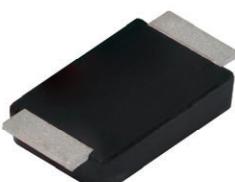


Surface-Mount Standard Rectifier

eSMP® Series



Top View



Bottom View

SlimSMAW (DO-221AD)

Cathode  Anode

LINKS TO ADDITIONAL RESOURCES



FEATURES

- Low-profile package
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHM3
- Compatible to SOD-128 package case outline
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

General purpose, power line polarity protection and rail-to-rail protection in consumer, industrial, and automotive applications.

MECHANICAL DATA

Case: SlimSMAW (DO-221AD)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-M3 - halogen-free, 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 meet JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3 A
V_{RRM}	200 V to 600 V
I_{FSM}	40 A
V_F at $I_F = 3$ A ($T_J = 125$ °C)	0.86 V
T_J max.	175 °C
Package	SlimSMAW (DO-221AD)
Circuit configuration	Single

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	SE8D30D	SE8D30G	SE8D30J	UNIT
Device marking code		SD3D	SD3G	SD3J	
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Maximum average forward rectified current (fig.1)	$I_{F(AV)}^{(1)}$	3			A
	$I_{F(AV)}^{(2)}$	1.5			
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	40			A
Operating junction temperature range	T_J ⁽³⁾	-55 to +175			°C
Storage temperature range	T_{STG}	-55 to +175			

Notes

(1) Mounted on 30 mm x 30 mm pad areas aluminum PCB

(2) Free air, mounted on recommended copper 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 ($T_J = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 1.5 \text{ A}$	$T_J = 25^\circ\text{C}$	V_F ⁽¹⁾	0.91	-	V	
	$I_F = 3 \text{ A}$			0.97	1.1		
	$I_F = 1.5 \text{ A}$	$T_J = 125^\circ\text{C}$		0.79	-		
	$I_F = 3 \text{ A}$			0.86	0.98		
Reverse current	Rated V_R	$T_J = 25^\circ\text{C}$	I_R ⁽²⁾	-	10	μA	
		$T_J = 125^\circ\text{C}$		13	100		
Typical reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 0.1 \text{ A}$, $I_{rr} = 0.25 \text{ A}$		t_{rr}	1500	-	ns	
Typical junction capacitance	4.0 V, 1 MHz		C_J	19	-	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 specified)					
PARAMETER	SYMBOL	TYP.	MAX.	UNIT	
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾⁽²⁾	120	150	$^\circ\text{C/W}$	
	$R_{\theta JM}$ ⁽³⁾	12	15		

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) Thermal resistance junction-to-ambient to follow JEDEC® 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint

(3) Thermal resistance junction-to-mount to follow JEDEC 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SE8D30J-M3/H	0.033	H	3500	7" diameter plastic tape and reel	
SE8D30J-M3/I	0.033	I	14 000	13" diameter plastic tape and reel	
SE8D30JHM3/H ⁽¹⁾	0.033	H	3500	7" diameter plastic tape and reel	
SE8D30JHM3/I ⁽¹⁾	0.033	I	14 000	13" diameter plastic tape and reel	

Note

(1) AEC-Q101 qualified

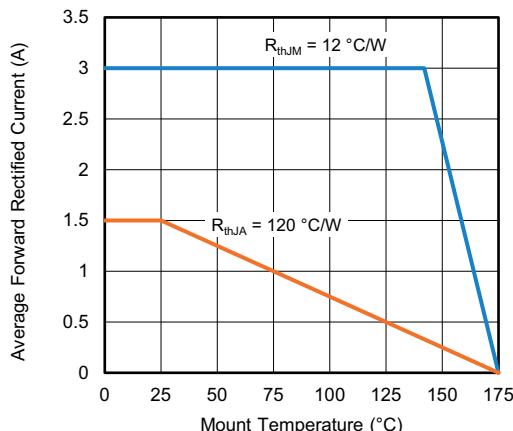
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

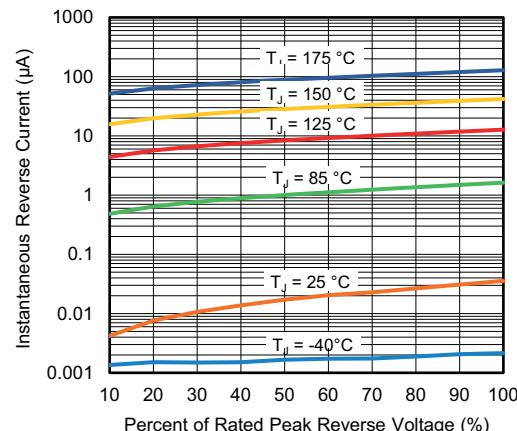


Fig. 4 - Typical Reverse Leakage Characteristics

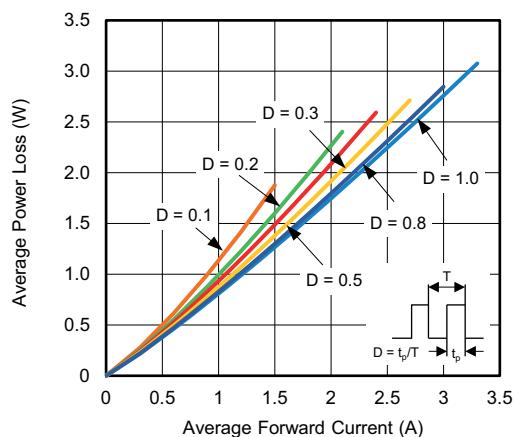


Fig. 2 - Forward Power Loss Characteristics

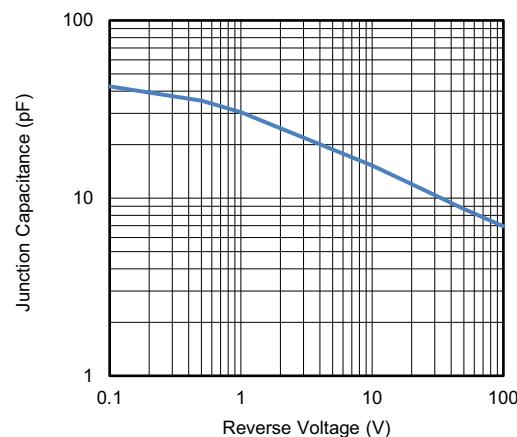


Fig. 5 - Typical Junction Capacitance

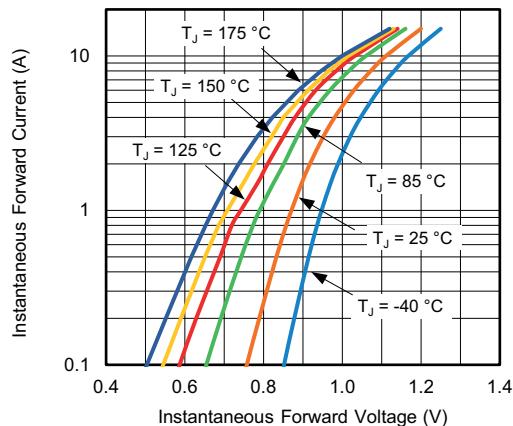


Fig. 3 - Typical Instantaneous Forward Characteristics

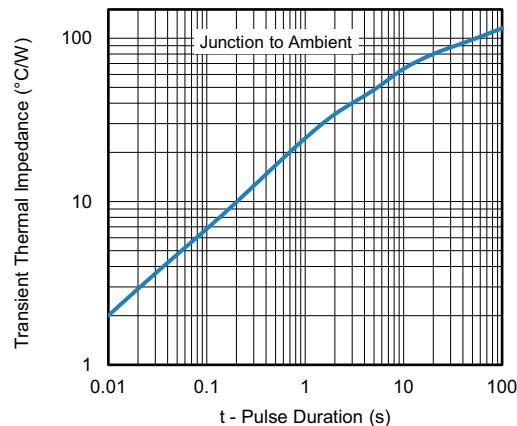
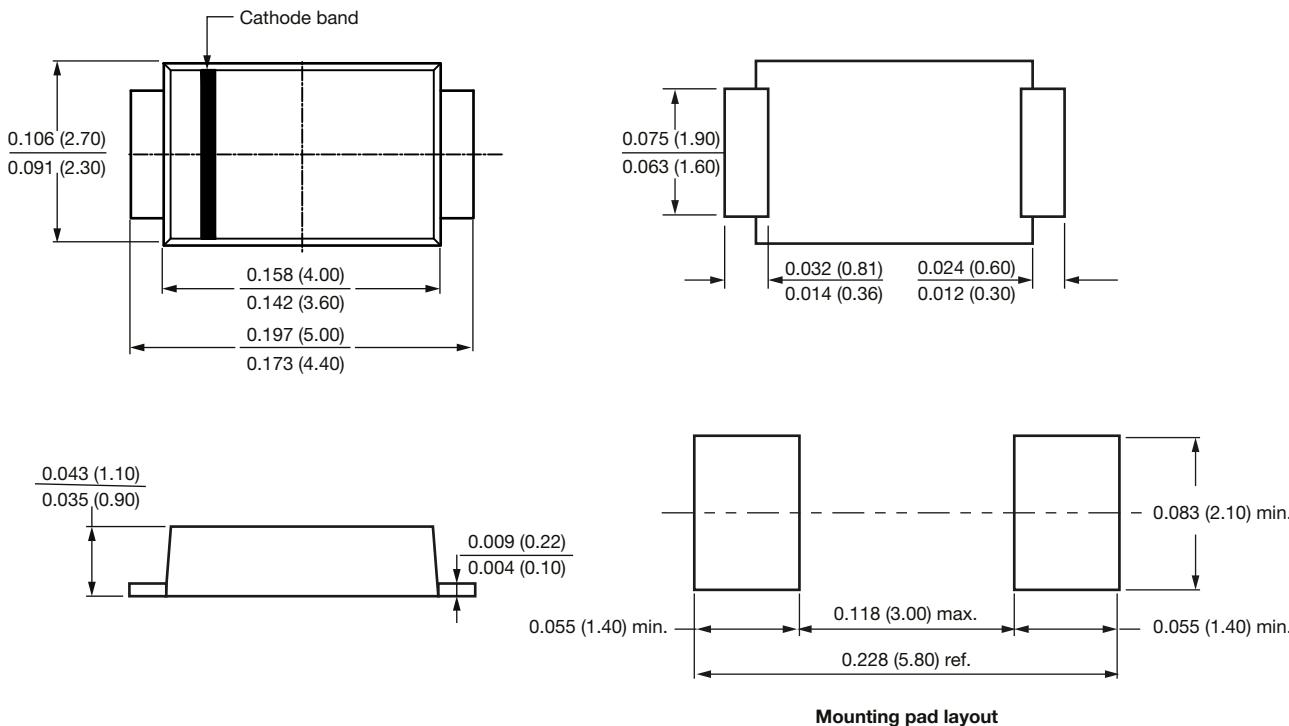


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SlimSMAW (DO-221AD)


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