/W}$
	R_{0JM} ⁽³⁾	20	

Notes

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{0JA}$

(2) Free air, mounted on FR4 PCB, 2 oz. standard footprint, R_{0JA} - junction to ambient

(3) Mounted on FR4 PCB, 2 oz. standard footprint, R_{0JM} - junction to mount

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V1PM15-M3/H	0.006	H	4500	7" diameter plastic tape and reel
V1PM15HM3/H ⁽¹⁾	0.006	H	4500	7" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

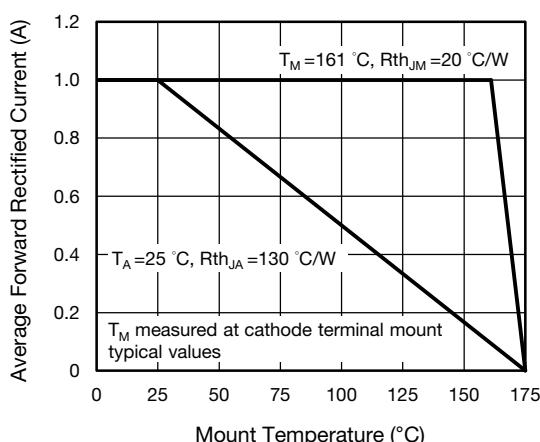
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

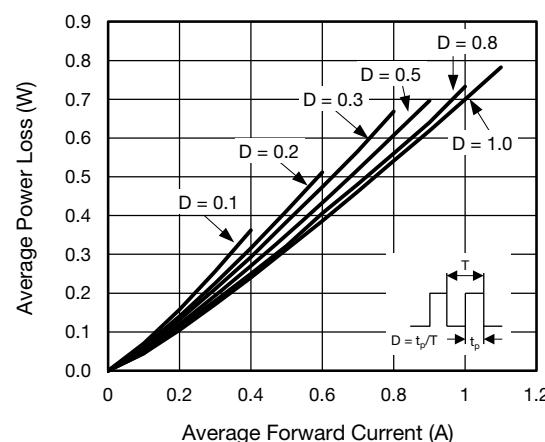
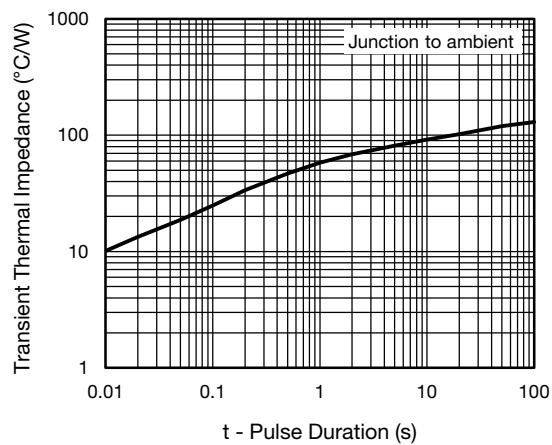
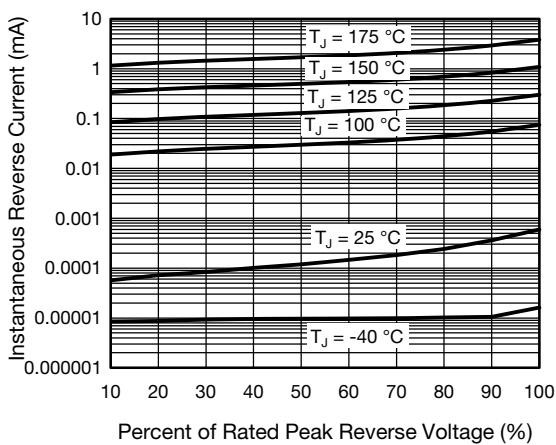
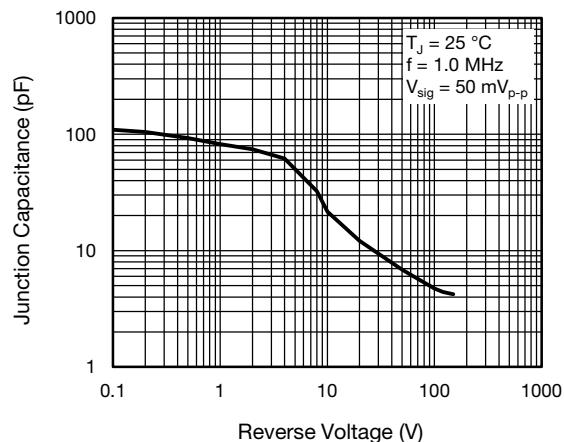
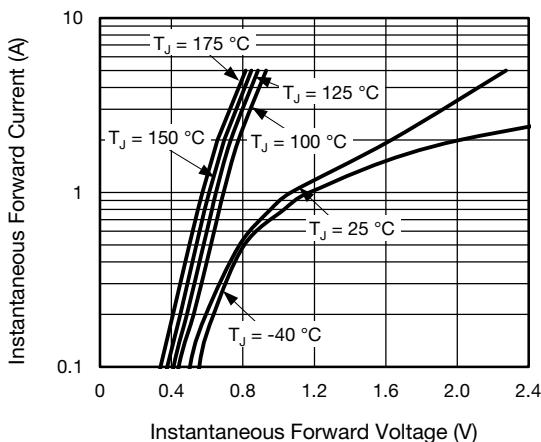
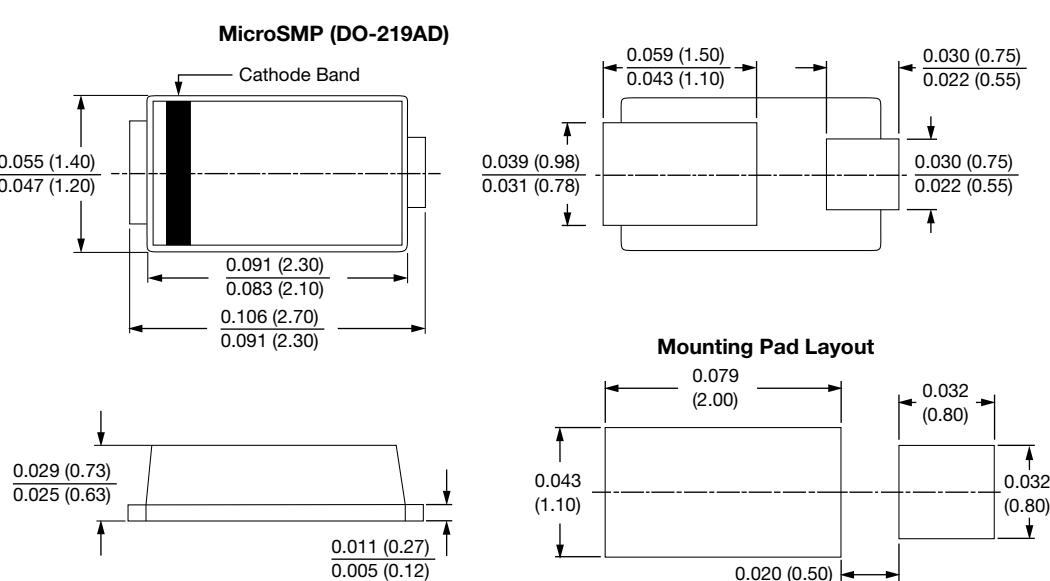


Fig. 2 - Average Power Loss Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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