High Current Density Surface Mount Schottky Rectifier

SMA (DO-214AC)

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	30 V, 40 V
I_{FSM}	75 A
V_F	0.38 V, 0.42 V
T_J max.	150 °C
Package	DO-214AC (SMA)
Diode variations	Single

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AC (SMA)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3_X - 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 JESD 22-B102
E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

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

PARAMETER	SYMBOL	SSA33L	SSA34	UNIT
Device marking code		33L	S34	V
Maximum repetitive peak reverse voltage	V_{RRM}	30	40	V
Maximum RMS voltage	V_{RMS}	21	28	V
Maximum DC blocking voltage	V_{DC}	30	40	V
Maximum average forward rectified current at T_L (fig. 1)	$I_{F(AV)}$	3.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	75		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/μs
Operating junction temperature range	T_J	-65 to +150		°C
Storage temperature range	T_{STG}	-65 to +150		°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**SSA33L**		**SSA34**		**UNIT**
				TYP.	**MAX.**	**TYP.**	**MAX.**	
Maximum instantaneous forward voltage [1]	3.0 A	T_J = 25 °C	V_F	0.43	0.45	0.46	0.49	V
		T_J = 125 °C		0.34	0.38	0.38	0.42	
Maximum reverse current at rated V_R [2]		T_J = 25 °C	I_R	-	0.5	-	0.2	mA
		T_J = 125 °C		20	35	17	30	

Notes

[1] Pulse test: 300 μs pulse width, 1 % duty cycle

[2] Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SSA33L**	**SSA34**	**UNIT**
Typical thermal resistance [1]	$R_{\theta JA}$	110		°C/W
	$R_{\theta JL}$	28		

Note

[1] Aluminum substrate mounted

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SSA33L-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SSA33L-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SSA33LHE3_A/H [1]	0.064	H	1800	7" diameter plastic tape and reel
SSA33LHE3_A/I [1]	0.064	I	7500	13" diameter plastic tape and reel

Note

[1] AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

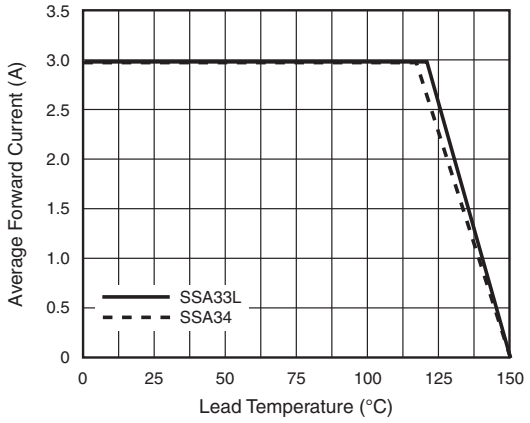

Fig. 1 - Forward Current Derating Curve

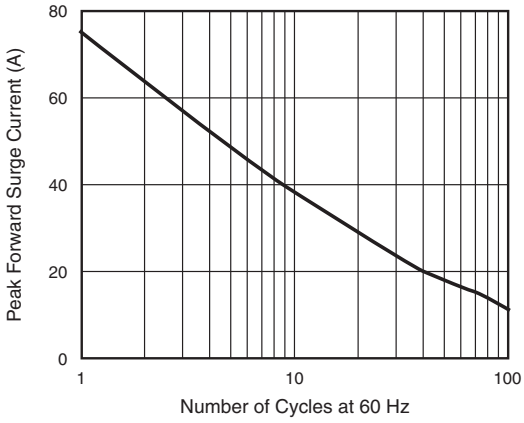

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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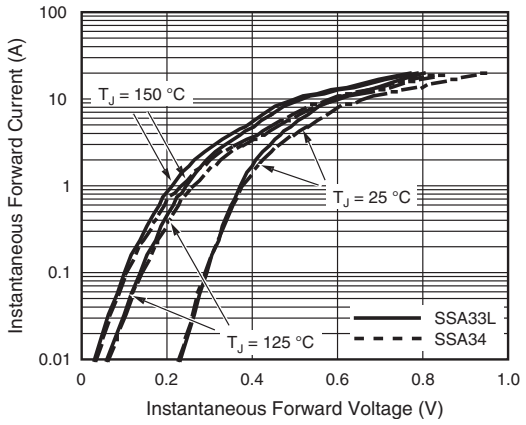


Fig. 3 - Typical Instantaneous Forward Characteristics

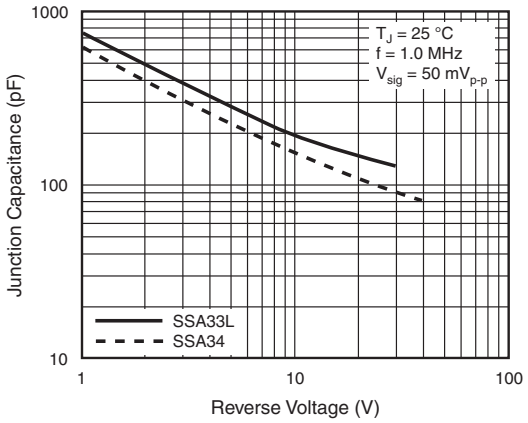


Fig. 5 - Typical Junction Capacitance

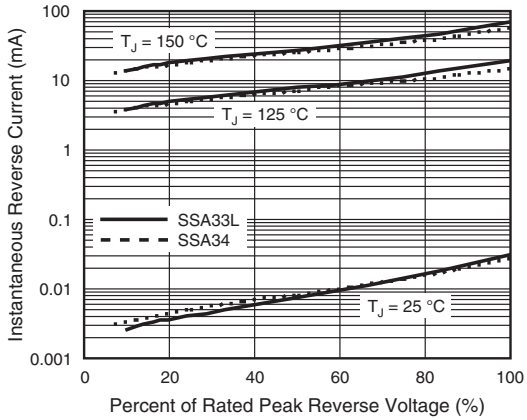
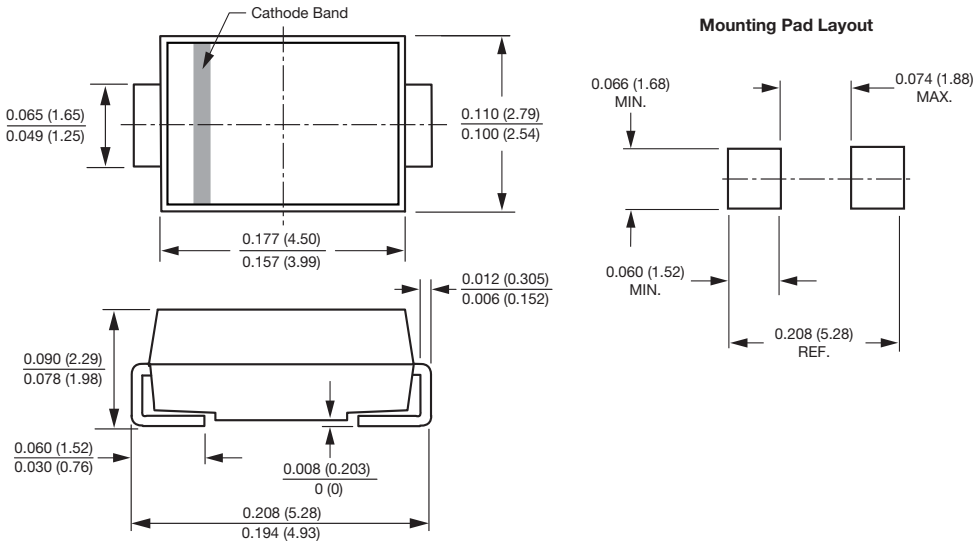


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



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