



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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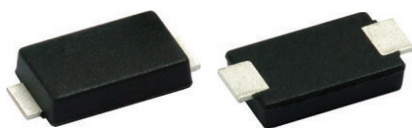
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Surface Mount Trench MOS Barrier Schottky Rectifier

TMBS® SlimSMA™


Top View

Bottom View

DO-221AC

FEATURES

- Very low profile - typical height of 0.95 mm
- Ideal for automated placement
- 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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-221AC (SlimSMA)

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

Base P/NHM3_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified

("_X" denotes revision code e.g. A, B,.....)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD22-B102

M3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	3.0 A
V_{RRM}	45 V
I_{FSM}	80 A
I_R at $V_R = 45$ V (125 °C)	5 mA
V_F at $I_F = 3.0$ A (125 °C)	0.37 V
T_J max.	150 °C
Package	DO-221AC (SlimSMA)
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	VSSAF3L45	UNIT
Device marking code		3L45	
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum DC forward rectified current	$I_{F(AV)}^{(1)}$	3.0	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	80	A
Operating junction and storage temperature range	T_J, T_{STG}	-40 to +150	°C

Note

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

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 1.5\text{ A}$	$V_F^{(1)}$	0.41	-	V
	$I_F = 3.0\text{ A}$		0.46	0.54	
	$I_F = 1.5\text{ A}$		0.31	-	
	$I_F = 3.0\text{ A}$		0.37	0.46	
Reverse current	$V_R = 45\text{ V}$	$I_R^{(2)}$	-	450	μA
			5	25	mA
Typical junction capacitance	4.0 V, 1 MHz	C_J	425	-	pF

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
(2) Pulse test: pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)			
PARAMETER	SYMBOL	VSSAF3L45	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	115	$^{\circ}\text{C/W}$
	$R_{\theta JM}^{(2)}$	12	

Notes

- (1) Free air, mounted on recommended PCB, 2 oz. pad area; thermal resistance $R_{\theta JA}$ - junction to ambient; $R_{\theta JM}$ - junction to mount
(2) The heat generated must be less than thermal conductivity from junction to ambient: $dP_D/DT_J < 1/R_{\theta JA}$

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
VSSAF3L45-M3/6A	0.032	6A	3500	7" diameter plastic tape and reel
VSSAF3L45-M3/6B	0.032	6B	14 000	13" diameter plastic tape and reel
VSSAF3L45HM3/6A ⁽¹⁾	0.032	6A	3500	7" diameter plastic tape and reel
VSSAF3L45HM3/6B ⁽¹⁾	0.032	6B	14 000	13" diameter plastic tape and reel
VSSAF3L45HM3_A/H ⁽¹⁾	0.032	H	3500	7" diameter plastic tape and reel
VSSAF3L45HM3_A/I ⁽¹⁾	0.032	I	14 000	13" diameter plastic tape and reel

Note

- (1) AEC-Q101 qualified

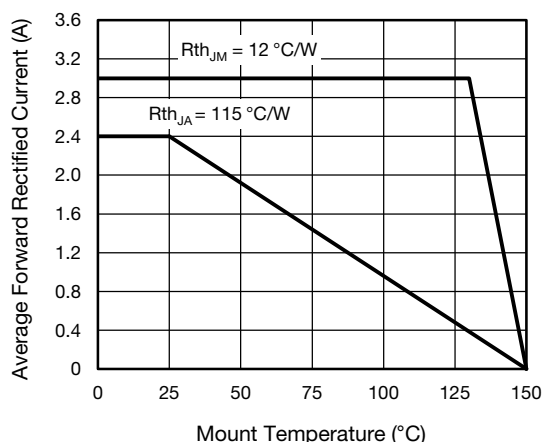
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)


Fig. 1 - Maximum Forward Current Derating Curve

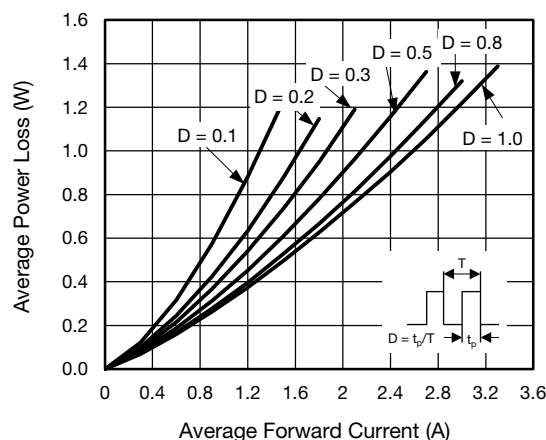


Fig. 2 - Average Power Loss Characteristics

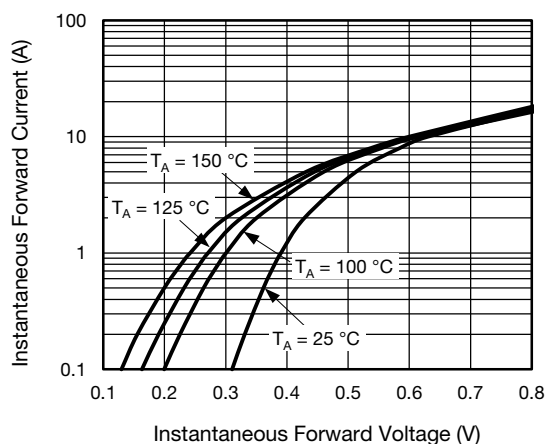


Fig. 3 - Typical Instantaneous Forward Characteristics

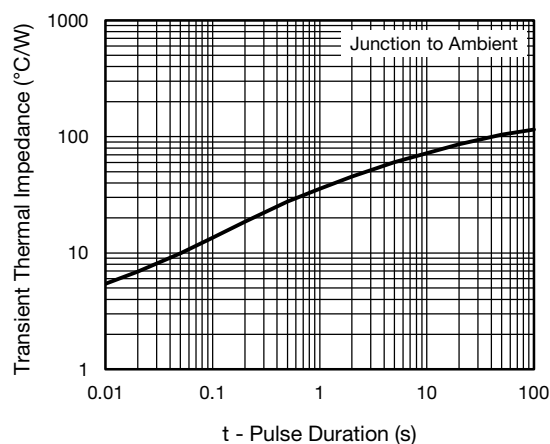


Fig. 6 - Typical Transient Thermal Impedance

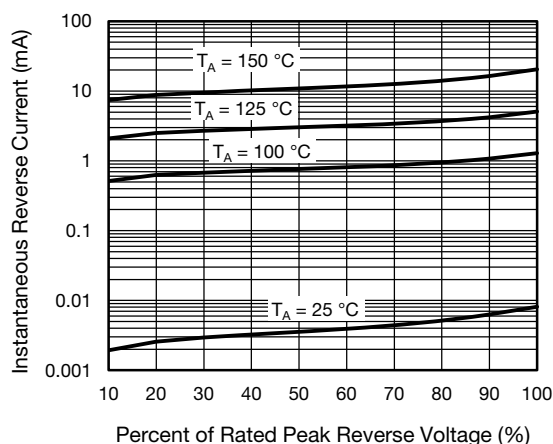


Fig. 4 - Typical Reverse Leakage Characteristics

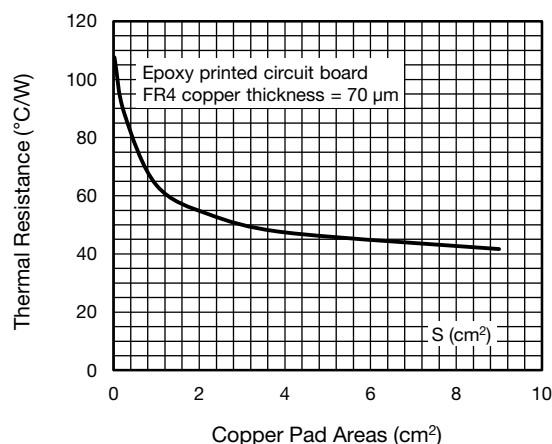


Fig. 7 - Thermal Resistance Junction to Ambient vs. Copper Pad Areas

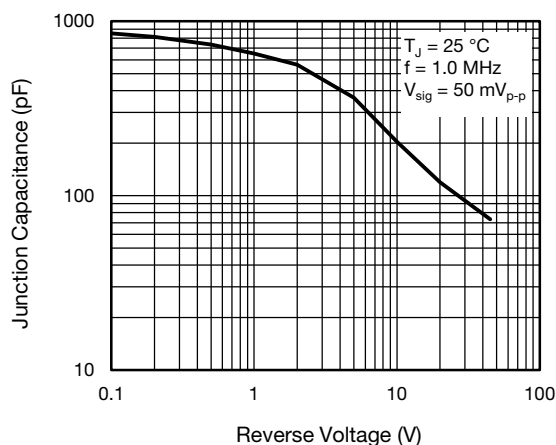
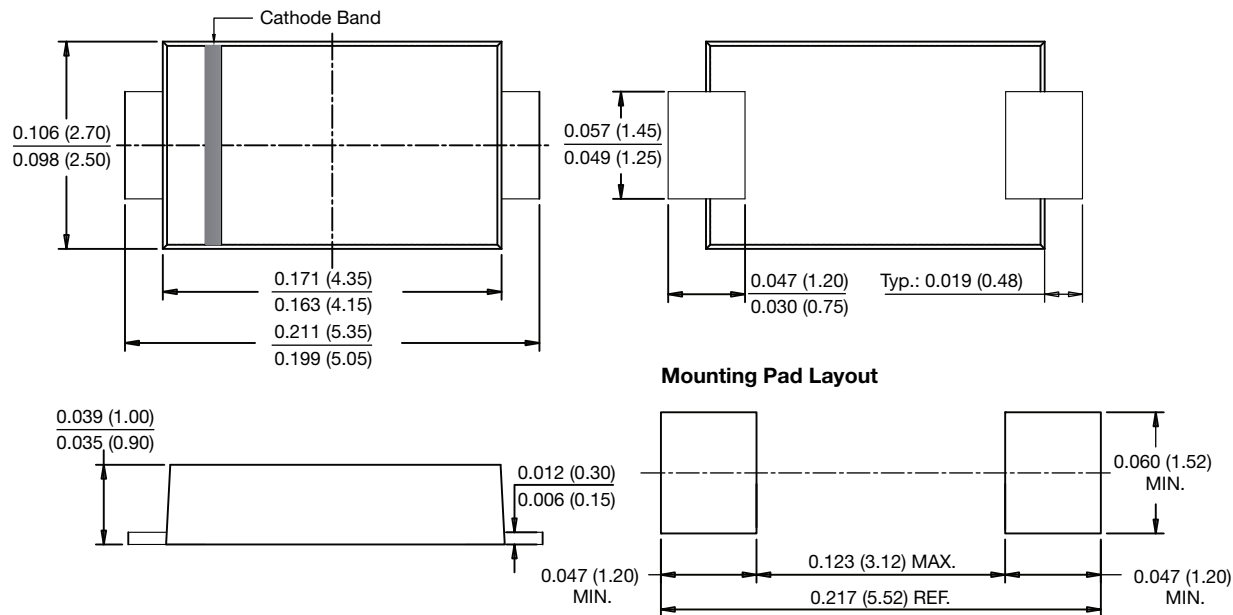


Fig. 5 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-221AC (SlimSMA)





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