US1x Series

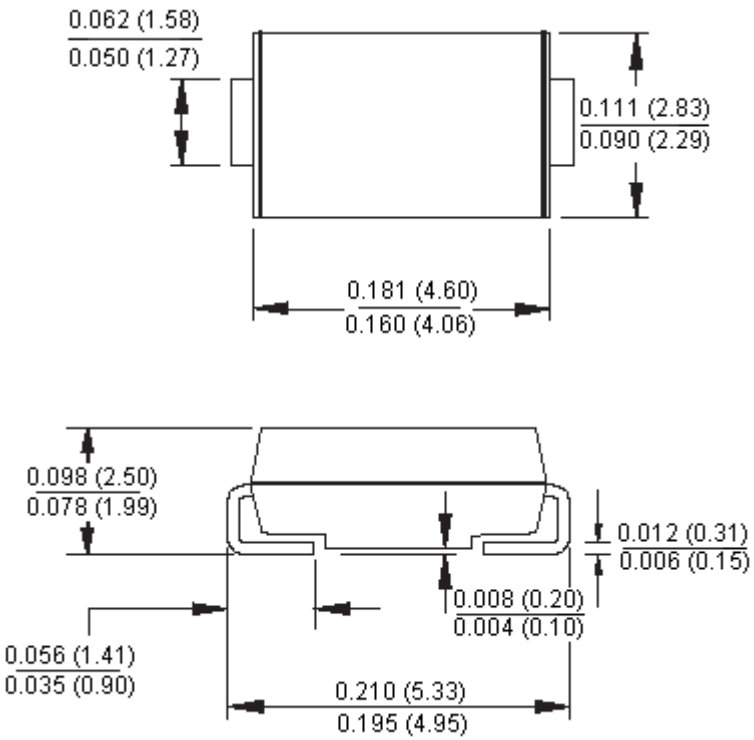


RoHS Compliant

Features:

- Glass passivated junction chip.
- For surface mounted application.
- Low profile package.
- Built-in strain relief.
- Ideal for automated placement.
- Easy pick and place.
- Ultrafast recovery time for high efficiency.
- Low forward voltage, low power loss.
- High temperature soldering guaranteed: 260oC/10 seconds on terminals.
- Plastic material.

SMB/DO-214AC



Dimensions : Inches (Millimetres)

Mechanical Data:

Cases	: Moulded plastic.
Terminals	: Solder plated solderable per MIL-STD-750, Method 2026.
Polarity	: Indicated by cathode band.
Weight	: 0.064 gram.

Maximum Ratings and Electrical Characteristics

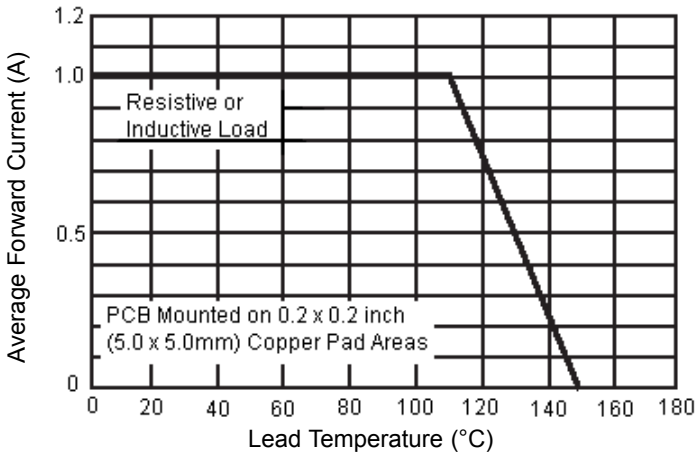
Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Type Number	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	US1M	Units
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	
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	00	800	1000	
Maximum Average Forward Rectified Current at T_L = 110°C	$I_{(AV)}$	1.0							A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30							
Maximum Instantaneous Forward Voltage at 1.0A	V_F	1.0				1.7			V
Maximum DC Reverse Current at T_A = 25°C at Rated DC Blocking Voltage at T_A = 125°C	I_R	5.0 150							µA µA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	50				75			pF
Typical Junction Capacitance (Note 2)	C_j	15				10			°C/W
Maximum Thermal Resistance (Note 3)	$R_{\theta JL}$ $R_{\theta JA}$	75 27							°C
Operating Temperature Range	T_J	-55 to +150							
Storage Temperature Range	T_{STG}	-55 to +150							

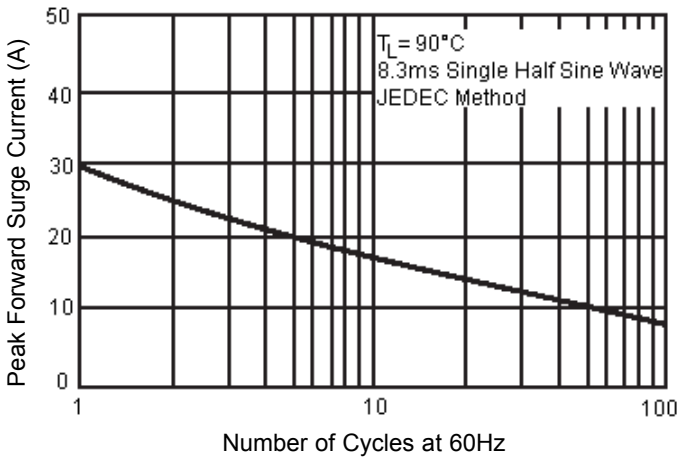
Notes: 1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
2. Measured at 1MHz and Applied V_R = 4.0Volts.
3. PCB Mounted on 0.2 x 0.2 inches (5.0 x 5.0mm) Copper Pad Area.

Ratings and Characteristic Curves (US1A, US1B, US1D, US1G, US1J, US1K, US1M)

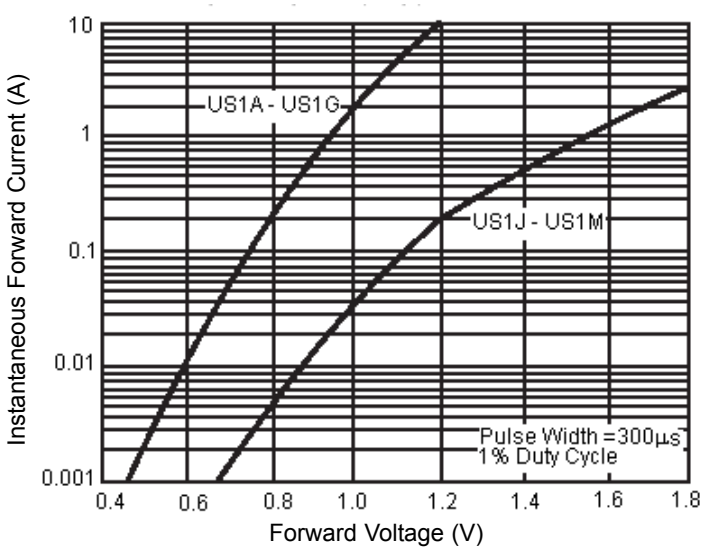
Maximum Forward Current Derating Curve



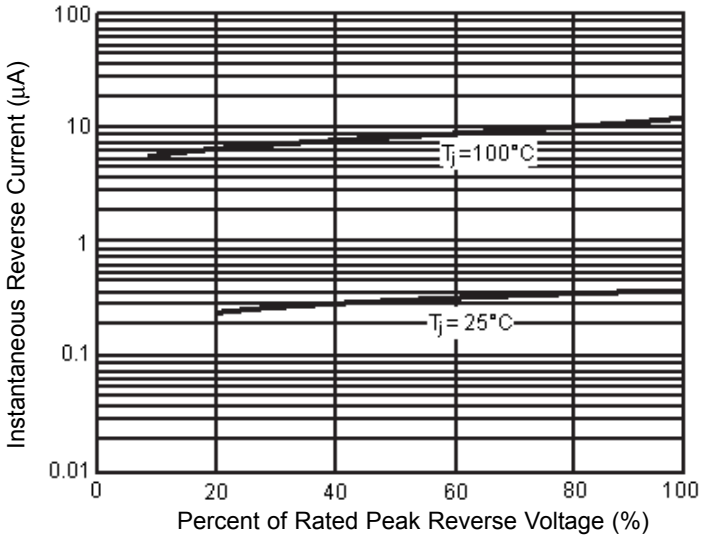
Maximum Non-Repetitive Forward Surge Current



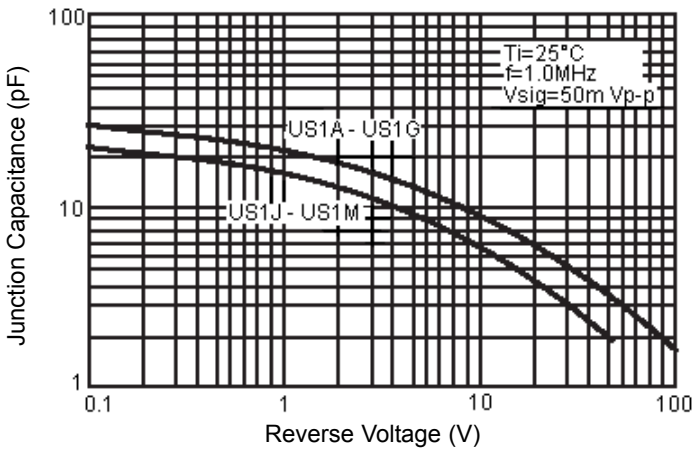
Typical Instantaneous Forward Characteristics



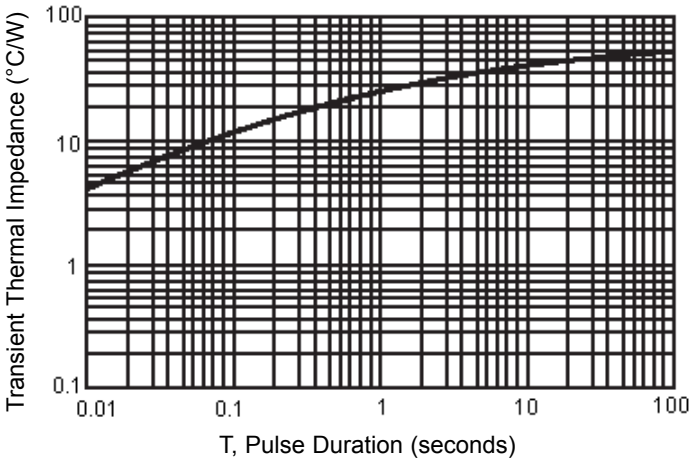
Typical Reverse Characteristics



Typical Junction Capacitance



Typical Transient Thermal



Part Number Table

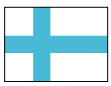
Description	Part Number
Diode, Ultra-Fast, 1A, 50V	US1A
Diode, Ultra-Fast, 1A, 100V	US1B
Diode, Ultra-Fast, 1A, 200V	US1D
Diode, Ultra-Fast, 1A, 400V	US1G
Diode, Ultra-Fast, 1A, 600V	US1J
Diode, Ultra-Fast, 1A, 800V	US1K
Diode, Ultra-Fast, 1A, 1000V	US1M

Notes:

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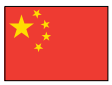
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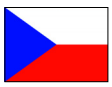
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