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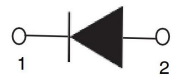
Super Fast Surface Mount Rectifiers US2AA-US2MA

Features

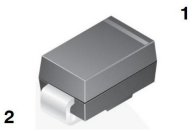
- Glass Passivated Chip Junction
- High Surge Capacity
- Low Forward Voltage Drop
- Fast Switching with Reverse Recovery Time: 50~75 ns Maximum
- UL Flammability 94 V – 0 Classification
- MSL 1 per J–STD–020
- RoHS Compliant / Green Molding Compound
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC–Q101 Qualified and PPAP Capable*

Table 1. ORDERING INFORMATION

Part Number	Top Mark	Package	Packing Method
US2AA, NRVUS2AA*	US2AA	DO–214AC (SMA)	Tape and Reel
US2BA, NRVUS2BA*	US2BA	DO–214AC (SMA)	Tape and Reel
US2DA, NRVUS2DA*	US2DA	DO–214AC (SMA)	Tape and Reel
US2FA, NRVUS2FA*	US2FA	DO–214AC (SMA)	Tape and Reel
US2GA, NRVUS2GA*	US2GA	DO–214AC (SMA)	Tape and Reel
US2JA, NRVUS2JA*	US2JA	DO–214AC (SMA)	Tape and Reel
US2KA, NRVUS2KA*	US2KA	DO–214AC (SMA)	Tape and Reel
US2MA, NRVUS2MA*	US2MA	DO–214AC (SMA)	Tape and Reel



Cathode Anode



SMA/DO–214AC

COLOR BAND DENOTES CATHODE

MARKING DIAGRAM



$Y	= OM SENI&
Z	= Assembly Plant Code
&3	= Data Code (Year & Week)
US2XA	= Specific Device Code
X	= A/B/D/F/G/J/K/M

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Table 2. ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	US2 AA	US2 BA	US2 DA	US2 FA	US2 GA	US2 JA	US2 KA	US2 MA	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	600	800	1000	V
V_{RMS}	RMS Reverse Voltage	35	70	140	210	280	420	560	700	V
V_{DC}	DC Blocking Voltage	50	100	200	300	400	600	800	1000	V
$I_{F(AV)}$	Average Forward Rectified Current	1.5								A
I_{FSM}	Peak Forward Surge Current, 8.3 ms Single Half−Sine Wave, Superimposed on Rated Load	50								A
T_J	Operating Junction Temperature Range	−55 to +150								°C
T_{STG}	Storage Temperature Range	−55 to +150								°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Table 3. THERMAL CHARACTERISTICS (NOTE 1) (Values are at T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Typical Thermal Resistance, Junction−to−Ambient	189	°C/W
Ψ_{JL}	Typical Thermal Characteristics, Junction−to−Lead (with Reference to Cathode Pin)	31	°C/W

1. Device mounted at minimum pad.

Table 4. ELECTRICAL CHARACTERISTICS (Values are at T_A = 25°C unless otherwise noted)

Symbol	Parameter		Value								Unit
			US2 AA	US2 BA	US2 DA	US2 FA	US2 GA	US2 JA	US2 KA	US2 MA	
V_F	Maximum Instantaneous Forward Voltage (Note2) at Rated $I_{F(AV)}$		1.0				1.3	1.7			V
I_R	Maximum Reverse Current at Rated V_R	TJ = 25°C	5								μA
		TJ = 125°C	100								
t_{rr}	Maximum Reverse Recovery Time (Note 3)		50				75				ns
C_J	Typical Junction Capacitance (Note 4)		50				30				pF

2. Pulse test with PW = 300 μs, 1% duty cycle
3. Reverse recovery test conditions: I_F = 0.5 A, I_R = 1.0 A, I_{RR} = 0.25 A
4. Measured at 1 Mhz and applied reverse voltage of 4.0 V D.C.

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TYPICAL PERFORMANCE CHARACTERISTICS

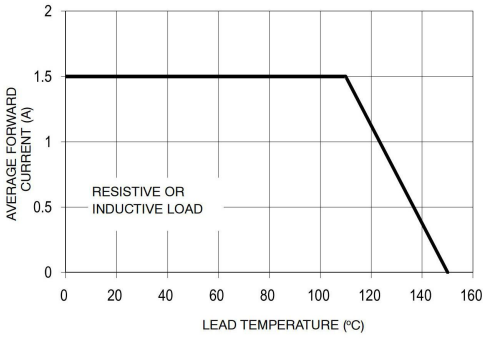


Figure 1. Forward Current Derating Curve

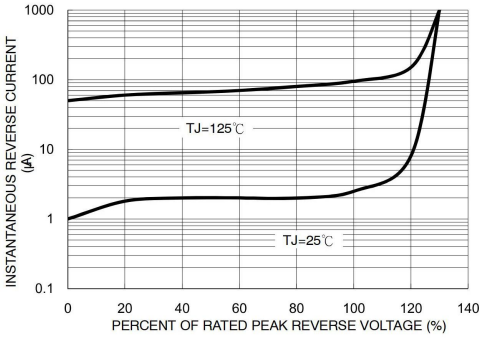


Figure 2. Typical Reverse Characteristics

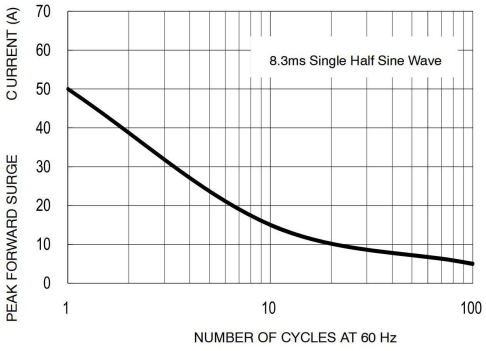


Figure 3. Maximum Non−Repetitive Forward Surge Current

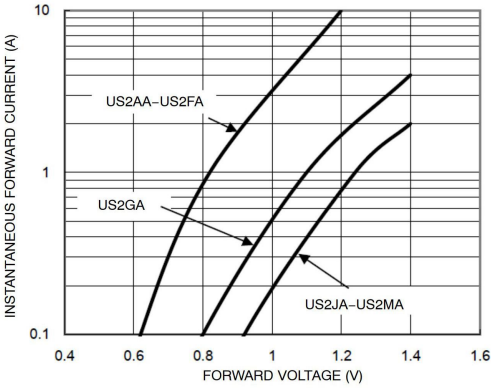


Figure 4. Typical Forward Characteristics

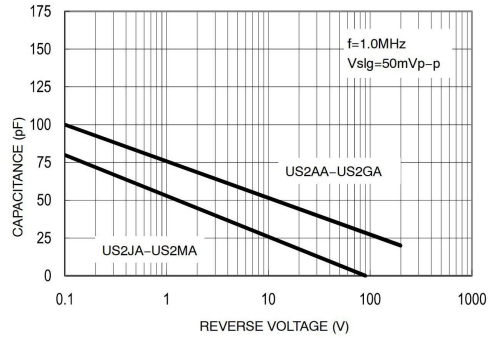


Figure 5. Typical Forward Characteristics

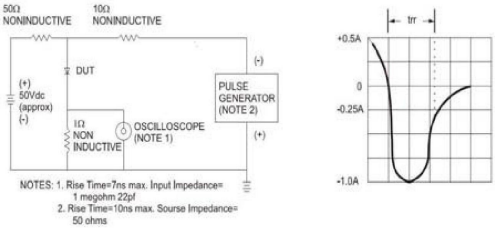


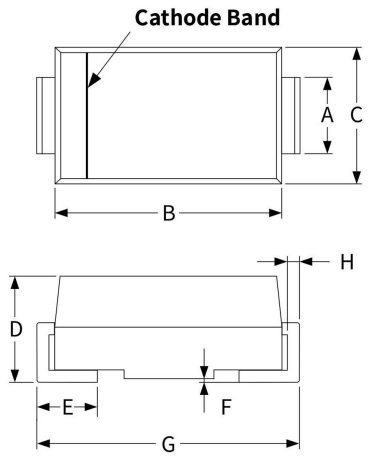
Figure 6. Typical Forward Characteristics

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Ordering Information

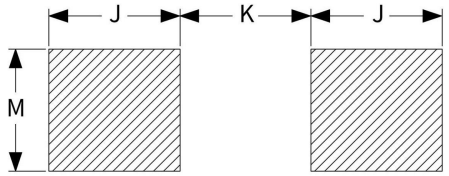
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMA	R2	0.07	5000	10000	50000	13''
SMA	R3	0.07	7500	15000	75000	13''

Package Outline Dimensions (SMA/DO-214AC)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.25	1.65	0.049	0.065
B	3.95	4.65	0.156	0.183
C	2.35	2.85	0.093	0.112
D	1.98	2.41	0.078	0.095
E	0.76	1.52	0.030	0.060
F	-	0.203	-	0.008
G	4.70	5.30	0.185	0.209
H	0.15	0.31	0.006	0.012

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	1.70	-	0.067	-
J	2.10	-	0.082	-
K	-	2.30	-	0.090