



# US1AAFC ~ US1MAFC Series

## Surface Mount Ultra Fast Recovery Rectifier

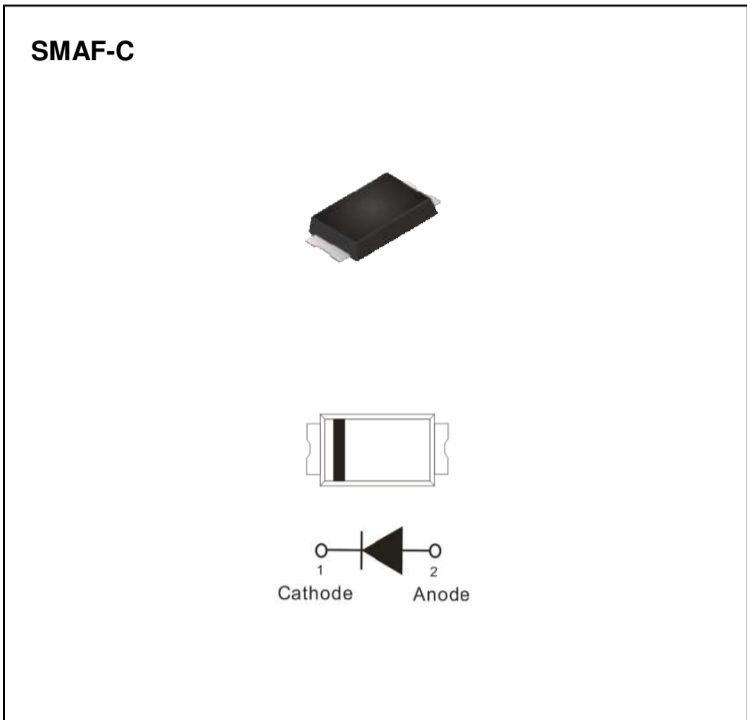
**Voltage** 50~1000 V **Current** 1 A

### Features

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : Molded plastic, SMAF-C
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0012 ounces, 0.034 grams



## Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

PARAMETER	SYMBOL	US1AAFC	US1BAFC	US1DAFC	US1GAFC	US1JAFc	US1KAFC	US1MAFC	UNITS	
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V	
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V	
Maximum DC Blocking Voltage	V <sub>R</sub>	50	100	200	400	600	800	1000	V	
Maximum Average Forward Rectified Current	I <sub>F(AV)</sub>	1							A	
Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load	I <sub>FSM</sub>	30							A	
Forward Voltage at 1A	V <sub>F</sub>	1		1.4		1.7			V	
Reverse Current	I <sub>R</sub>	1							uA	
Typical Junction Capacitance Measured at 1 MHz And Applied V <sub>R</sub> = 4V	C <sub>J</sub>	20		15		10			pF	
Reverse Recovery Time <sup>(Note 1)</sup>	T <sub>RR</sub>	50				100				ns
Typical Thermal Resistance	<sup>(Note 2)</sup> R <sub>θJL</sub>	22							°C/W	
	<sup>(Note 3)</sup> R <sub>θJA</sub>	150								
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150							°C	
Storage Temperature Range	T <sub>STG</sub>	-55 to +150							°C	

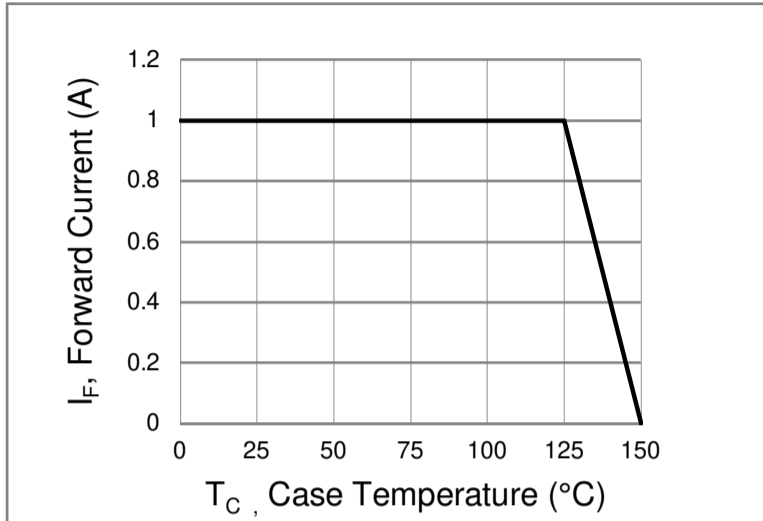
NOTES:

1. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1A, Recover to 0.25A
2. Mounted on a FR4 PCB, single-sided copper, with 10cm x 10cm copper pad area
3. Mounted on a FR4 PCB, single-sided copper, standard footprint

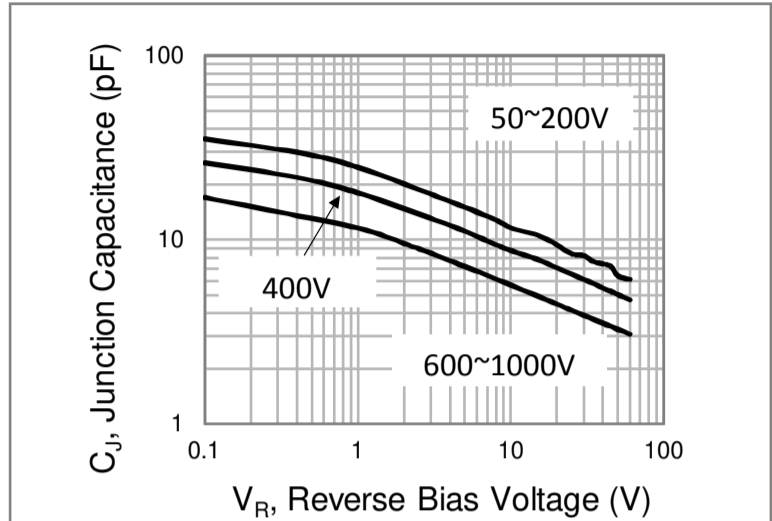


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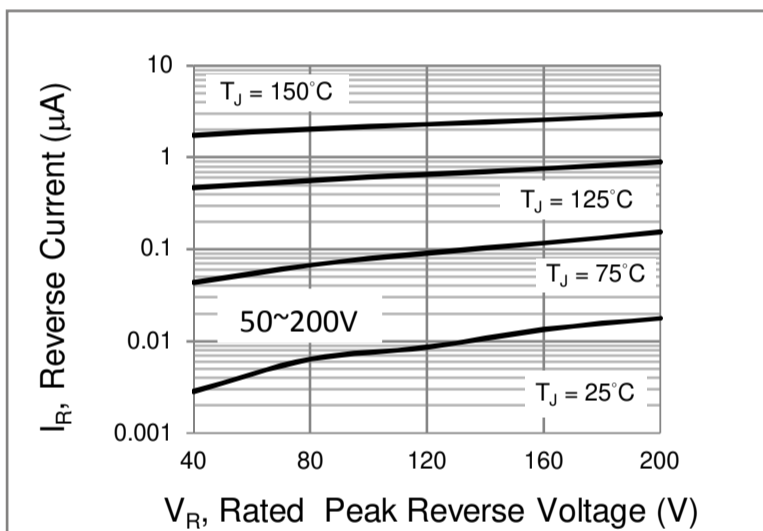
## TYPICAL CHARACTERISTIC CURVES



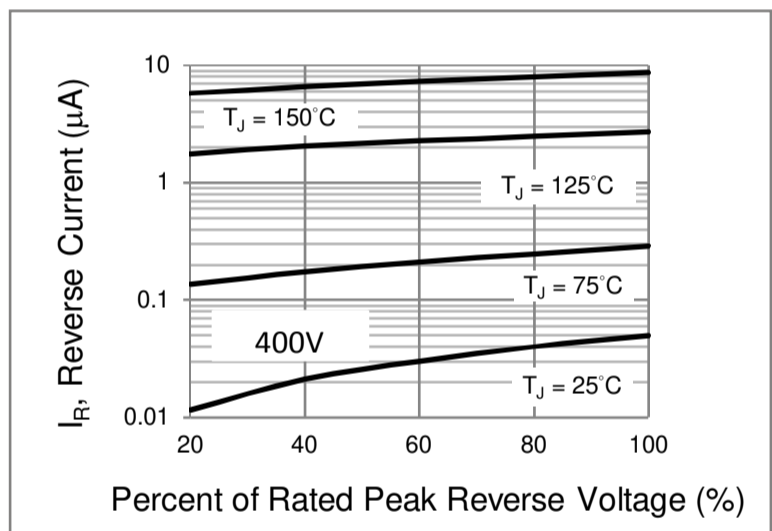
**Fig.1 Forward Current Derating Curve**



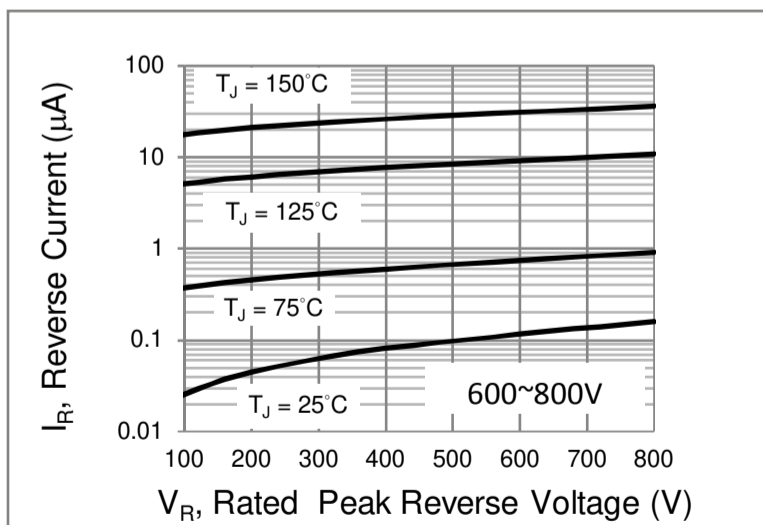
**Fig.2 Typical Junction Capacitance**



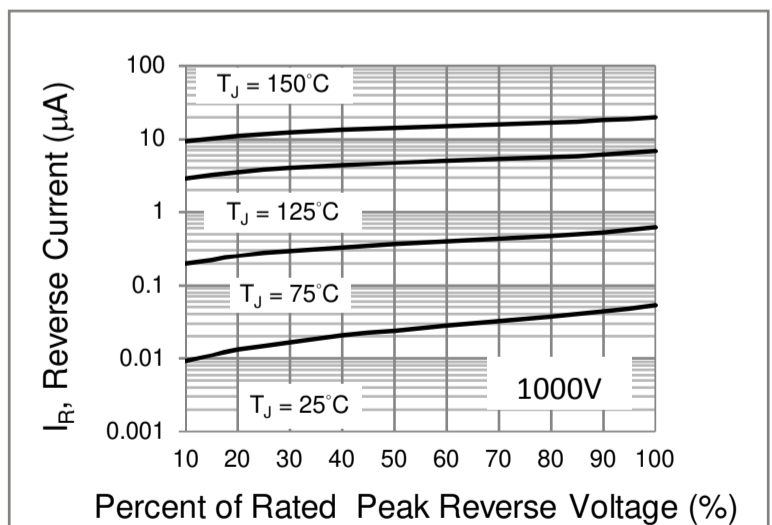
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Reverse Characteristics**



**Fig.5 Typical Reverse Characteristics**

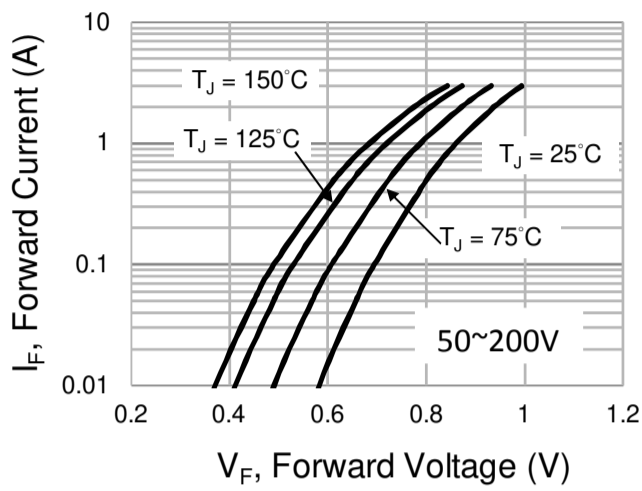


**Fig.6 Typical Reverse Characteristics**

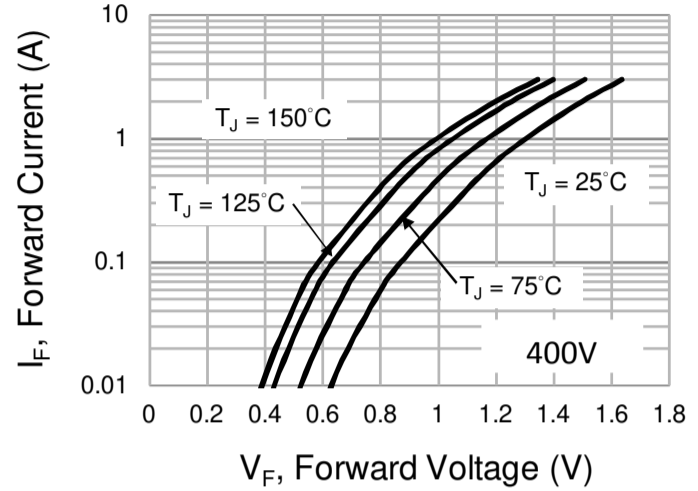


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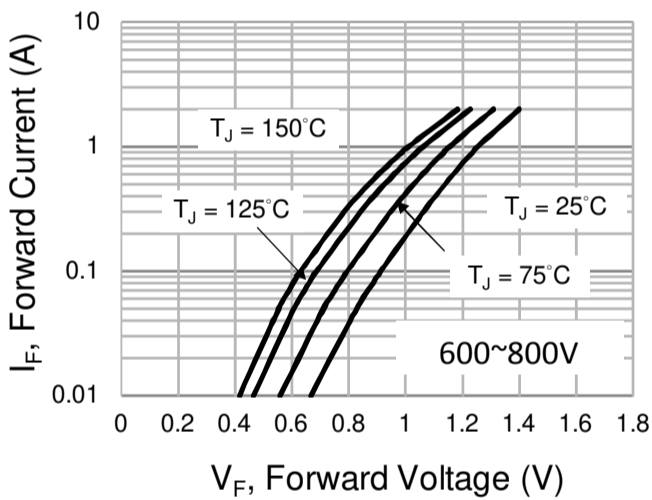
## TYPICAL CHARACTERISTIC CURVES



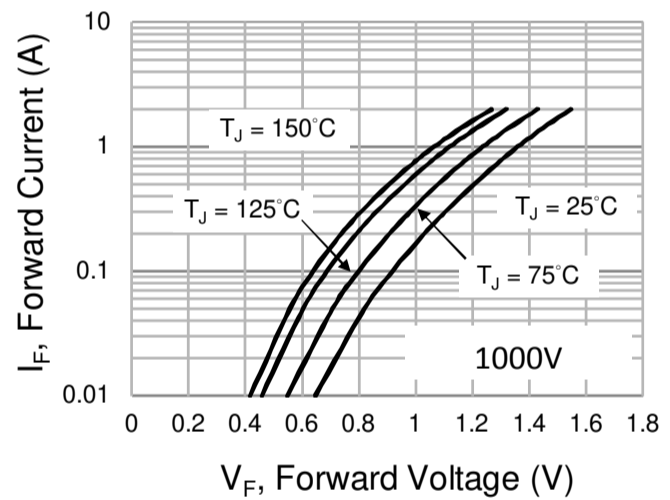
**Fig.7 Typical Forward Characteristics**



**Fig.8 Typical Forward Characteristics**



**Fig.9 Typical Forward Characteristics**



**Fig.10 Typical Forward Characteristics**

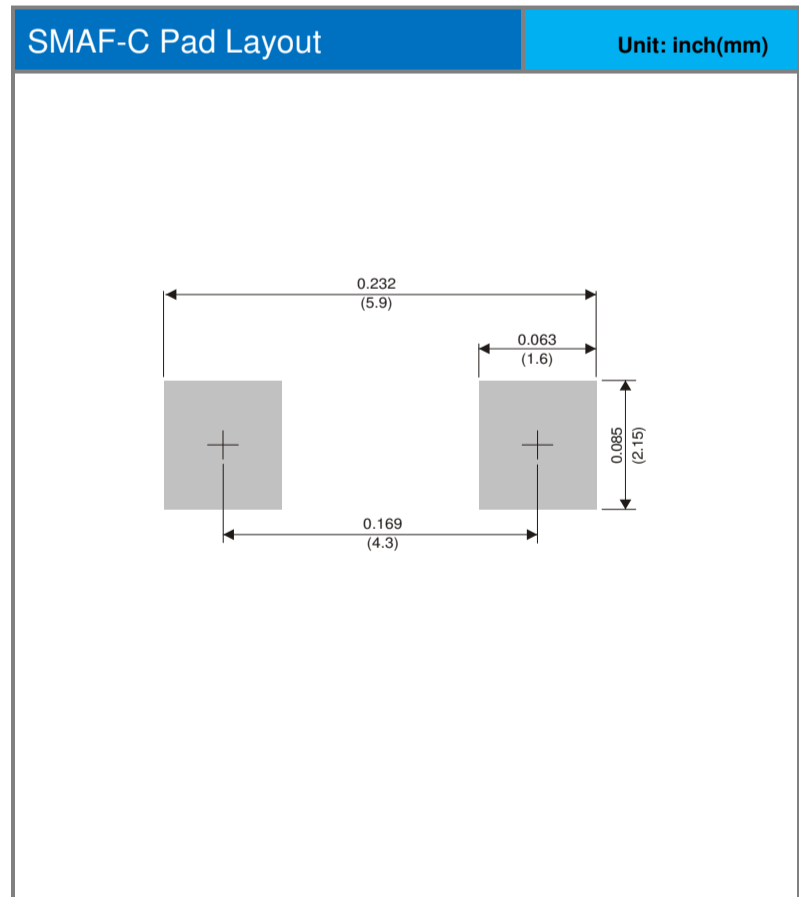
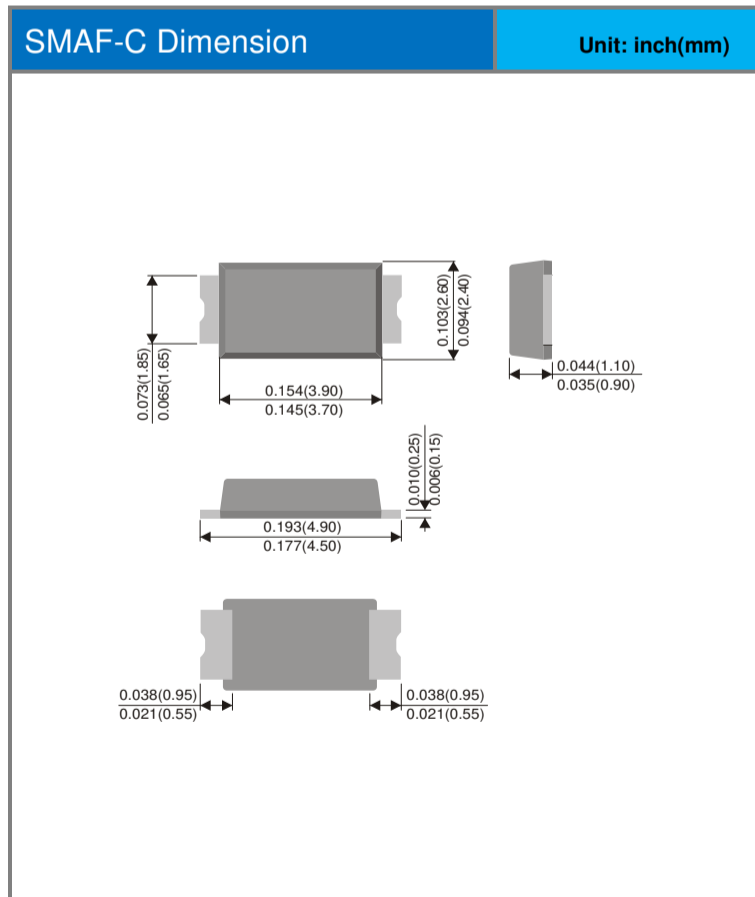


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## Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
US1AAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1A	Halogen free
US1BAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1B	Halogen free
US1DAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1D	Halogen free
US1GAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1G	Halogen free
US1JAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1J	Halogen free
US1KAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1K	Halogen free
US1MAFC_R1_00001	SMAF-C	3K pcs / 7" reel	US1M	Halogen free

## Packaging Information & Mounting Pad Layout





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