

RECOMMENDED REFLOW SOLDERING CONDITIONS

Alchip™-MVS/MVA/MV/MVE/MVK/MZJ/MZA/MVY/MZF/MZE/MZK/MLA/MLF/MLK/MLV/MLVJ/MVH/MHB/MKB/MV-BP/MVK-BP

The following conditions are recommended for air convection and infrared reflow soldering on the SMD products on to a glass epoxy circuit boards by cream solder. The dimensions of the glass epoxy boards with resist are 90×50×0.8mm for D46 to KG5 case code SMD capacitors and 180×90×0.8mm for LH0 to MN0 case codes SMD capacitors.

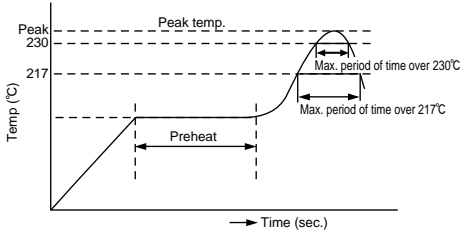
The temperatures shown are the surface temperature values on the top of the can and on the capacitor terminals.

Reflow should be performed twice or less.

Please ensure that the capacitor became cold enough to the room temperature (5 to 35°C) before the second reflow.

Consult with us when performing reflow profile in IPC / JEDEC (J-STD-020)

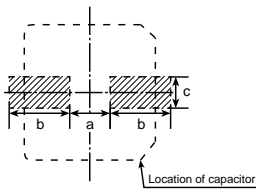
●Recommended soldering heat conditions (Except for Conductive Polymer Aluminum Solid Capacitors)



SMD type	Case code	Voltage range (Vdc)	Preheat	Time maintained above 217°C	Time maintained above 230°C	Peak temp.	Reflow number
Vertical	D46, E46, F46	4 to 50V	150 to 180°C 120sec. max.	40sec. max.	30sec. max.	250°Cmax.	2 times or less
		4 to 50V		90sec. max.	60sec. max.	260°Cmax.	2 times or less
	D55 to F90	63 to 80V		60sec. max.	40sec. max.	250°Cmax.	2 times or less
		4 to 50V		60sec. max.	30sec. max.	245°Cmax.	2 times or less
	H63 to JA0	63 to 100, 400V		30sec. max.	20sec. max.	240°Cmax.	2 times or less
		6.3 to 50V		30sec. max.	20sec. max.	240°Cmax.	2 times or less
KE0 to MN0	63 to 450V	20sec. max.	—	230°Cmax.	2 times or less		

●Recommended Solder Land on PC Board

Series : MVS/MVA/MV/MVE/MVK/MZJ/MZA/MVY/MZF/MZE/MZK
MLA/MLF/MLK/MLV/MLVJ/MVH/MHB/MKB/MV-BP
MVK-BP



: Solder land on PC board

Case code	Terminal code : A			Terminal code : G		
	a	b	c	a	b	c
D46, D55, D60, D61, D73	1.0	2.6	1.6			
E46, E55, E60, E61, E73	1.4	3.0	1.6			
F46, F55, F60, F61, F73, F80, F90	1.9	3.5	1.6			
H63	2.3	4.5	1.6			
HA0	3.1	4.2	2.2	3.1	4.2	3.5
JA0	4.5	4.4	2.2	4.5	4.4	3.5
KE0, KG5	4.0	5.7	2.5	3.4	6.3	9.3
LH0, LN0	6.0	6.9	2.5	4.7	7.8	9.6
MH0, MN0	6.0	7.9	2.5	4.7	8.8	9.6

◆PRECAUTIONS FOR USERS

Soldering method

The capacitors of Alchip-series have no capability to withstand such dip or wave soldering as totally immerses components into a solder bath.

Reflow soldering

Reflow the capacitors within recommended reflow soldering conditions. Verify there is no temperature stress to the capacitors because the following differences might degrade capacitors electrically and mechanically. Please consult us if other reflow conditions are employed.

- 1.Location of components : Temperature increases at the edge of PC board more than the center.
- 2.Population of PC board : The lower the component population is, the more temperature rises.
- 3.Material of PC board : A ceramic made board needs more heat than a glass epoxy made board. The heat increase may cause damage to the capacitors.
- 4.Thickness of PC board : A thicker board needs more heat than a thinner board. The heat increase may damage the capacitors.
- 5.Size of PC board : A larger board needs more heat than a smaller board. The heat increase may damage the capacitors.
- 6.Solder thickness
If very thin cream solder paste is to be used for SMD types, please consult with us.
- 7.Location of infrared ray lamps : IR reflow as well as hot plate reflow heats only on the reverse side of the PC board to lessen heat stress to the capacitors.
- 8.Vapor phase soldering (VPS) is not used.

Rework of soldering

Use a soldering iron for rework. Do not exceed an iron tip temperature of 380±10°C and an exposure time of 3±0.5 seconds.

Mechanical stress

Do not use the capacitors for lifting the PC board and give stress to the capacitor. Avoid bending the PC board. This may damage the capacitors.

Cleaning assembly board

Immediately after solvent cleaning, remove residual solvent with an air knife for at least 10 minutes. If the solvent is insufficiently dry, the capacitors may corrode.

Coating on assembly board

- 1.Before curing coating material, remove the cleaning solvents from the assembly board.
- 2.Before conformal coating, a chloride free pre-coat material is recommended to decrease the stress on the capacitors.

Molding with resin

Internal chemical reaction gradually produces gas in the capacitor; then, increasing internal pressure. If the end seal of the capacitor is completely covered by resin the gas will be unable to escape causing a potentially dangerous situation. The chlorine contained resin will penetrate into the end seal, reach the inside element, and cause damage of the capacitor.

Others

Refer to PRECAUTIONS AND GUIDELINES.