

# High Efficiency Rectifier

# US5JC--US5MC

## Features

- For surface mounted applications
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



## 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<sub>A</sub> = 25°C unless otherwise specified)

Characteristic	Symbol	US5JC	US5KC	US5MC	Units
Peak repetitive reverse voltage	V <sub>RRM</sub>	600	800	1000	V
RMS reverse voltage	V <sub>RMS</sub>	420	560	700	V
DC blocking voltage	V <sub>DC</sub>	600	800	1000	V
Maximum average forward output current	I <sub>F(AV)</sub>	5.0			A
Peak forward surge current, 8.3ms single half-sine-wave	I <sub>FSM</sub>	150			A

## Thermal Characteristics

Parameter	Symbol	US5JC	US5KC	US5MC	Units
Typical thermal resistance (Note 1)	R <sub>θJA</sub>	47			°C /W
	R <sub>θJC</sub>	13			
	R <sub>θJL</sub>	12			
Operating junction temperature range	T <sub>J</sub>	- 55 ---- + 150			°C
Storage temperature range	T <sub>STG</sub>	- 55 ---- + 150			°C

Note:

1. Device mounted on PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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## Electrical Characteristics (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test conditions		Typ.	Max.	Units
Maximum instantaneous forward voltage	V <sub>F</sub>	I <sub>F</sub> =5.0A	@T <sub>A</sub> =25°C	--	1.7	V
Maximum Reverse current	I <sub>R</sub>	Rated V <sub>R</sub>	@T <sub>A</sub> =25°C	--	10	μ A
			@T <sub>A</sub> =125°C	--	300	
Maximum Reverse Recovery Time	trr	I <sub>F</sub> =0.5A, I <sub>RM</sub> =1A, I <sub>R(REC)</sub> =0.25A		--	75	ns

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## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1-Forward Current Derating Curve

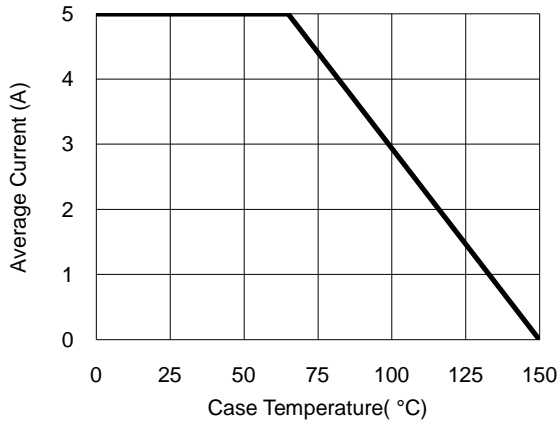


Fig.2- Surge Current Derating Curve

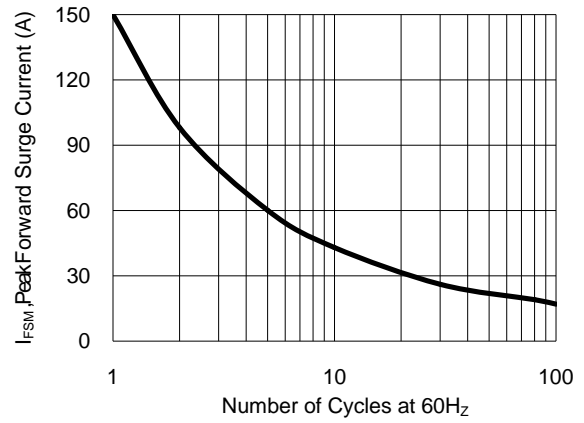


Fig.3- Typical Forward Voltage Characteristic

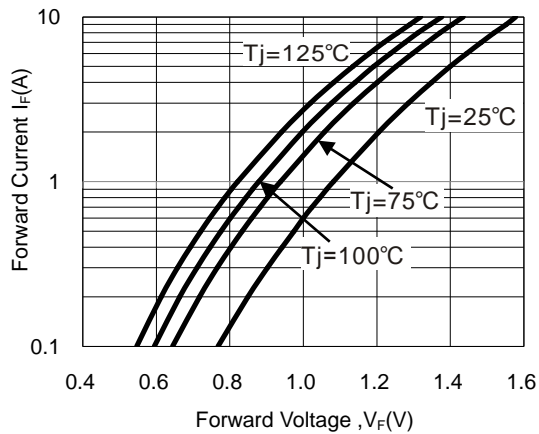
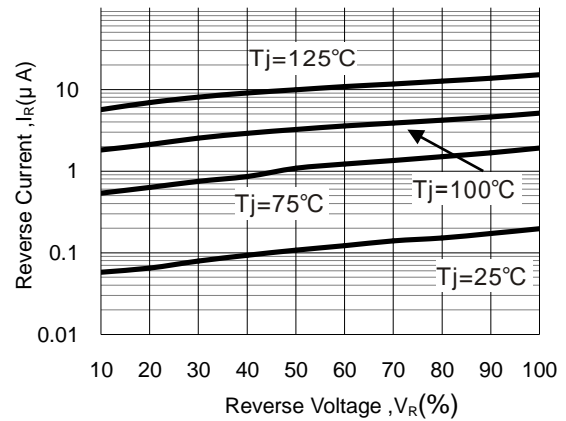


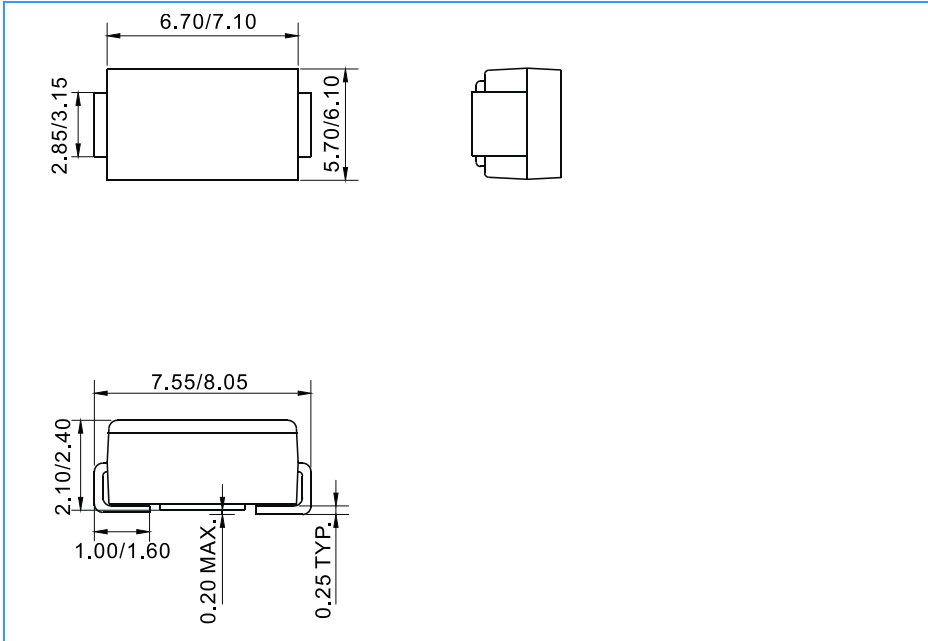
Fig.4- Typical Reverse Characteristic



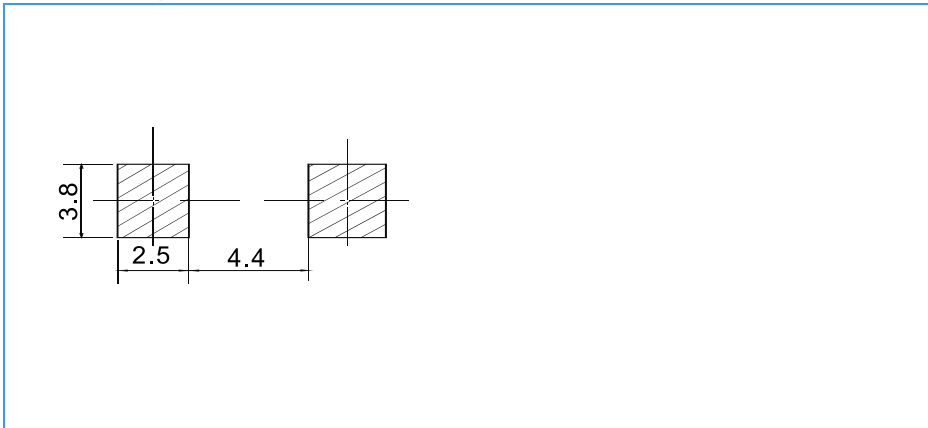
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## Package Outline Dimensions(unit:mm)



## Mounting Pad Layout(unit:mm)



## Ordering Information

Part No.	Marking	Package	Shipping
US5JC	US5JC	SMC	3000 / Tape&Reel
US5KC	US5KC	SMC	3000 / Tape&Reel
US5MC	US5MC	SMC	3000 / Tape&Reel