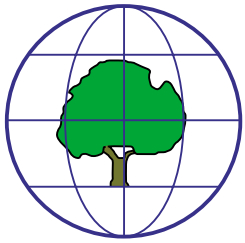
Lead-free, Non-PVC and RoHS Compliance Aluminum Electrolytic Capacitors

GREEN FOR TOMORROW



NIPPON CHEMI-CON GROUP

Nippon Chemi-Con always considers global environments in product materials, designs and manufacturing. In fact, our factories already have received ISO-14000 certificate. In terms of raw materials of aluminum electrolytic capacitors, Cadmium, Mercury, Hexavalent Chromium, PBB and PBDE have never been used in the products. Furthermore, starting in 2004, the lead-containing materials were eliminated from all the aluminum electrolytic capacitors including Conductive Polymer Aluminum Solid Capacitors, which became RoHS compliance.

◆Lead-free and Non-PVC Products

1. Plating materials on terminals

Category (Product configuration)			Plating material on terminals	
			Original type	Lead-free type
SMD	Horizon type		Sn-Pb	Sn-Bi
	Vertical type	case code : B55 to JA0		Sn-Bi
		case code : KE0 to MN0		Sn100%
Radial		case dia. : ～φ8		Sn-Bi
		case dia. : φ10～		Sn100%
Snap-In				Sn100%
Screw-Mount			Originally lead-free	Originally lead-free

(Note) Pb:Lead ,Sn:Tin, Bi:Bismuth

2. Outer Sleeve

Category (product configuration)		Sleeve materials	
		Original type	Lead-free type
SMD		Sleeveless(Resin case)	Sleeveless(Resin case)
Radial	φ8X5L	Sleeveless(Coating case)	Sleeveless(Coating case)
	Other than φ3/3.5/8X5L	PVC	PET
Snap-In		PVC	PET
Screw-Mount		PVC	Lead-free PVC

- The colors of PET sleeves are available only in black, brown and dark blue. Refer to each product catalog.
- For lead-free Snap-In type products, catalog standard designs do not equip top disks which conventional products had.
- Please consult us about non-flammable grade for outer sleeve material.

◆RoHS Compliance Part Numbering System

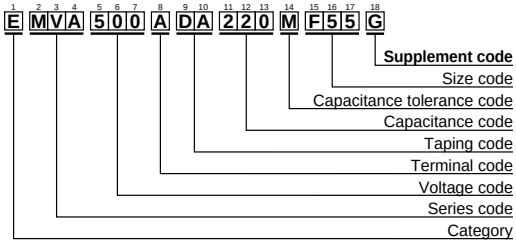
Catalog products have the following supplement codes.

Category	Supplement code
Horizontal SMD, Vertical SMD (Case Dia.: ～φ10)	G
Radial (8X5)	G
Radial (～φ8, Except φ3/3.5/8X5L)	D
Vertical SMD (Case Dia. : φ12.5 and more), Radial (Case Dia. : φ10 and more)	S
Snap-In	S
Screw-Mount	M

(Note)

* Radial lead type of case sizes φ3X5L and φ3.5X5Lmm are unified to φ4X5Lmm.
* For Snap-In type products, non-flammable grade sleeve and/or top disk equipped designs are available upon requests. Please consult us for supplement codes.

●Example of Part No.



Specifications in this bulletin are subject to change without notice.

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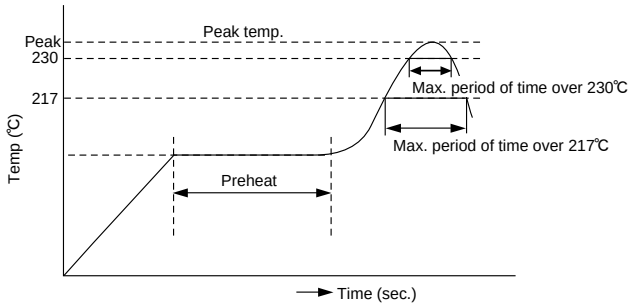
◆Reflow soldering conditions

Conventional designs of SMD aluminum electrolytic capacitors did not withstand high temperature reflow profiles which lead-free solder is used at. New SMD products are improved for heat durability against the high temperature reflow conditions. 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 B55 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℃) before the second reflow.

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

Contents			Lead-free type (high heat durability design)					Original type		
SMD type	Case code	Voltage range	Use Supplement Code "G" for case code B6 to D13 and B55 to JA0, and "S" for case code KE0 to MN0					Supplement Code "N"		
			Preheat	Time maintained above 217℃	Time maintained above 230℃	Peak temp.	Reflow number	Preheat	Time maintained above 200℃	Peak temp.
Horizontal	B6 to D13	All	150 to 180℃ 120sec. max.	60sec. max.	30sec. max.	250℃max.	1time	150℃max. 120sec. max.	20sec. max.	240℃max.
Vertical	B55 to F80	4 to 50V		90sec. max	60sec. max.	260℃max.	2 times or less			240℃max.
		63 to 80V		60sec. max.	40sec. max.	250℃max.	2 times or less			–
	H63 to JA0	4 to 50V		60sec. max.	30sec. max.	245℃max.	2 times or less			230℃max.
		63 to 100V		30sec. max.	20sec. max.	240℃max.	2 times or less			230/ 240℃max.
	KE0 to MN0	to 50V		30sec. max.	20sec. max.	240℃max.	2 times or less			230℃max.
	D46, E46, F46	4 to 50V		40sec. max.	30sec. max.	250℃max.	2 times or less			–

- Consult us when performing reflow profile in IPC / JEDEC (J-STD-020)
- For Conductive Polymer Aluminum Solid Capacitors, refer to their standard catalog.
  Consult us for the higher peak temperature than 250℃



◆Flow soldering conditions (Through hole parts)

Radial and Snap-In types comply with the following soldering conditions.

●Flow soldering : 260±5℃ for 10±1 seconds

●Hand soldering : 380±10℃ for 3±0.5 seconds.

◆Supplement code

Supplement codes below express combinations of outer sleeve and terminal plating materials.
Refer to each product catalog for standard combinations.

SMD

Terminal plating / Outer sleeve	Sn-Bi
Coating case	G

Radial

Terminal plating / Outer sleeve	Sn100%	Sn-Bi
PET	S	D
Coating case	H	G

Snap-In

Terminal plating / Top disk / Outer sleeve	Sn100%	
	No top disk (standard design)	With top disk
Lead-free PVC	M	T
PET	S	W

Screw-Mount

Lead-free PVC	M
Polyolefin	S
PET	C

* The color of Polyolefin sleeve is only available in black.

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