Vishay General Semiconductor

www.vishay.com Surface-Mount Schottky Barrier Rectifier



SMA (DO-214AC)

Cathode O Anode

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I _{F(AV)}	2.0 A				
V _{RRM}	20 V, 30 V, 40 V				
I _{FSM}	40 A				
V_F at I_F = 2.0 A	0.517 V				
T _J max.	150 °C				
Package	SMA (DO-214AC)				
Circuit configurations	Single				

FEATURES

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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMA (DO-214AC)

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 the cathode end

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS22S	SS23S	SS24S	UNIT
Device marking code		22S	23S	24S	
Maximum repetitive peak reverse voltage	V _{RRM}	20 30 40		40	V
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	2.0			А
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	40			A
Voltage rate of change (rated V_R)	dV/dt	10 000			V/µs
Operating junction and storage temperature range	$T_{J_1} T_{STG}$	-55 to +150			°C





COMPLIANT

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	I _F = 1 A	- T _J = 25 °C	V _F ⁽¹⁾	0.436	-	v	
	I _F = 2 A			0.517	0.55		
Reverse current	Rated V _R	T _J = 25 °C	I _R ⁽²⁾	13	200	μA	
		T _J = 100 °C		1.65	8	mA	
Typical junction capacitance	4.0 V, 1 MHz		CJ	130	-	pF	

Notes

SHAV

⁽¹⁾ Pulse test: 300 µs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	SYMBOL SS22S SS23S SS24S		UNIT		
Typical thermal resistance	R _{0JA} ⁽¹⁾	75			°C/W	
	R _{θJL} ⁽¹⁾	25				

Note

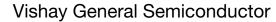
 $^{(1)}\,$ PCB mounted with 0.4" x 0.4" (10 mm x 10 mm) copper pad areas

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SS24S-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel			
SS24S-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel			
SS24SHE3_B/H ⁽¹⁾	0.064	Н	1800	7" diameter plastic tape and reel			
SS24SHE3_B/I (1)	0.064	I	7500	13" diameter plastic tape and reel			

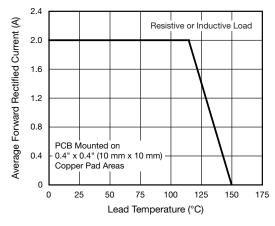
Note

(1) AEC-Q101 qualified





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



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Fig. 1 - Forward Current Derating Curve

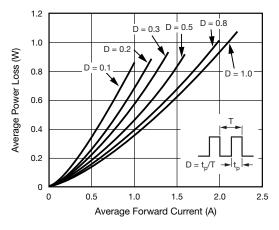


Fig. 2 - Forward Power Loss Characteristics

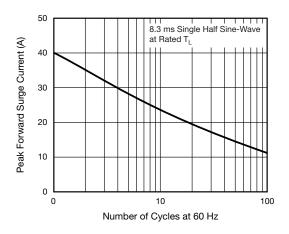


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

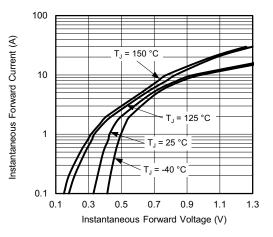


Fig. 4 - Typical Instantaneous Forward Characteristics

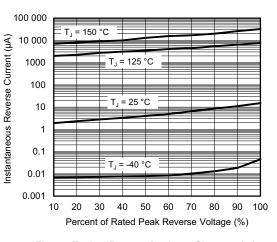


Fig. 5 - Typical Reverse Leakage Characteristics

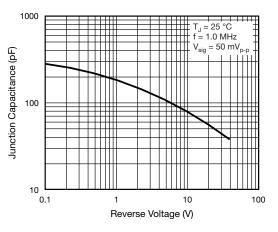


Fig. 6 - Typical Junction Capacitance

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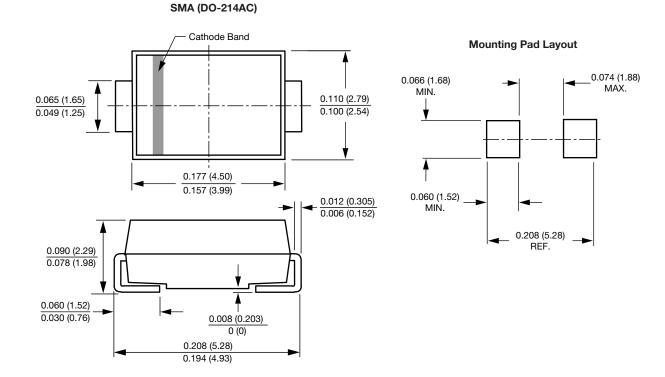
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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