

Ultra-Fast Recovery Rectifier

US1JF - US1MF

Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free



Mechanical Data

- Case: SMAF molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	US1JF	US1KF	US1MF	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	600	800	1000	V
RMS Reverse Voltage	V _{RMS}	420	560	700	V
DC Blocking Voltage	V _{DC}	600	800	1000	V
Maximum Average Forward Output Current	I _{F_AV}	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _{FSM}	30			A

Thermal Characteristics

Parameter	Symbol	US1JF	US1KF	US1MF	Unit
Typical Thermal Resistance *1	R _{θJA}	78			°C/W
	R _{θJC}	18			
	R _{θJL}	20			
Operating Junction Temperature Range	T _J	-55 ~ +150			°C
Storage Temperature Range	T _{STG}	-55 ~ +150			°C

Note *1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

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Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Typ.	Max.	Unit	
Maximum Instantaneous Forward Voltage	V_F	$I_F = 1.0\text{A}$	-	1.7	V	
Maximum Reverse Current	I_R	Rated	@ $T_A = 25^\circ\text{C}$	-	5.0	μA
		V_R	@ $T_A = 125^\circ\text{C}$	-	100.0	
Maximum Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(\text{REC})} = 0.25\text{A}$	-	75	ns	

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Ratings and Characteristic Curves (@T_A=25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

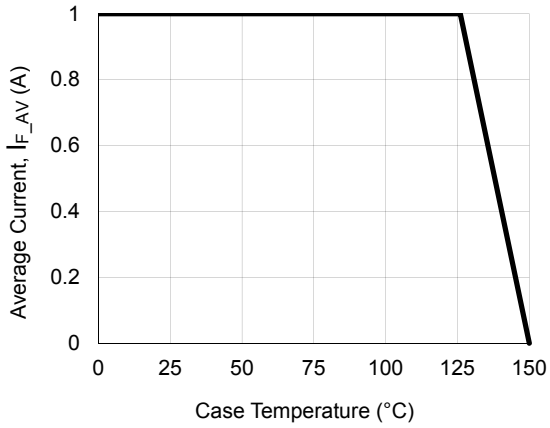


Fig.2 Surge Current Derating Curve

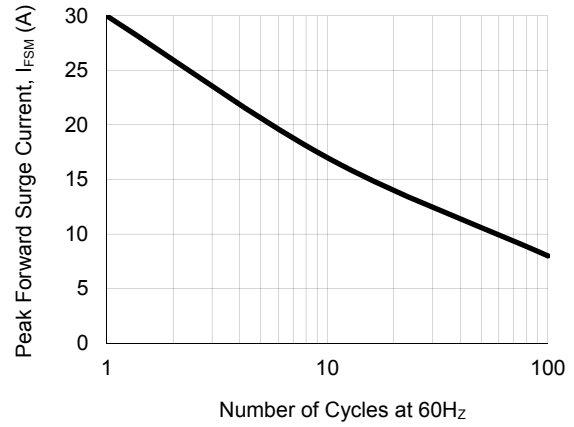


Fig.3 Typical Forward Voltage Characteristic

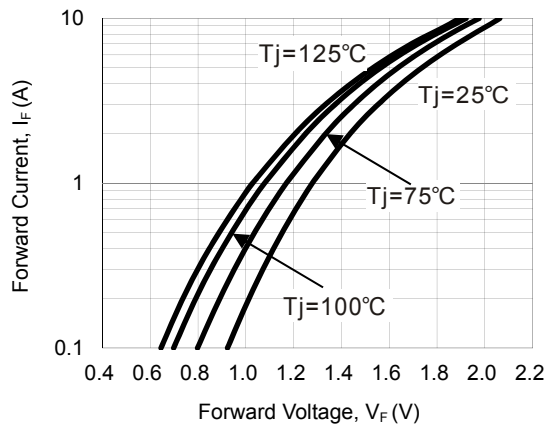
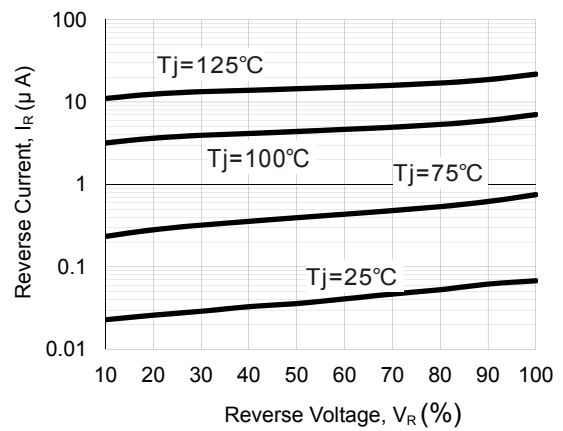


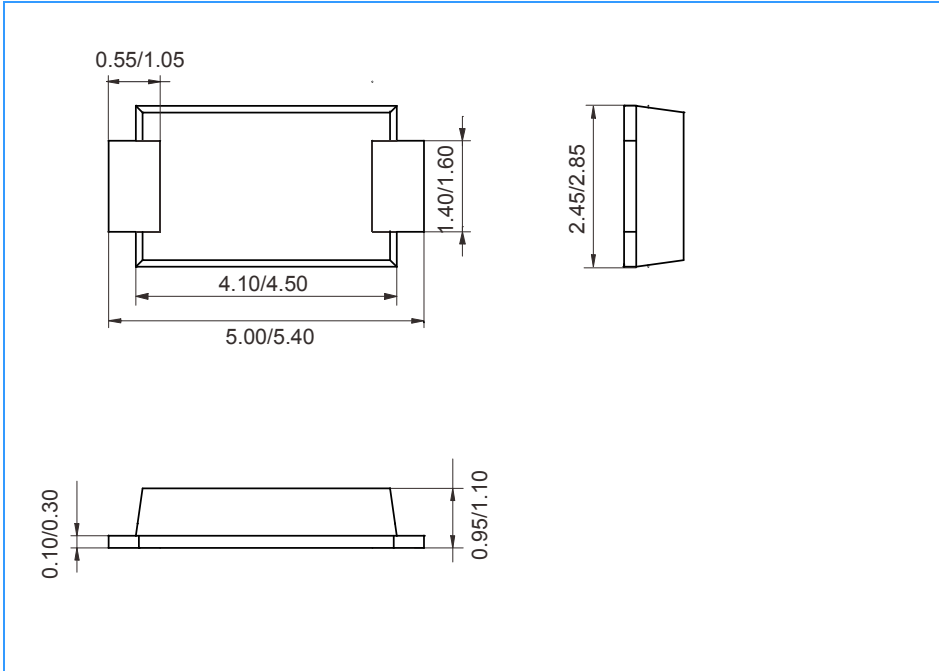
Fig.4 Typical Reverse Characteristic



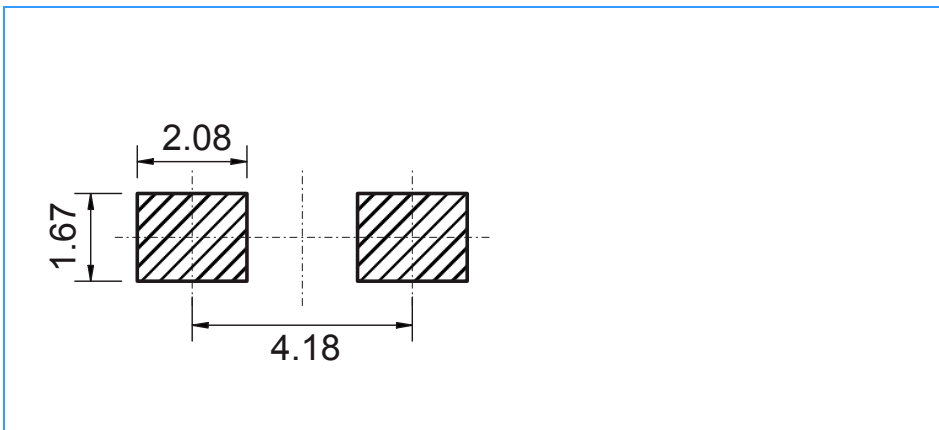
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
US1JF	US1JF	SMAF	10000 / Tape & Reel
US1KF	US1KF	SMAF	10000 / Tape & Reel
US1MF	US1MF	SMAF	10000 / Tape & Reel