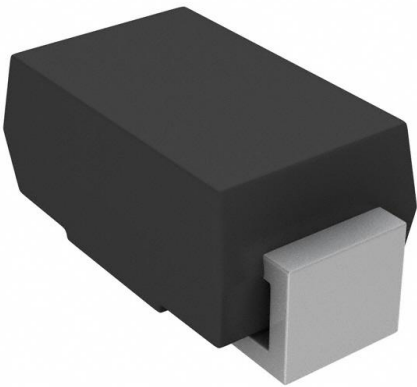


US1JHE3_A/I Datasheet

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<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	US1JHE3_A/I-DG
Manufacturer	Vishay General Semiconductor - Diodes Division
Manufacturer Product Number	US1JHE3_A/I
Description	DIODE GEN PURP 600V 1A DO214AC
Detailed Description	Diode 600 V 1A Surface Mount DO-214AC (SMA)

This model US1JHE3_A/I is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

US1JHE3_A/I

Series:

-

Technology:

Standard

Current - Average Rectified (Io):

1A

Speed:

Fast Recovery =< 500ns, > 200mA (Io)

Current - Reverse Leakage @ Vr:

10 μ A @ 600 V

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

DO-214AC (SMA)

Base Product Number:

US1J

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

600 V

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

1.7 V @ 1 A

Reverse Recovery Time (trr):

75 ns

Capacitance @ Vr, F:

10pF @ 4V, 1MHz

Qualification:

AEC-Q101

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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US1A, US1B, US1D, US1G, US1J, US1K, US1M

Vishay General Semiconductor

Surface-Mount Ultrafast Rectifier



SMA (DO-214AC)

Cathode  Anode

LINKS TO ADDITIONAL RESOURCES



Design Tools



Related Documents



3D Models

Models



Application Notes



Marking

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}	30 A
t_{rr}	50 ns, 75 ns
V_F at I_F	1.0 V, 1.7 V
T_J max.	150 °C
Package	SMA (DO-214AC)
Circuit configurations	Single

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated pallet chip junction
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- 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


RoHS
 COMPLIANT
 HALOGEN
FREE
 Available

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, 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	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT
Device marking code		UA	UB	UD	UG	UJ	UK	UM	
Maximum repetitive 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 at $T_L = 110\text{ °C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Operating and storage temperature range	T_J, T_{STG}	-55 to +150							°C


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US1A, US1B, US1D, US1G, US1J, US1K, US1M

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ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT
Maximum instantaneous forward voltage	1.0 A	$V_F^{(1)}$	1.0			1.7				V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	I_R	10							μA
	$T_A = 100\text{ }^\circ\text{C}$		50							
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	50			75				ns
Typical junction capacitance	4.0 V, 1 MHz	C_J	15			10				pF

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT	
Maximum thermal resistance	$R_{\theta JA}^{(1)}$				75					$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$				27					

Note

(1) PCB mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad area

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
US1J-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
US1J-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
US1JHE3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
US1JHE3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel
US1J-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
US1J-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
US1JHM3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
US1JHM3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified



US1A, US1B, US1D, US1G, US1J, US1K, US1M

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

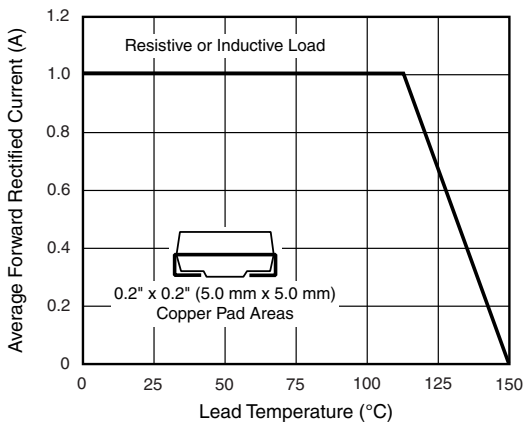


Fig. 1 - Forward Current Derating Curve

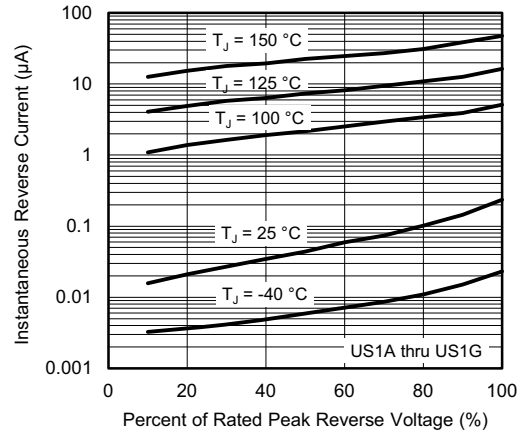


Fig. 4 - Typical Reverse Leakage Characteristics

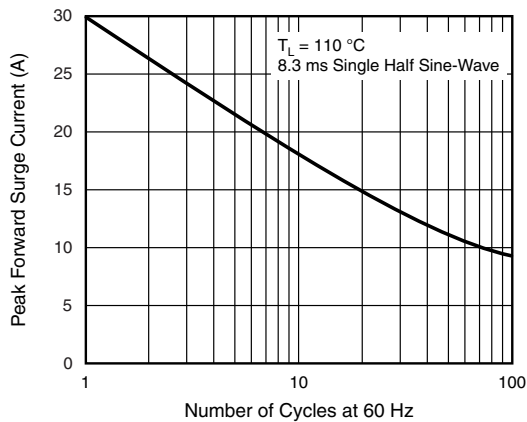


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

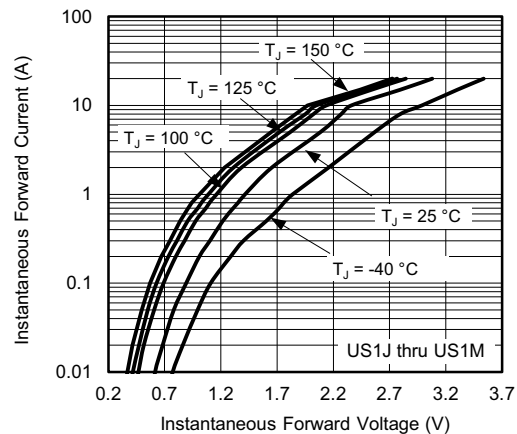


Fig. 5 - Typical Instantaneous Forward Characteristics

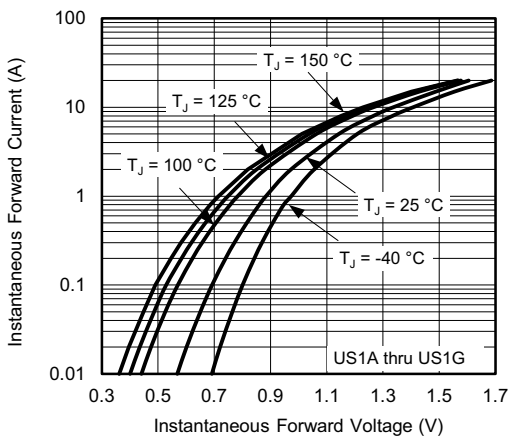


Fig. 3 - Typical Instantaneous Forward Characteristics

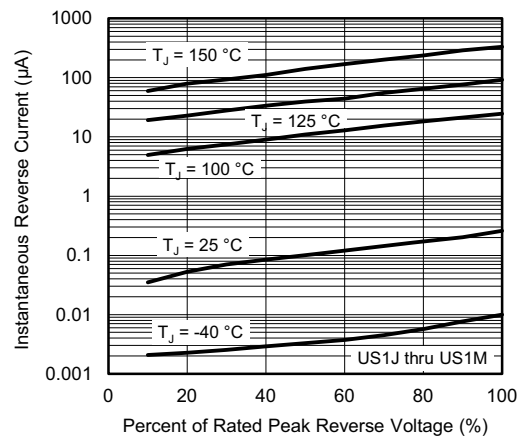


Fig. 6 - Typical Reverse Leakage Characteristics



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US1A, US1B, US1D, US1G, US1J, US1K, US1M

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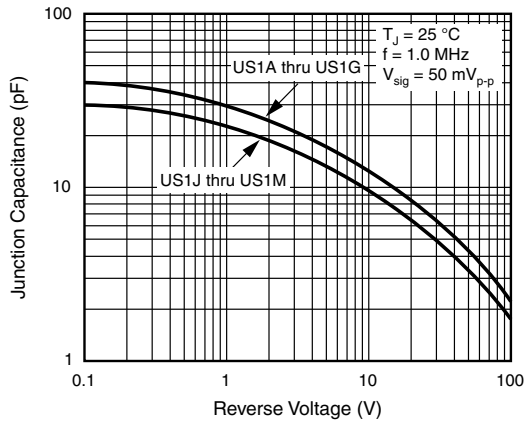


Fig. 7 - Typical Junction Capacitance

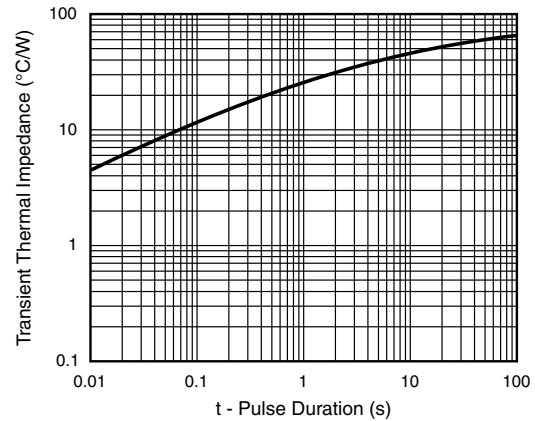
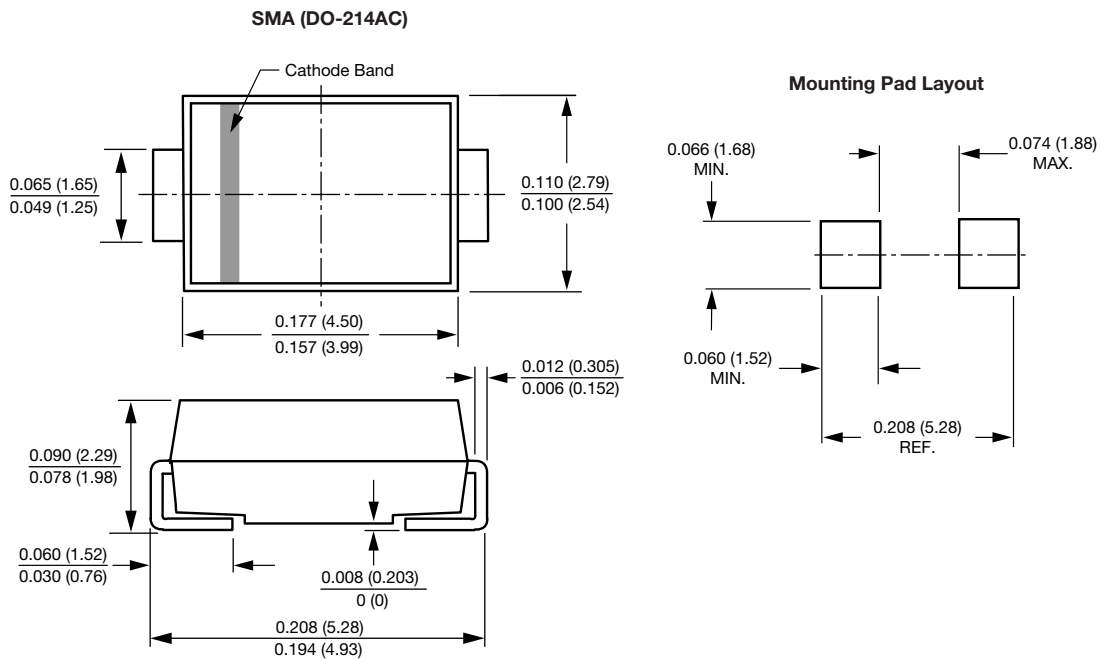


Fig. 8 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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