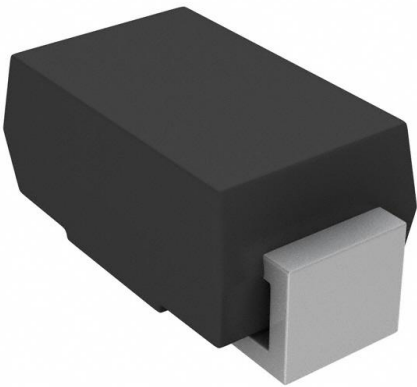


S1J-E3/5AT Datasheet

www.digi-electronics.com



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DiGi Electronics Part Number	S1J-E3/5AT-DG
Manufacturer	Vishay General Semiconductor - Diodes Division
Manufacturer Product Number	S1J-E3/5AT
Description	DIODE GEN PURP 600V 1A DO214AC
Detailed Description	Diode 600 V 1A Surface Mount DO-214AC (SMA)

This model S1J-E3/5AT is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

S1J-E3/5AT

Series:

-

Technology:

Standard

Current - Average Rectified (Io):

1A

Speed:

Standard Recovery >500ns, > 200mA (Io)

Current - Reverse Leakage @ Vr:

1 μ A @ 600 V

Mounting Type:

Surface Mount

Supplier Device Package:

DO-214AC (SMA)

Base Product Number:

S1J

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

600 V

Voltage - Forward (Vf) (Max) @ If:

1.1 V @ 1 A

Reverse Recovery Time (trr):

1.8 μ s

Capacitance @ Vr, F:

12pF @ 4V, 1MHz

Package / Case:

DO-214AC, SMA

Operating Temperature - Junction:

-55°C ~ 150°C

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99


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S1A, S1B, S1D, S1G, S1J, S1K, S1M

Vishay General Semiconductor

Surface-Mount Glass Passivated Rectifier



SMA (DO-214AC)

Cathode  Anode


Available

RoHS
COMPLIANT
HALOGEN
FREE

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated pellet chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	40 A, 30 A
E_{AS}	5 mJ
I_R	1.0 μ A, 5.0 μ A
V_F	1.1 V
T_J max.	175 °C
Package	SMA (DO-214AC)
Circuit configuration	Single

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive, and telecommunication.

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/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3_X - 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 JESD 22-B102

E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT
Device marking code		SA	SB	SD	SG	SJ	SK	SM	
Maximum recurrent peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40					30		A
Non-repetitive peak reverse avalanche energy at 25 °C, $I_{AS} = 1\text{ A}$, $L = 10\text{ mH}$	E_{AS}	5							mJ
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175							°C


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S1A, S1B, S1D, S1G, S1J, S1K, S1M

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ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT
Maximum instantaneous forward voltage	1.0 A	V_F	1.1							V
Maximum DC reverse current at rated DC blocking voltage	$T_J = 25\text{ }^\circ\text{C}$	I_R	1.0					5.0		μA
	$T_J = 125\text{ }^\circ\text{C}$		50							
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	1.8							μs
Typical junction capacitance	4.0 V, 1 MHz	C_J	12							pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	75					85		$^\circ\text{C/W}$	
	$R_{\theta JL}$	27					30			

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
S1J-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
S1J-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
S1JHE3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
S1JHE3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel
S1J-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
S1J-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
S1JHM3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
S1JHM3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

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

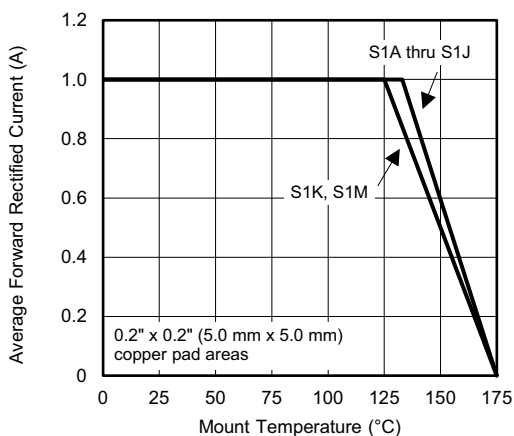


Fig. 1 - Forward Current Derating Curve

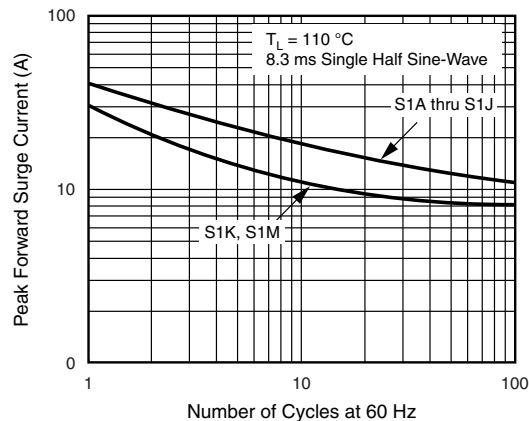


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



S1A, S1B, S1D, S1G, S1J, S1K, S1M

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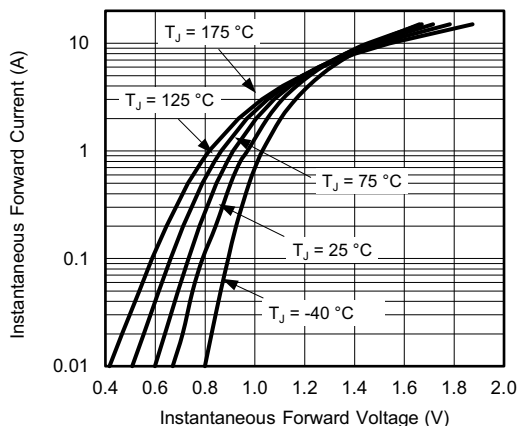


Fig. 3 - Typical Instantaneous Forward Characteristics

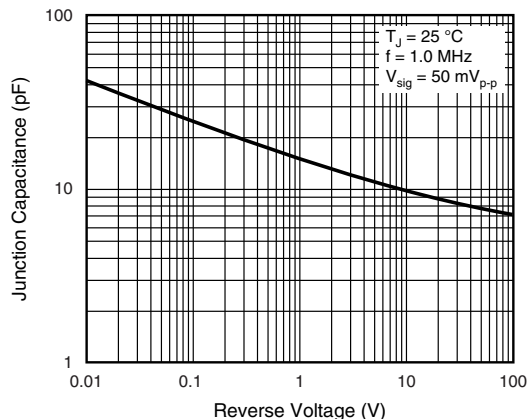


Fig. 5 - Typical Junction Capacitance

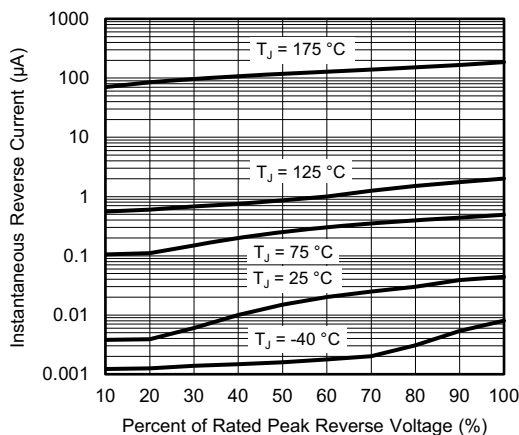


Fig. 4 - Typical Reverse Leakage Characteristics

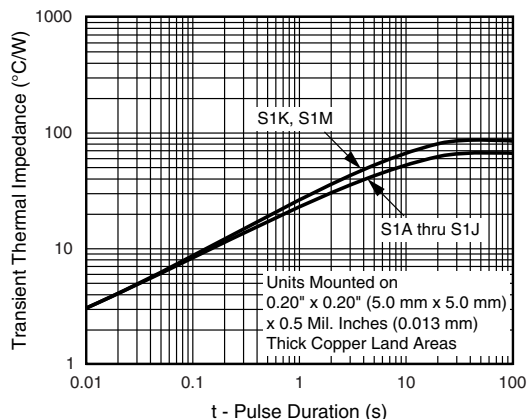
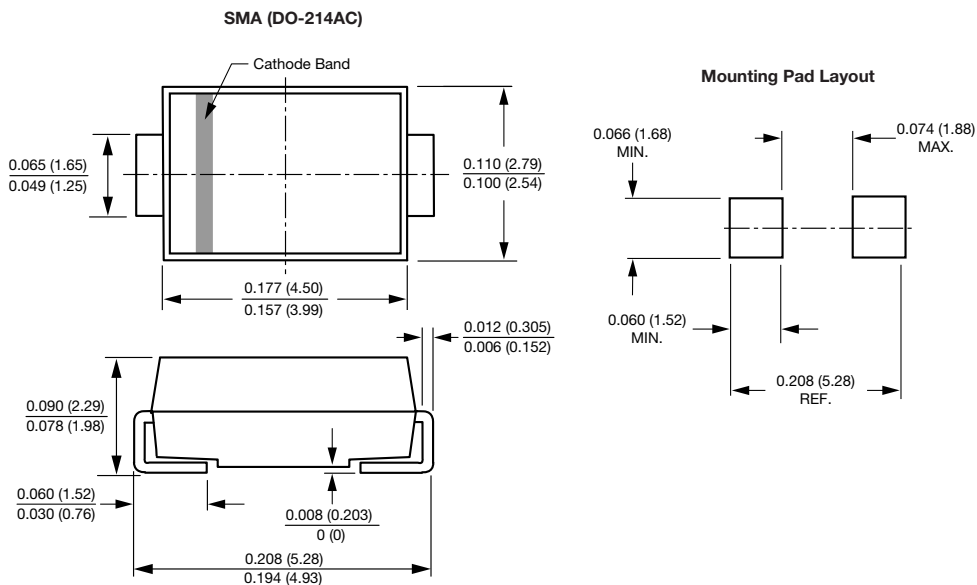


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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