

Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ Glass passivated chip junction
- ◆ High forward surge capability
- ◆ Super fast reverse recovery time
- ◆ Green product-halogen free



Mechanical Data

Case: SMC Molded plastic body

Terminals: Plated leads solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed: 260°C/10 seconds

Polarity: Cathode line denotes the cathode end

Mounting Position: Any

Maximum Ratings & Electrical Characteristics

Ratings at TA = 25°C unless otherwise specified

Characteristic	Symbol	MU48CB	Units
Peak repetitive reverse voltage	VRRM	600	V
RMS reverse voltage	VRMS	420	V
DC blocking voltage	VDC	600	V
Maximum average forward output current	IF(AV)	4	A
Peak forward surge current, 8.3ms single half-sine-wave, @TJ = 25°C	IFSM	80	A
Rating for fusig (t<8.3ms)	I2t	26.65	A2sec
Maximum instantaneous forward voltage @ 4A	VF	1.25	V
Maximum reverse recovery time (Note 1)	Trr	50	nS
Maximum Reverse current Rated VR	IR	@TA =25°C	5
		@TA =125°C	150

Thermal Characteristics

Characteristic	Symbol	MU48CB	Units
Typical thermal resistance (Note 2)	R ΘJA	27	°C /W
	R ΘJL	4	
Operating junction temperature range	TJ	- 55 ---- + 175	°C
Storage temperature range	TSTG	- 55 ---- + 150	°C

Note:

(1) IF=0.5A, IR=1A, IRR=0.25A

(2) Units mounted on P.C.B. with 30 x30 mm land areas.

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

Fig.1-Forward Current Derating Curve

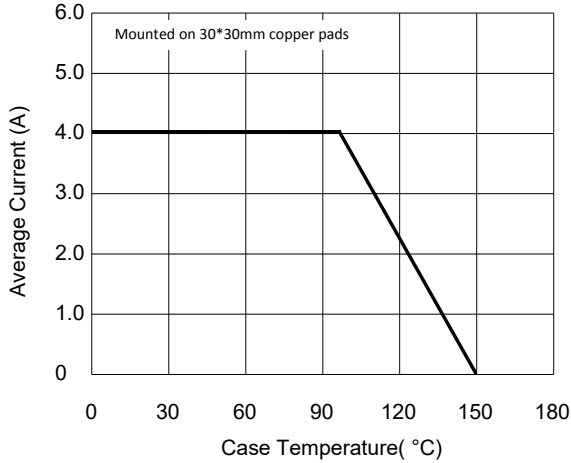


Fig.2- Surge Current Derating Curve

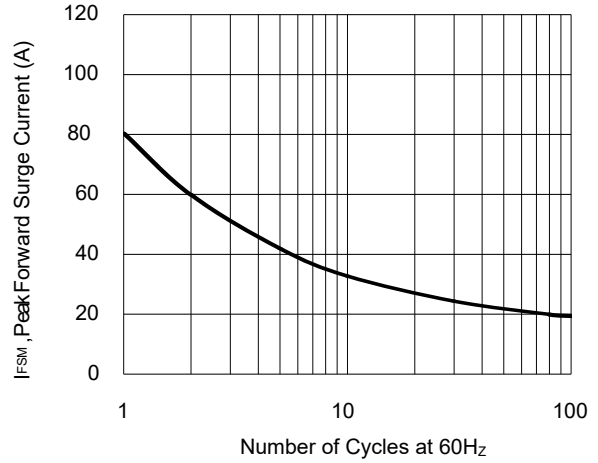


Fig.3- Typical Forward Voltage Characteristic

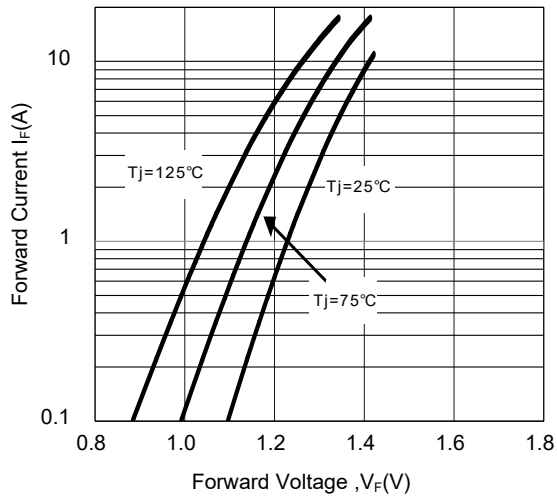
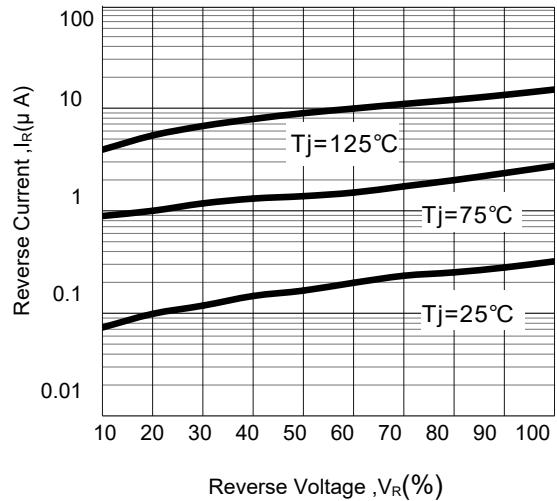
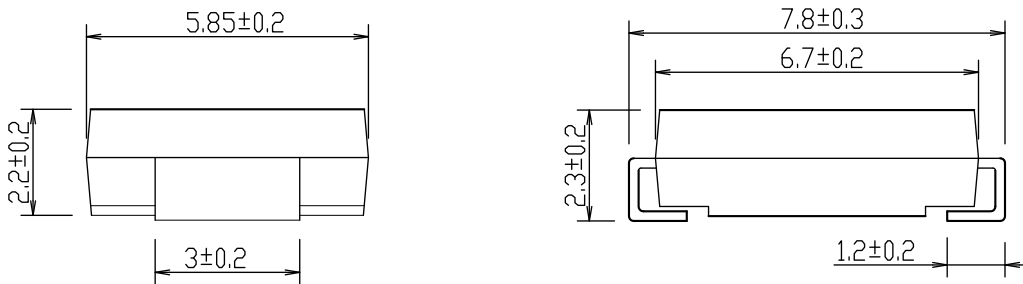


Fig.4- Typical Reverse Characteristic

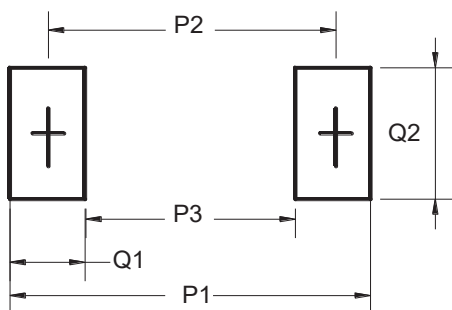


Package Outline Dimensions(unit:mm)

DO-214AB (SMC)



Mounting Pad Layout(unit:mm)



Dim	Millimeters
P1	9.80
P2	6.80
P3	3.80
Q1	3.00
Q2	4.00

Ordering Information

Part No.	Marking	Package	Shipping
MU48CB	MU48CB	SMC	3000PCS /Tape&Reel

PACKAGE:

OUTLINE	PACKING METHOD	PCS/REEL	PCS/BOX	PCS/CARTON
SMC	Reel Packing	3000	6000	42000

SOLDER_REFLOW_PROFILE

Table 4-2 Pb-free Process – Package Classification Reflow Temperatures

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 +0 °C *	260 +0 °C *	260 +0 °C *
1.6 mm - 2.5 mm	260 +0 °C *	250 +0 °C *	245 +0 °C *
≥2.5 mm	250 +0 °C *	245 +0 °C *	245 +0 °C *

* Tolerance: The device manufacturer/supplier shall assure process compatibility up to and including the stated classification temperature (this means Peak reflow temperature +0 °C. For example 260 °C+0°C) at the rated MSL level.

Table 5-2 Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate (Ts _{max} to Tp)	3 °C/second max.	3° C/second max.
Preheat <ul style="list-style-type: none"> - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (ts_{min} to ts_{max}) 	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-180 seconds
Time maintained above: <ul style="list-style-type: none"> - Temperature (T_L) - Time (t_L) 	183 °C 60-150 seconds	217 °C 60-150 seconds
Peak/Classification Temperature (Tp)	See Table 4.1	See Table 4.2
Time within 5 °C of actual Peak Temperature (tp)	10-30 seconds	20-40 seconds
Ramp-Down Rate	6 °C/second max.	6 °C/second max.
Time 25 °C to Peak Temperature	6 minutes max.	8 minutes max.

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

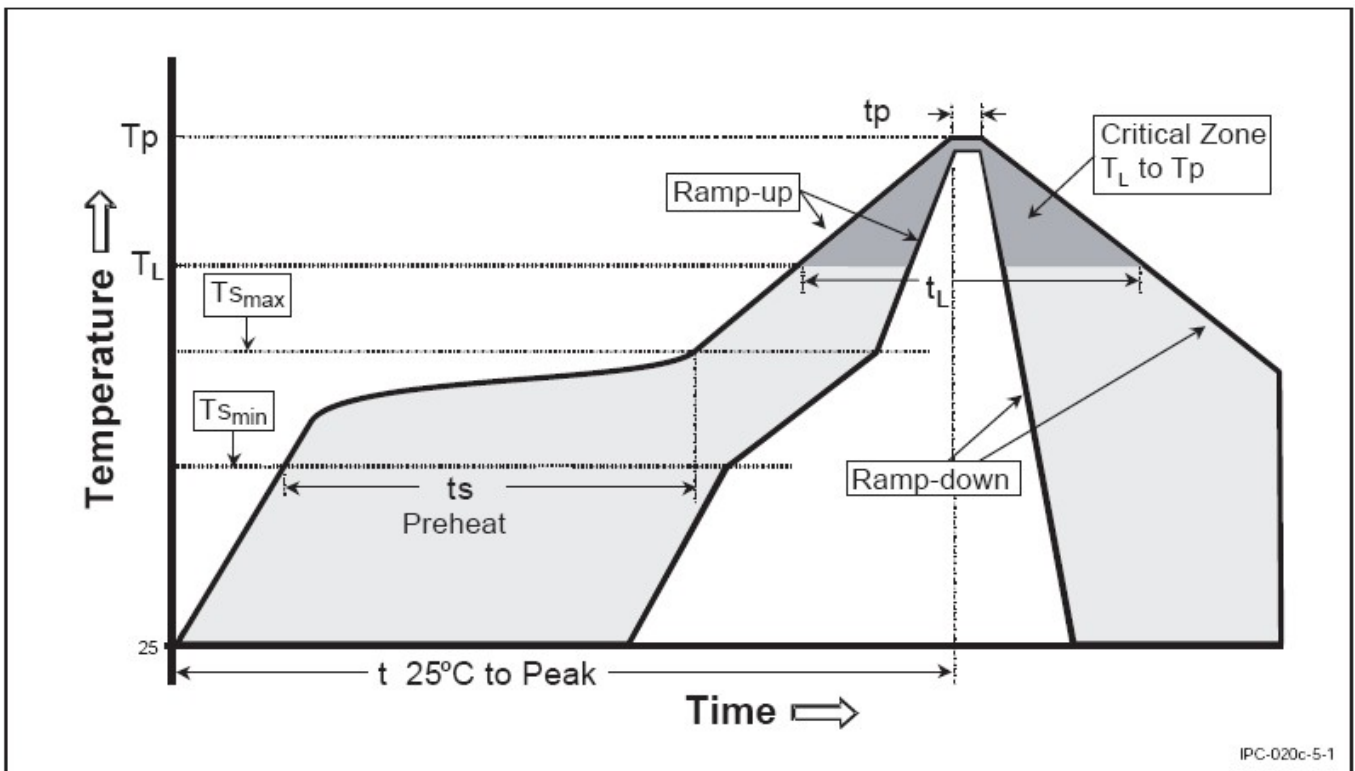


Figure 5-1 Classification Reflow Profile

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