



Electronics for the Future

No.1023009

Change to strengthen and improve container tube material for LSI DIP7, 8 series and TO220FP5 series

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March 1, 2023

ROHM Co., Ltd AP Quality Control Department

1 .Summary of Changes

【Date of Issue 】 March 1, 2023

【Notice No.】 1023009

【Details of changes】 The container tube material will be changed from polyvinyl chloride to polycarbonate in the following package.

Target package : DIP-T8, DIP7F, DIP7WF, DIP7AK, DIP7K, DIP8K
: TO220FP-5、TO220FP-3

【Reason of Changes】 The container tube may be deformed if it becomes hot during transportation, so we will change to a material with high heat resistance.

【DeQuMa Evaluation】 There are no applicable items.

【Evaluation result】 Please refer to the attachment.

【Schedule】 Scheduled sample supply date : March 1, 2023
PCN response deadline : June 1, 2023
First shipment date : August 1, 2023

【Contact information of ROHM】 Please contact your nearest ROHM sales office.

2. Change point of 4M due to change of container tube material

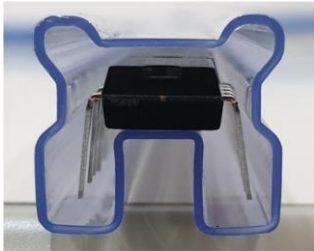
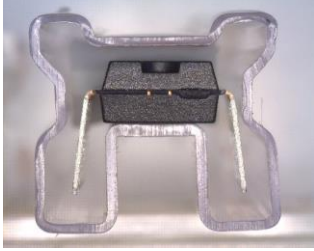

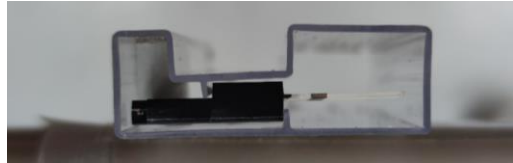
2-1) Change point of 4M

4M	Polyvinyl chloride(PVC) Container tube(existing)	Polycarbonate(PC) Container tube (after change)	Difference
Man	Worker certified by the company's in-house license system work according to work procedure.		Same
Machine	It has the same machine and has been evaluated and no differences have been confirmed.		Same
Material	Polyvinyl chloride(PVC)	Polycarbonate(PC)	Have※1
Method	There is no particular difference		Same

※1 See next page

2. Change point of 4M due to change of container tube material

2-2) Comparison of physical properties

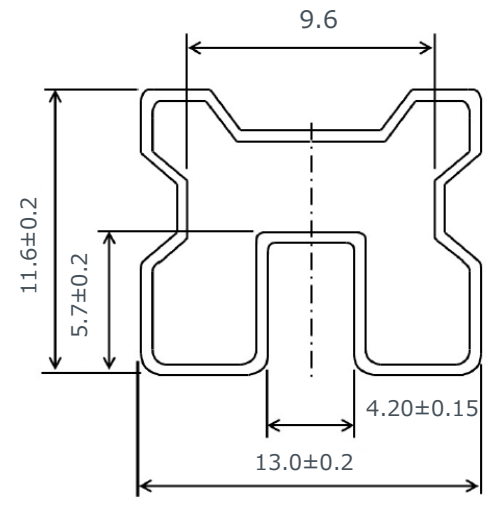
		Polyvinyl chloride(PVC)	Polycarbonate(PC)
Appearance	Shade	Bluish transparent	Colorless Transparent
	DIP-T8, DIP7F, DIP7WF, DIP7AK, DIP7K, DIP8K		
	TO220FP-5、TO220FP-3		
Material	—	Polyvinyl chloride(PVC)	Polycarbonate(PC)
Physical Properties	Bending Stress	69~98MPa	94MPa
	Coefficient of linear expansion	$6\sim 8 \times 10^{-5}K^{-1}$	$7 \times 10^{-5}K^{-1}$
	Heat resistance temperature	60~65°C	120°C
	Glass-transition temperature	81°C	147°C
	Melting point	212°C	225°C

3. Evaluation result of tubes for DIP-T8, DIP7F, DIP7WF, DIP7AK, DIP7K, DIP8K

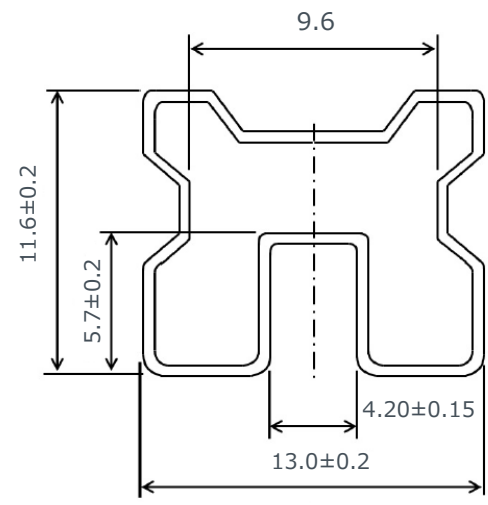
3-1 External Dimension

1) No change in design

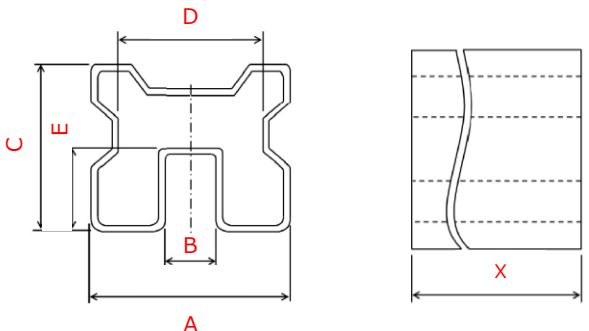
【Dimension before change】



【Dimension after change】



2) We have confirmed the performance with samples and have sufficient Cpk.

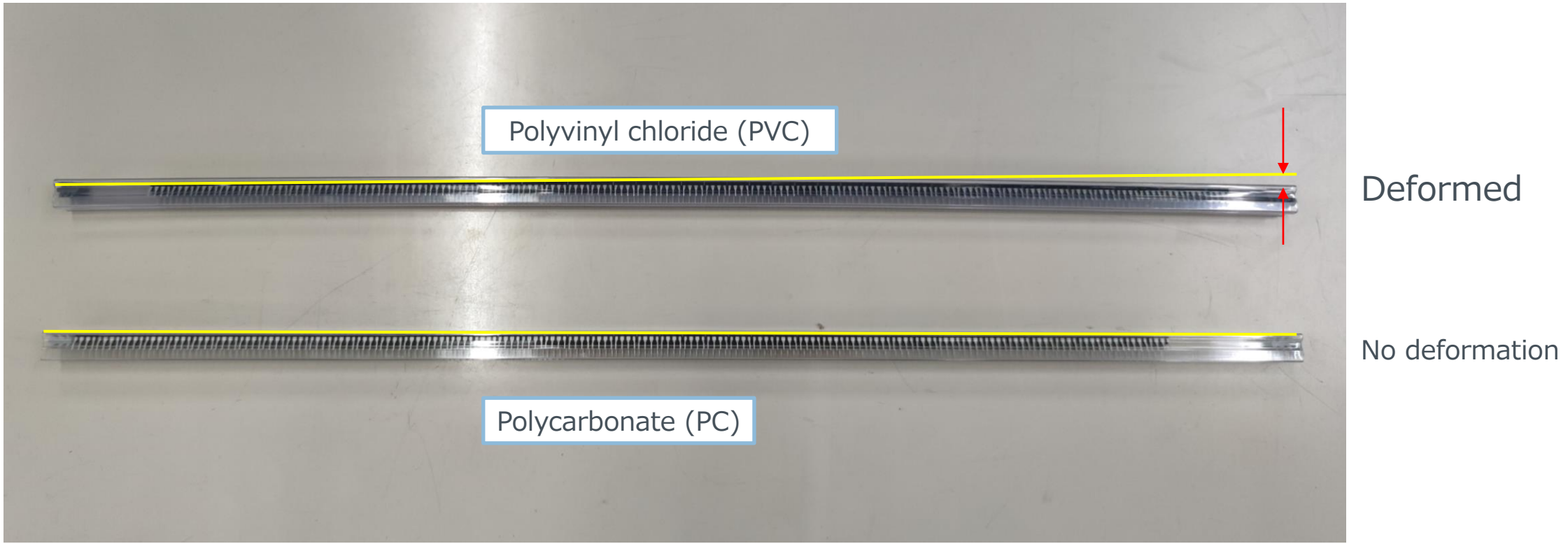


	A	B	C	D	E	X
STD	13.00	4.20	11.6	9.60	5.70	505.00
	± 0.20	± 0.15	± 0.20	-	± 0.20	+0.00 -1.00
Cpk	2.73	3.41	1.72	-	1.99	1.75

3. Evaluation result of tubes for DIP-T8, DIP7F, DIP7WF, DIP7AK, DIP7K, DIP8K

3-2 Heat resistance evaluation result

Polycarbonate tube and current tube were subjected to temperature for a long time, and deformation was evaluated. No difference was observed at 50°C and 60°C. At 70°C deformation was observed in the current tube, but not in the polycarbonate tube.

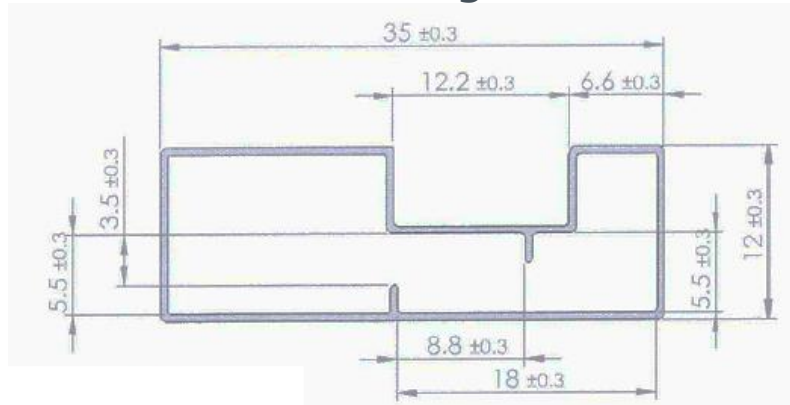


4. Evaluation result of container tube for TO220FP-5、TO220FP-3

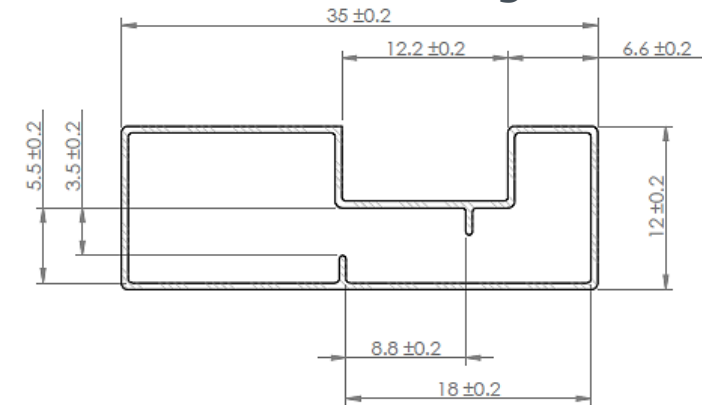
3-1 External Dimension

1) No change in design

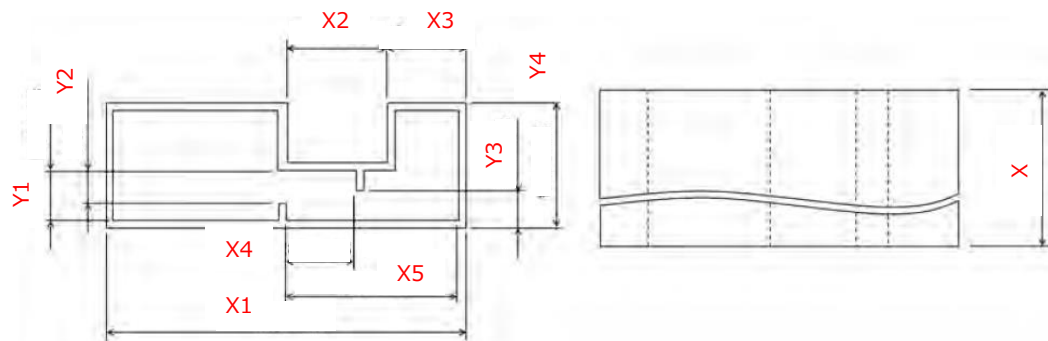
【 Dimension before change 】



【 Dimension after change 】



2) We have confirmed the performance with samples and have sufficient Cpk.

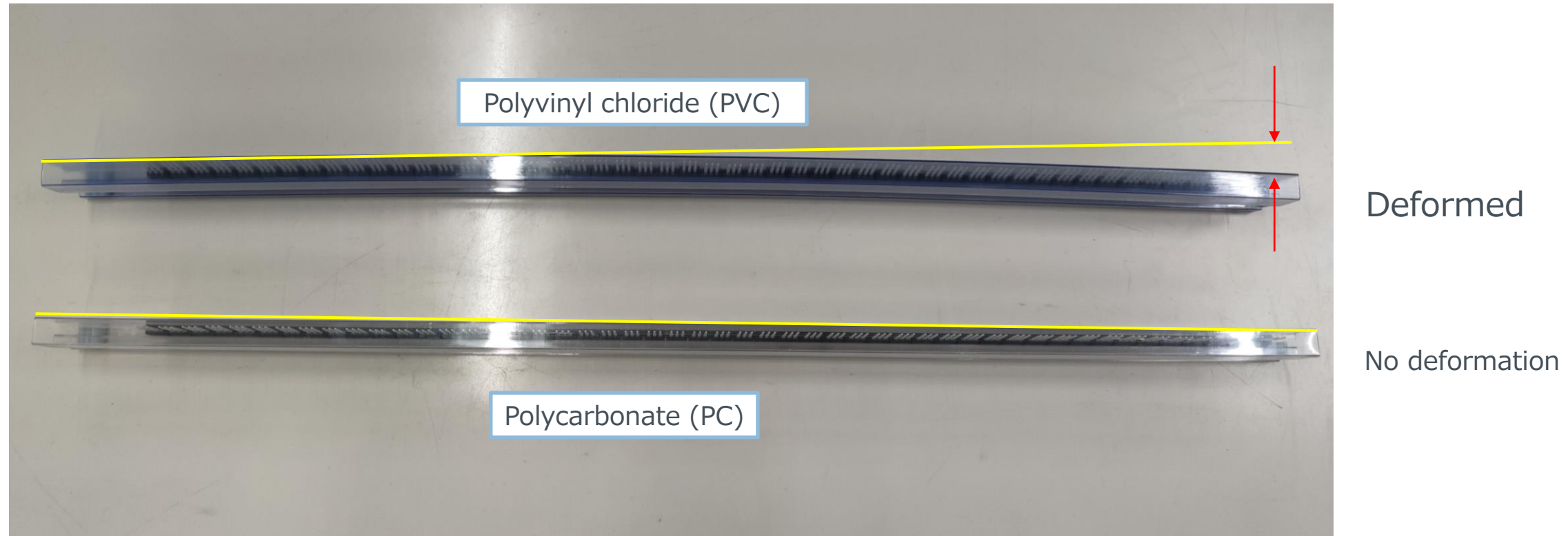


	X1	X2	X3	X4	X5	Y1	Y2	Y3	Y4	X
STD	35.00	12.2	6.6	8.8	18.0	5.5	3.5	3.5	12.0	550
	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	+0.0 -1.5
Cpk	3.06	3.64	3.91	4.14	2.56	2.73	2.42	1.81	1.96	4.11

4. Evaluation result of container tube for TO220FP-5、TO220FP-3

4-2 Heat resistance evaluation result

Polycarbonate tube and current tube were subjected to temperature for a long time, and deformation was evaluated. No difference was observed at 50°C and 60°C. At 70°C deformation was observed in the current tube, but not in the polycarbonate tube.



5. Summary

Based on the above evaluation and verification, we have determined that polycarbonate container tube can prevent from deforming and that the same level of quality can be guaranteed, so we will change the tube material.

Regarding the target models for your company, we plan to change them sequentially from the scheduled date unless they are disapproved.

Thank you for confirmation



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