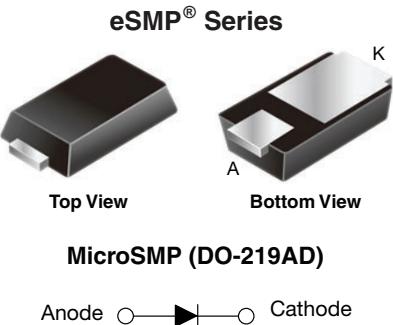


Surface-Mount TMBS® (Trench MOS Barrier Schottky) Rectifier



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	
$I_{F(AV)}$	2 A
V_{RRM}	150 V
I_{FSM}	30 A
V_F at $I_F = 2$ A (125 °C)	0.68 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	V2PM12	UNIT
Device marking code		2MC	
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum DC forward current	$I_{F(AV)}^{(1)}$	1.3	A
	$I_{F(AV)}^{(2)}$	2	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Operating junction and storage temperature range	T_J ⁽³⁾ , T_{STG}	-40 to +175	°C

Notes

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

(2) Mounted on 8.0 mm x 8.0 mm pad area

(3) 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	$I_F = 1.0 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.91	-	V	
	$I_F = 2.0 \text{ A}$			1.33	1.41		
	$I_F = 1.0 \text{ A}$	$T_A = 125^\circ\text{C}$		0.6	-		
	$I_F = 2.0 \text{ A}$			0.68	0.76		
Reverse current	$V_R = 100 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	0.001	-	mA	
		$T_A = 125^\circ\text{C}$		0.25	-		
	$V_R = 150 \text{ V}$	$T_A = 25^\circ\text{C}$		-	0.05		
		$T_A = 125^\circ\text{C}$		0.5	2		
Typical junction capacitance	$4.0 \text{ V}, 1 \text{ MHz}$		C_J	100	-	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	V2PM15		UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)(2)}$	130		$^\circ\text{C/W}$
	$R_{\theta JM}^{(3)}$	20		

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

(3) Mounted on PCB with 8.0 mm x 8.0 mm copper pad areas, $R_{\theta JM}$ - junction to mount

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V2PM15-M3/H	0.006	H	4500	7" diameter plastic tape and reel
V2PM15HM3/H ⁽¹⁾	0.006	H	4500	7" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

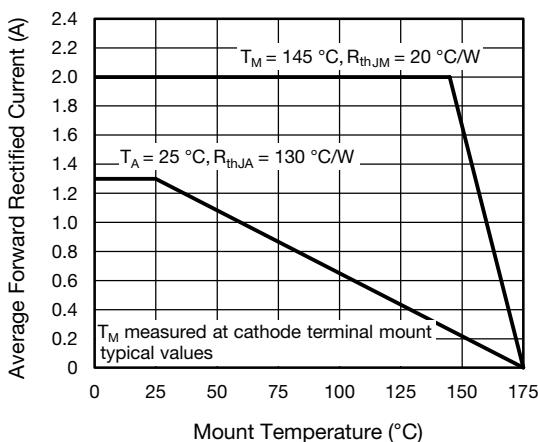
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

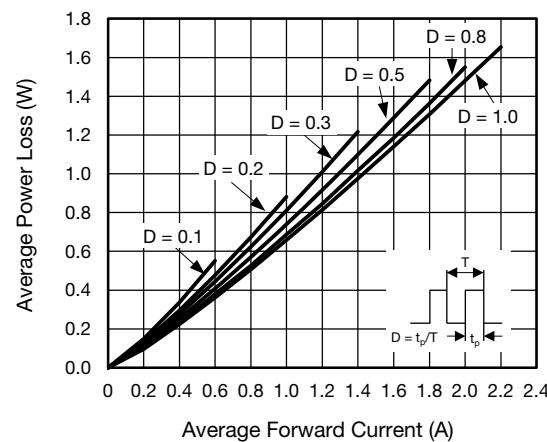
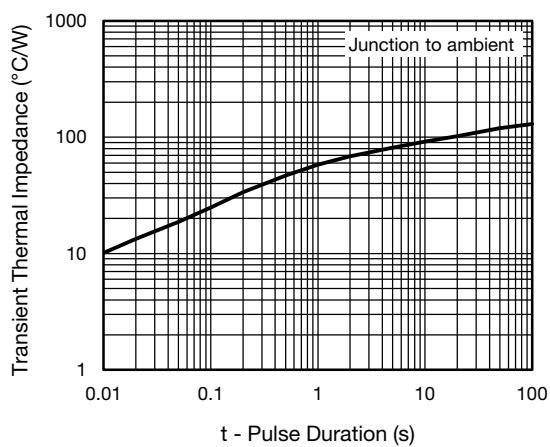
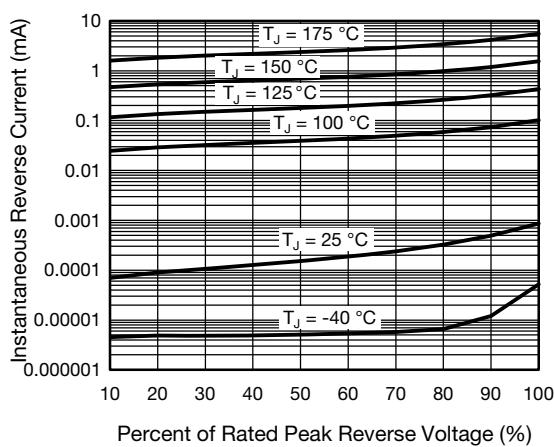
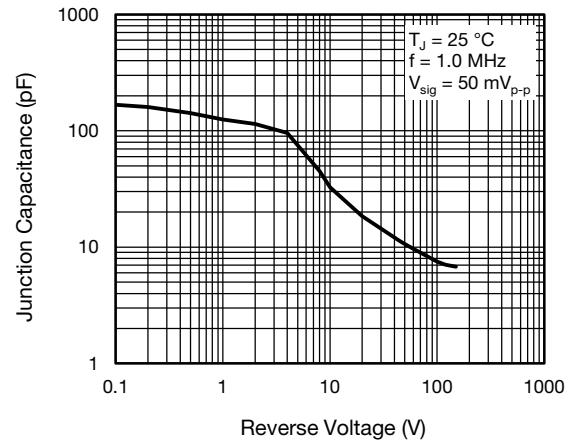
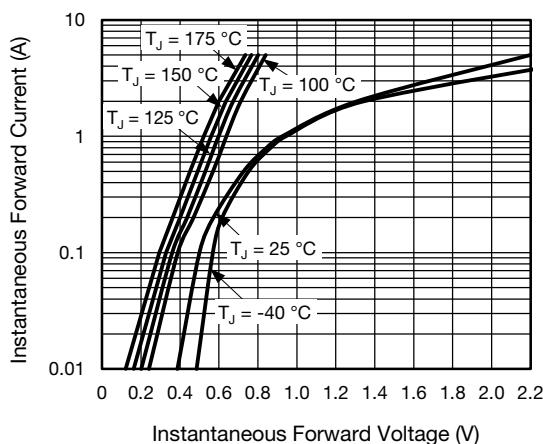
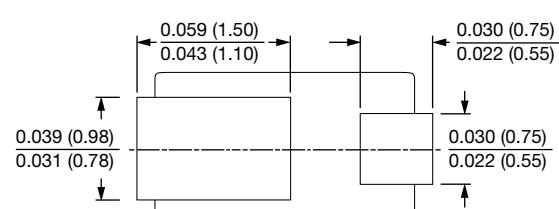
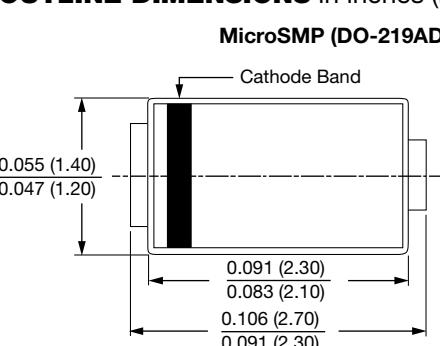


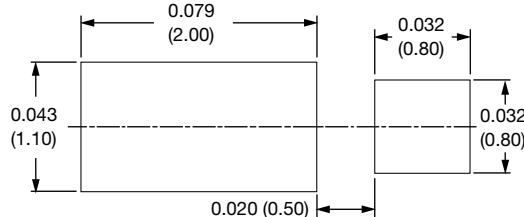
Fig. 2 - Average Power Loss Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout



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