Technical Data
Data Sheet N2018, Rev. A

US1A THRU US1K
SURFACE MOUNT ULTRA FAST RECTIFIER

SMA

Features

- **Ideally Suited for Automatic Assembly**
- **Low Forward Overload Drop, High Efficiency**
- **Low Power Loss**
- **Super-Fast Recovery Time**
- **Plastic Material has UL Classification 94V-O**
- **This is a Pb − Free Device**
- **All SMC parts are traceable to the wafer lot**
- **Additional testing can be offered upon request**

Circuit Diagram

Mechanical Data

- **Case: Low Profile Molded Plastic**
- **Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026**
- **Polarity: Cathode Band or Cathode Notch**
- **Weight: 0.06 grams(approx)**

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Characteristic	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	Units
Peak Repetitive Reverse Voltage	V_{RRM}	50	100	200	400	600	800	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	
Average Rectified Output Current @T_L =100°C	Io	1.0						A
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	35						A
Rating for fusing (t<8.3ms)	I^2t	5.08						A^2s
Forward voltage* @IF =1.0A	V_F	1.0			1.3	1.7		V
Peak Reverse Current * @T_A = 25°C At Rated DC Blocking Voltage @T_A = 125°C	I_R	5 100						μA
Typical junction capacitance (Note 2)	C_J	6						pF
Reverse Recovery Time (Note 1)	Trr	50				75		ns
Typical thermal resistance (Note 3)	$R_{\theta JA}$	112						°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150						°C

* Pulse width < 300 μs, duty cycle < 2%

Note: 1.Reverse Recovery Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.
2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C
3. Mounted on an FR4 PCB, single-sided copper, mini pad.

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Ratings and Characteristics Curves

FIG.1MAXIMUM AVERAGE FORWARD CURRENT DERATING

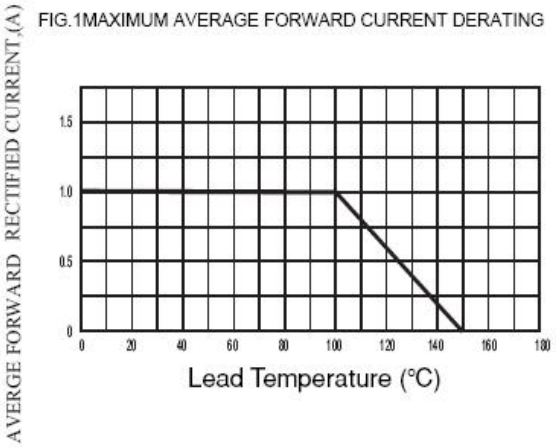


FIG.2TYPICAL FORWARD CHARACTERISTICS

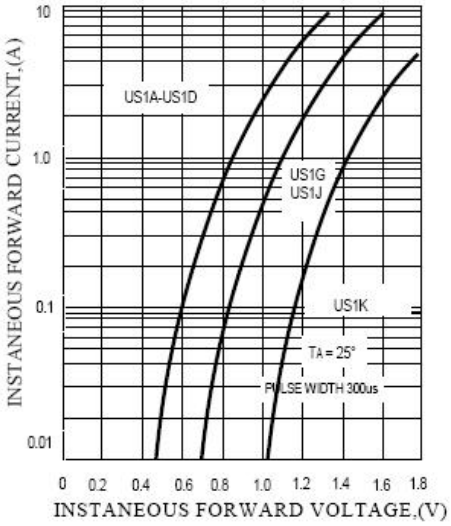


FIG.3MAXIMUM NON-REPEITIVE SURGE CURRENT

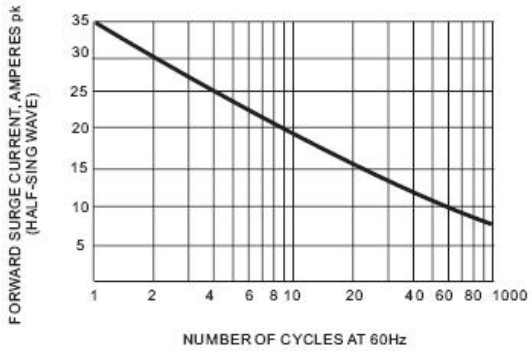


FIG.4TYPICAL JUNCTION CAPACITANCE

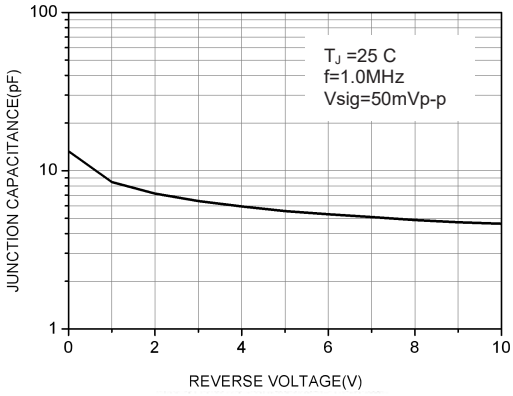
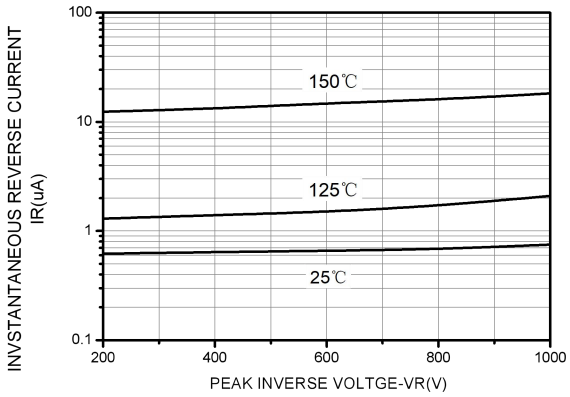
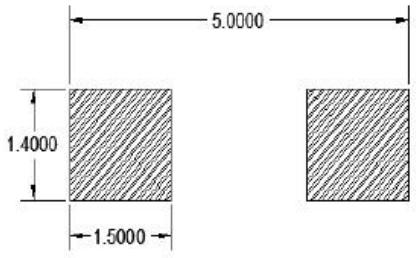


FIG.5TYPICAL REVERSE CHRACTERISTICS



SMA PAD LAYOUT



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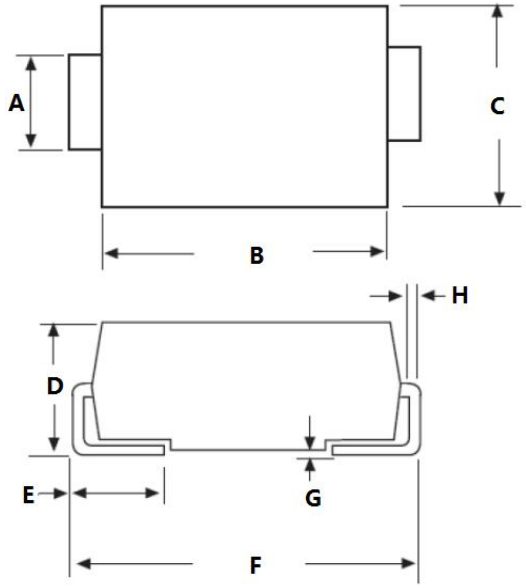
Mechanical Dimensions SMA (Inches/Millimeters)



Item	mechanical size (mm)			
	MIN	MAX	MIN	MAX
A	1.25	1.65	0.049	0.065
B	3.95	4.6	0.156	0.181
C	2.25	2.95	0.089	0.116
D	1.95	2.9	0.077	0.114
E	0.75	1.6	0.03	0.063
F	4.8	5.6	0.189	0.22
G	0.05	0.2	0.002	0.008
H	0.15	0.41	0.006	0.016

Ordering Information

Device	Package	Shipping
US1A THRU US1K	SMA (Pb-Free)	5000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

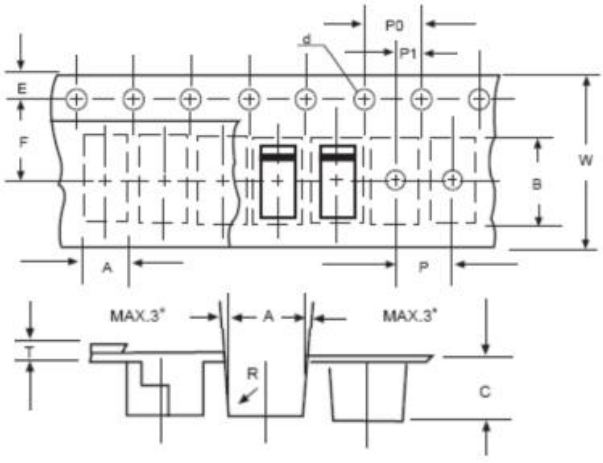
Marking Diagram

Where XXXXX is YYWWL

US = Device Type
1 = Forward Current (1A)
A = Reverse Voltage (50V)
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification SMA



SYMBOL	Millimeters	
	Min.	Max.
A	2.97	3.17
B	5.70	5.90
C	2.32	2.52
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
T	0.25	0.35
W	11.80	12.20

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