

Ultra-Fast Recovery Rectifier

TUS3J - TUS3M

Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards



Mechanical Data

- Case: SMC 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	TUS3J	TUS3K	TUS3M	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
Average Forward Output Current	I _{F_AV}	3.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine Wave	I _{FSM}	100			A

Thermal Characteristics

Parameter	Symbol	TUS3J	TUS3K	TUS3M	Unit
Typical Thermal Resistance *1	R _{θJA}	42			°C/W
	R _{θJC}	14			
	R _{θJL}	9			
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
Instantaneous Forward Voltage	V_F	$I_F = 3.0\text{A}$		-	1.7	V
Reverse Current	I_R	Rated V_R	@ $T_A = 25^\circ\text{C}$	-	10	μA
			@ $T_A = 125^\circ\text{C}$	-	500	
Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(REC)} = 0.25\text{A}$		-	75	ns

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

Fig. 1 Forward Current Derating Curve

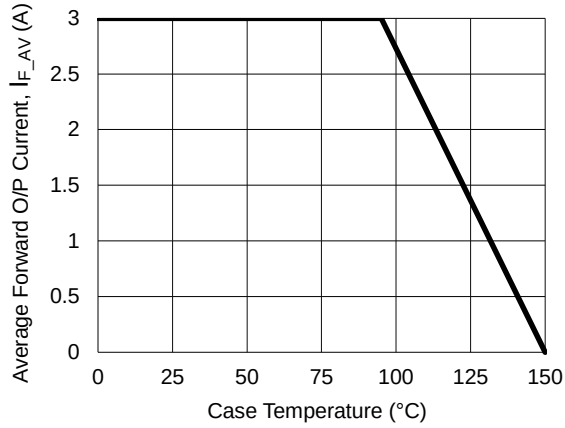


Fig. 2 Surge Current Derating Curve

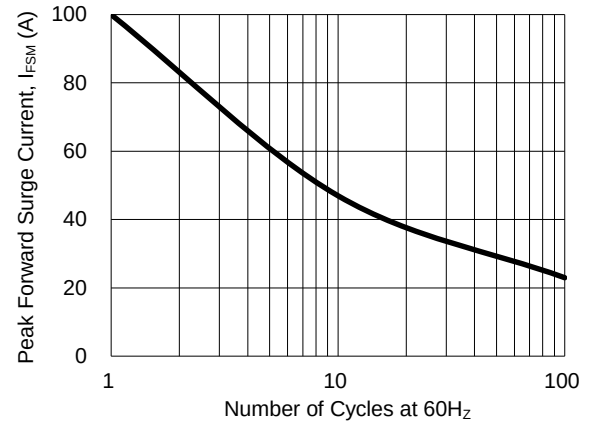


Fig. 3 Typical Forward Voltage Characteristics

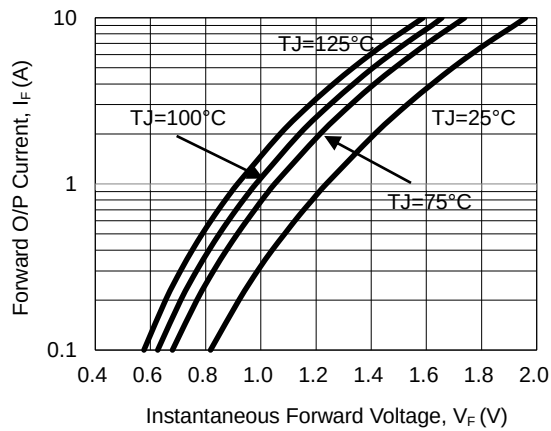
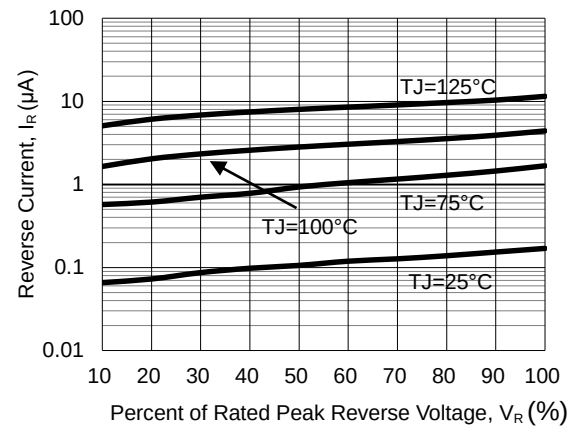


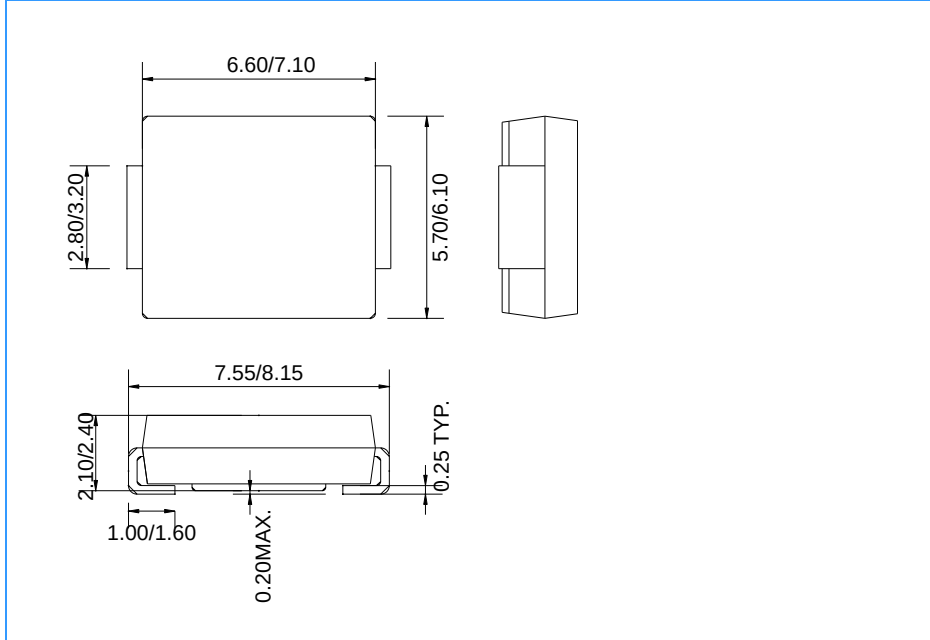
Fig. 4 Typical Reverse Characteristics



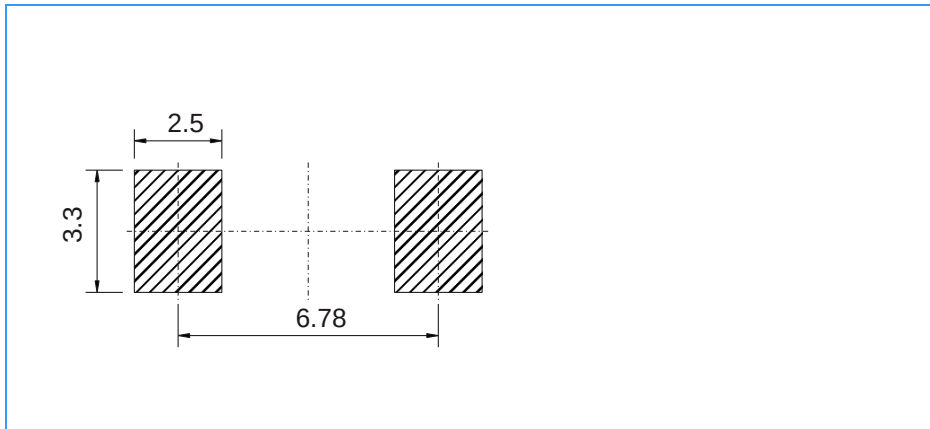
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
TUS3J	US3J	SMC	3000 pcs / Tape & Reel
TUS3K	US3K	SMC	3000 pcs / Tape & Reel
TUS3M	US3M	SMC	3000 pcs / Tape & Reel