

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

eSMP® Series



SMP (DO-220AA)

Cathode  Anode

FEATURES

- Low profile package
- Trench MOS Schottky technology
- Low power losses, high efficiency
- Low forward voltage drop
- 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	
$I_{F(AV)}$	2.0 A
V_{RRM}	60 V
I_{FSM}	50 A
V_F at $I_F = 2.0$ A	0.51 V
T_J max.	175 °C
Package	SMP (DO-220AA)
Circuit configuration	Single

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMP (DO-220AA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

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	V2P6X	UNIT
Device marking code		26X	
Maximum repetitive peak reverse voltage	V_{RRM}	60	V
Maximum DC forward current	$I_F^{(1)}$	2	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
Operating junction temperature range	$T_J^{(2)}$	-40 to +175	°C
Storage temperature range	T_{STG}	-55 to +175	°C

Notes

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

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

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	IF = 1 A	TA = 25 °C	VF (1)	0.48	-	V
	IF = 2 A			0.56	0.64	
	IF = 1 A	TA = 125 °C		0.40	-	
	IF = 2 A			0.51	0.59	
Reverse current	VR = 60 V	TA = 25 °C	IR (2)	-	0.1	mA
		TA = 125 °C		1.0	2.0	
Typical junction capacitance	4.0 V, 1 MHz		CJ	240	-	pF

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: pulse width $\leq 5\text{ ms}$ **THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	V2P6X	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	125	$^{\circ}\text{C/W}$
	$R_{\theta JM}^{(2)}$	15	

Notes(1) Free air, mounted on recommended PCB, 2 oz. pad area; thermal resistance $R_{\theta JA}$ - junction-to-ambient(2) Units mounted on recommended 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
V2P6X-M3/H	0.024	H	3000	7" diameter plastic tape and reel
V2P6X-M3/I	0.024	I	10 000	13" diameter plastic tape and reel
V2P6XHM3/H ⁽¹⁾	0.024	H	3000	7" diameter plastic tape and reel
V2P6XHM3/I ⁽¹⁾	0.024	I	10 000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

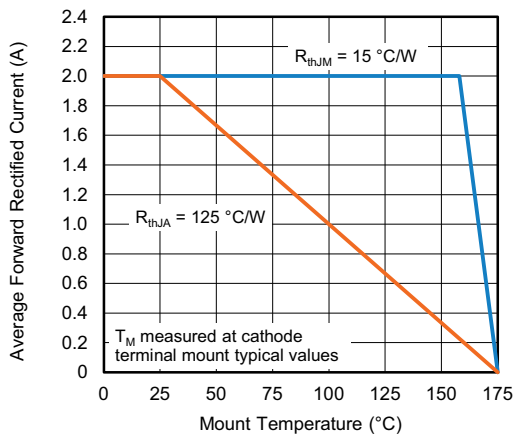
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

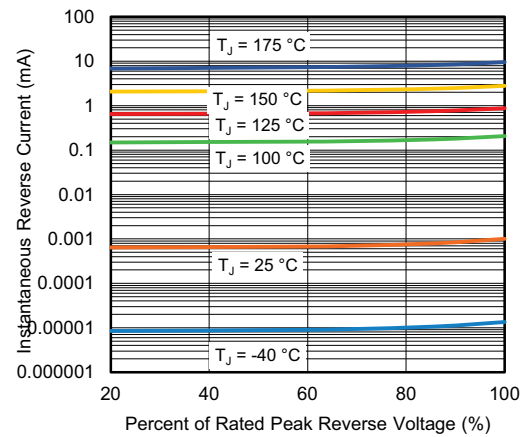


Fig. 4 - Typical Reverse Characteristics

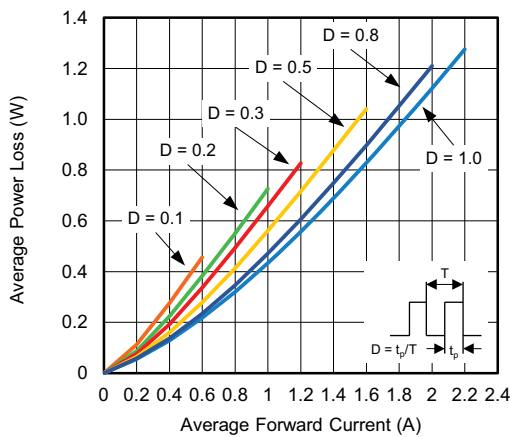


Fig. 2 - Forward Power Loss Characteristics

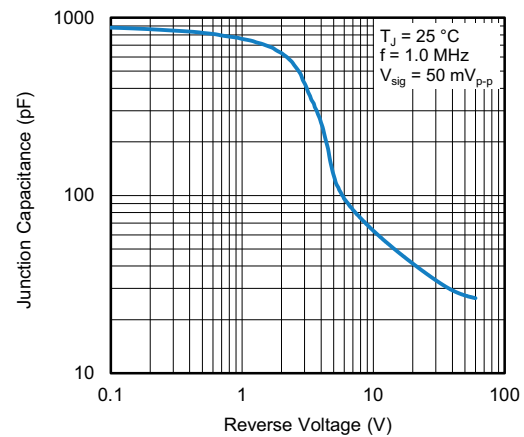


Fig. 5 - Typical Junction Capacitance

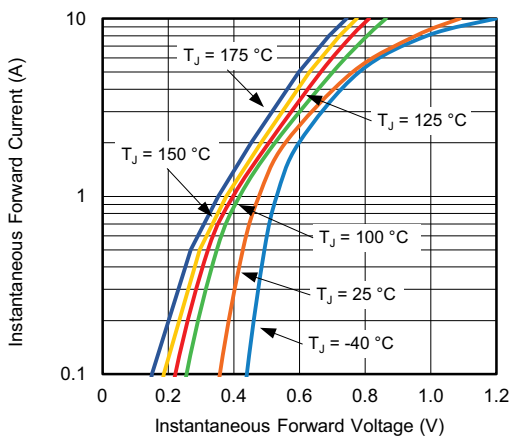


Fig. 3 - Typical Instantaneous Forward Characteristics

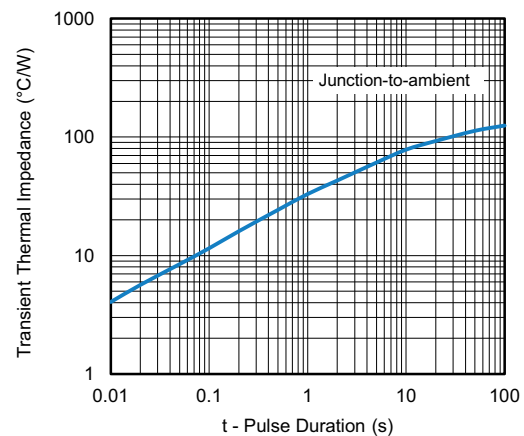
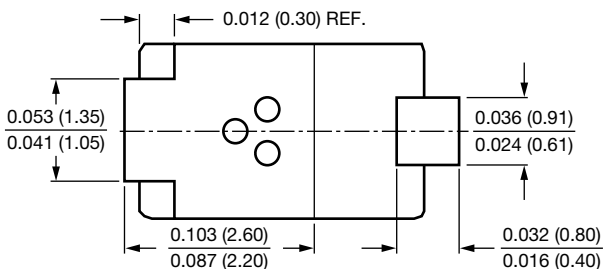
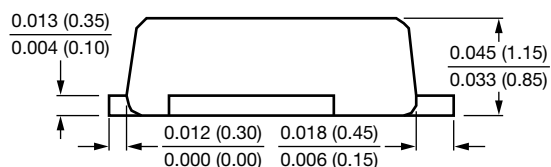
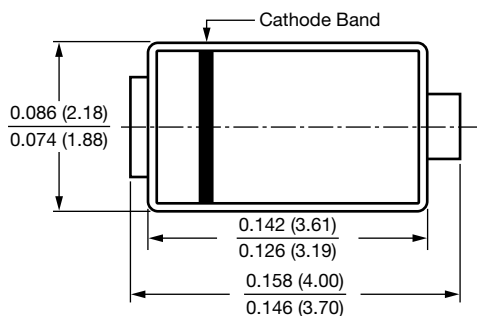


Fig. 6 - Typical Transient Thermal Impedance

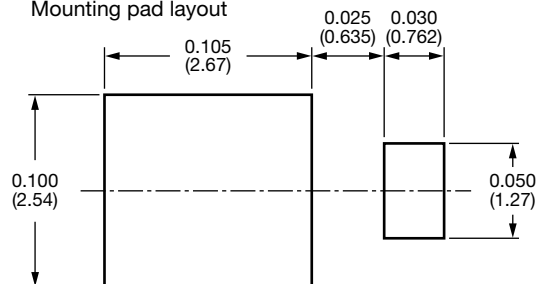


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMP (DO-220AA)



Mounting pad layout





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