



Test Report

No. : CE/2014/11874 Date : 2014/01/17 Page : 1 of 13

COMCHIP TECHNOLOGY CO., LTD.

NO. 31, YONGXIN LN., YINGTAO RD., YINGGE DIST., NEW TAIPEI CITY 239, TAIWAN (R. O. C.)



The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By : COMCHIP TECHNOLOGY CO., LTD.
Sample Description : SMD DIODES
Style/Item No. : CXXF, CXXU, CXXQR, CXXER, CXXFR, CXXUR, CXXVR, CXXTR SERIES
Sample Receiving Date : 2014/01/10
Testing Period : 2014/01/10 TO 2014/01/17

Test Result(s) : Please refer to next page(s).



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Test Result(s)

PART NAME No.1 : MIXED ALL PARTS

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg		2	22
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	n.d.
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
PVC	**	Analysis was performed by FTIR and FLAME Test.	-	Negative

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NO. 31, YONGXIN LN., YINGTAO RD., YINGGE DIST., NEW TAIPEI CITY 239, TAIWAN (R. O. C.)



Test Item(s)	Unit	Method	MDL	Result No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl	mg/kg		5	n.d.
Dibromobiphenyl	mg/kg		5	n.d.
Tribromobiphenyl	mg/kg		5	n.d.
Tetrabromobiphenyl	mg/kg		5	n.d.
Pentabromobiphenyl	mg/kg		5	n.d.
Hexabromobiphenyl	mg/kg		5	n.d.
Heptabromobiphenyl	mg/kg		5	n.d.
Octabromobiphenyl	mg/kg		5	n.d.
Nonabromobiphenyl	mg/kg		5	n.d.
Decabromobiphenyl	mg/kg		5	n.d.
Sum of PBDEs	mg/kg		-	n.d.
Monobromodiphenyl ether	mg/kg		5	n.d.
Dibromodiphenyl ether	mg/kg		5	n.d.
Tribromodiphenyl ether	mg/kg		5	n.d.
Tetrabromodiphenyl ether	mg/kg		5	n.d.
Pentabromodiphenyl ether	mg/kg		5	n.d.
Hexabromodiphenyl ether	mg/kg		5	n.d.
Heptabromodiphenyl ether	mg/kg		5	n.d.
Octabromodiphenyl ether	mg/kg		5	n.d.
Nonabromodiphenyl ether	mg/kg		5	n.d.
Decabromodiphenyl ether	mg/kg		5	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	158
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	136
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

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COMCHIP TECHNOLOGY CO., LTD.

NO. 31, YONGXIN LN., YINGTAO RD., YINGGE DIST., NEW TAIPEI CITY 239, TAIWAN (R. O. C.)



Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. ** = Qualitative analysis (No Unit)
6. Negative = Undetectable / Positive = Detectable
7. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

PFOS Reference Information : POPs - (EU) 757/2010

Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m².

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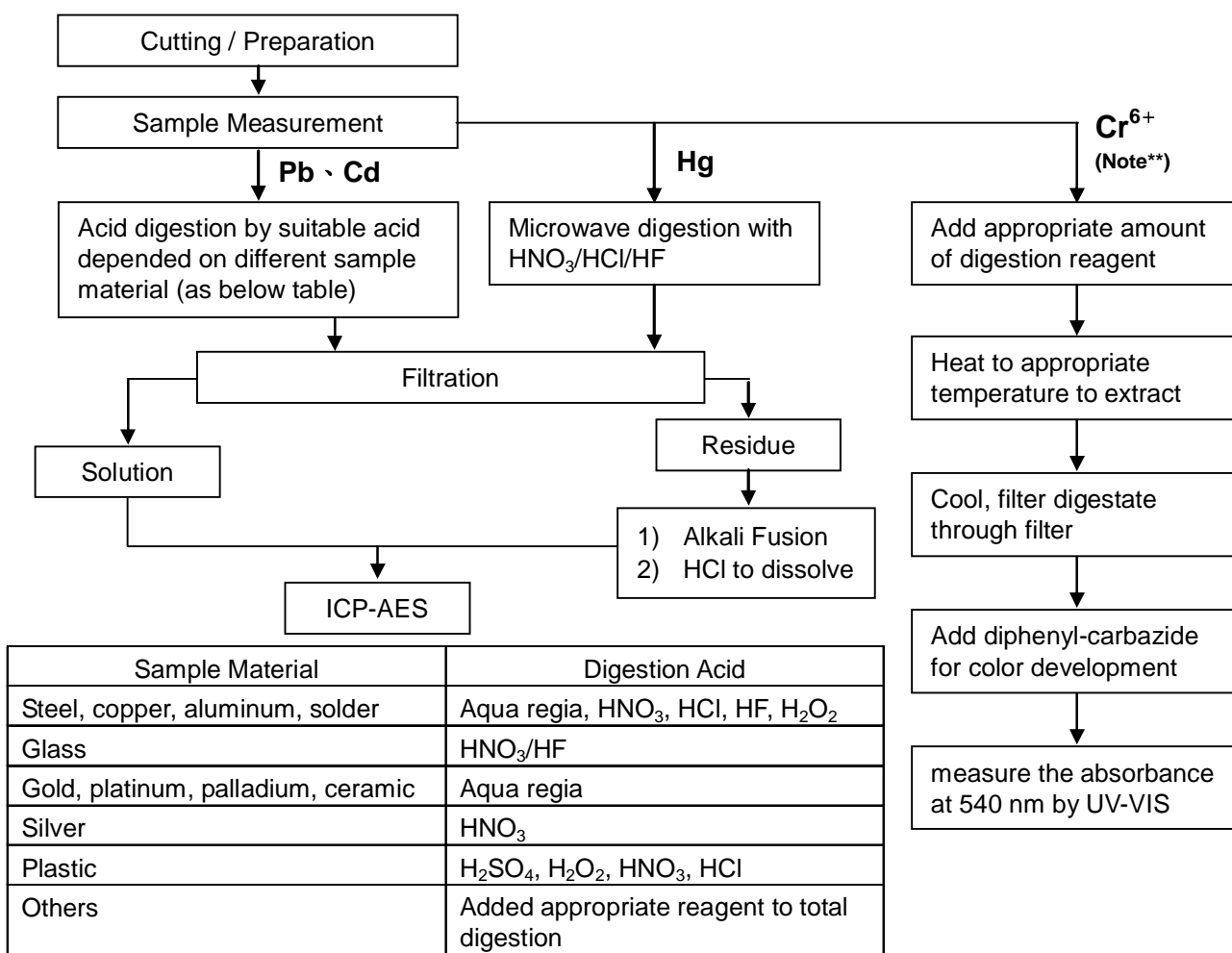
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COMCHIP TECHNOLOGY CO., LTD.

NO. 31, YONGXIN LN., YINGTAO RD., YINGGE DIST., NEW TAIPEI CITY 239, TAIWAN (R. O. C.)



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



Note** (For IEC 62321)

- (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
- (2) For metallic material, add pure water and heat to boiling.

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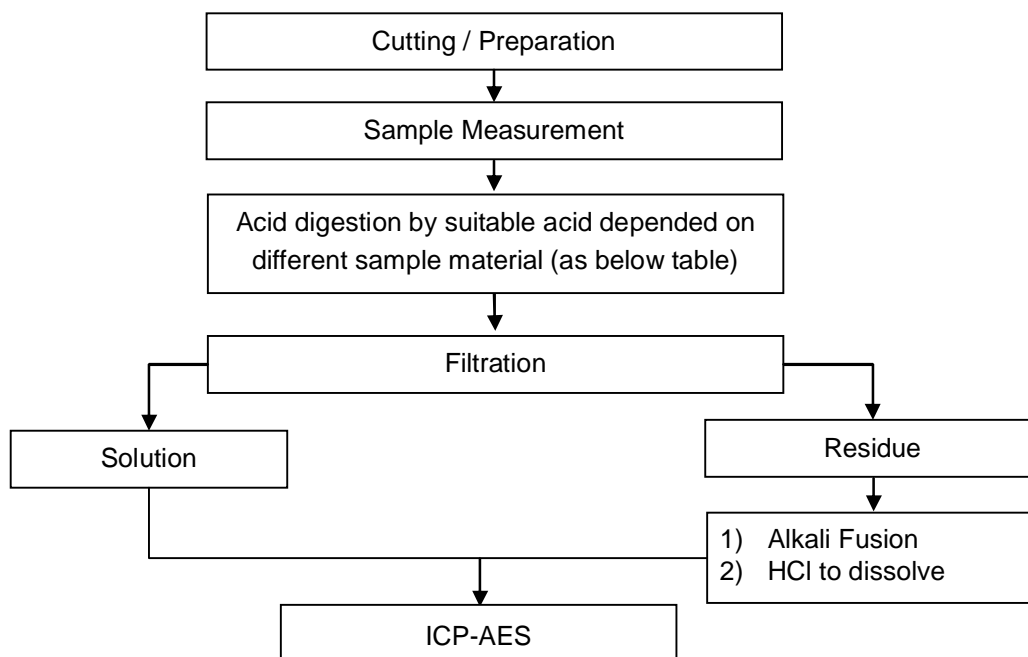
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

Flow Chart of digestion for the elements analysis performed by ICP-AES



Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Added appropriate reagent to total digestion

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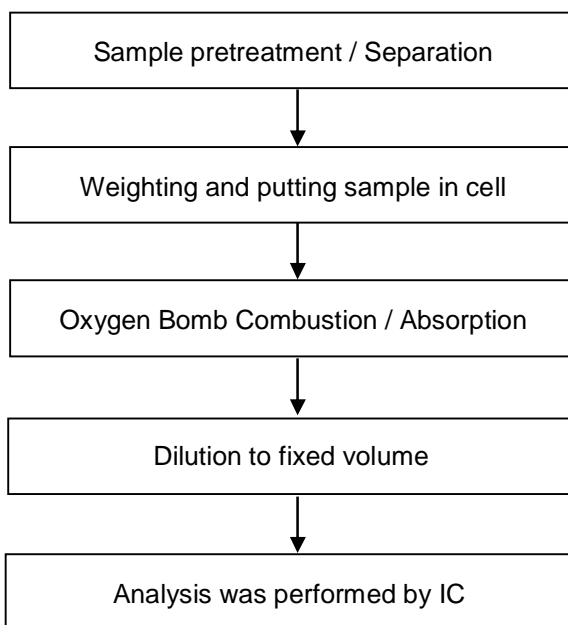
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Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



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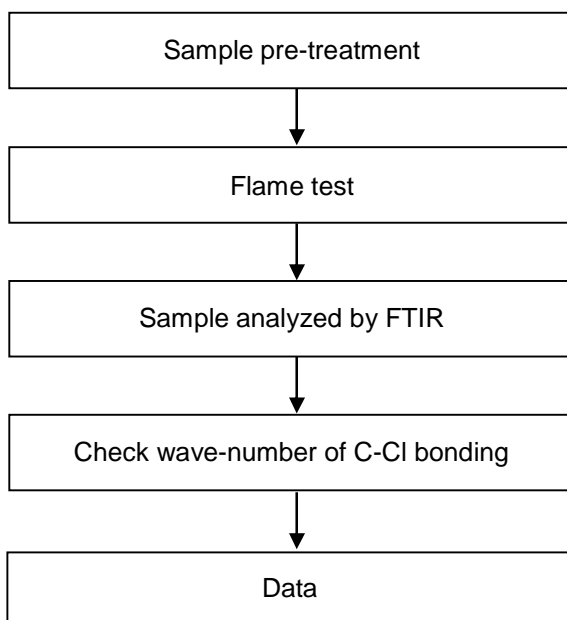
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Analysis flow chart for determination of PVC in material

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang



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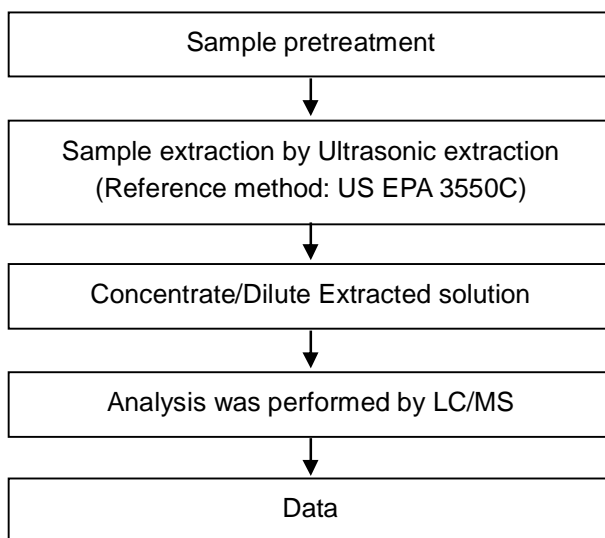
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PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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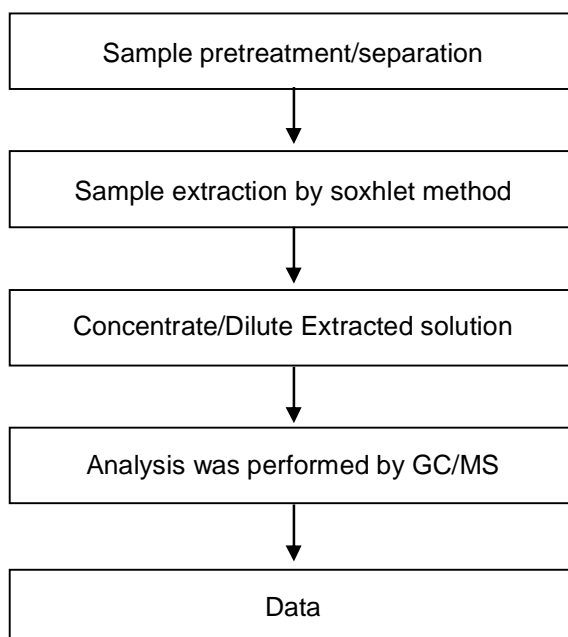
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Analytical flow chart of phthalate content

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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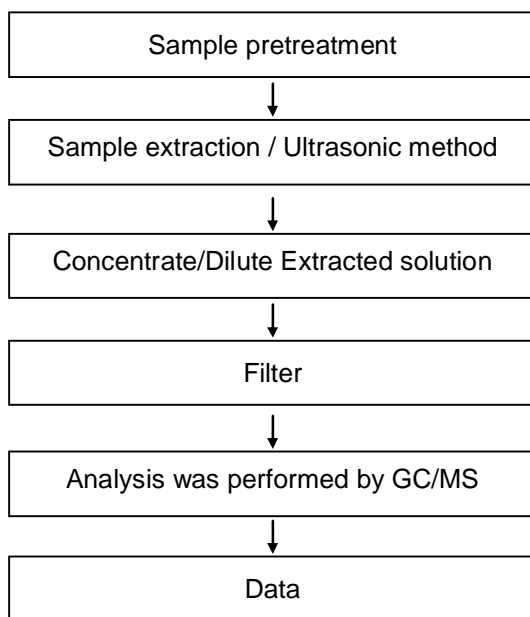
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HBCDD analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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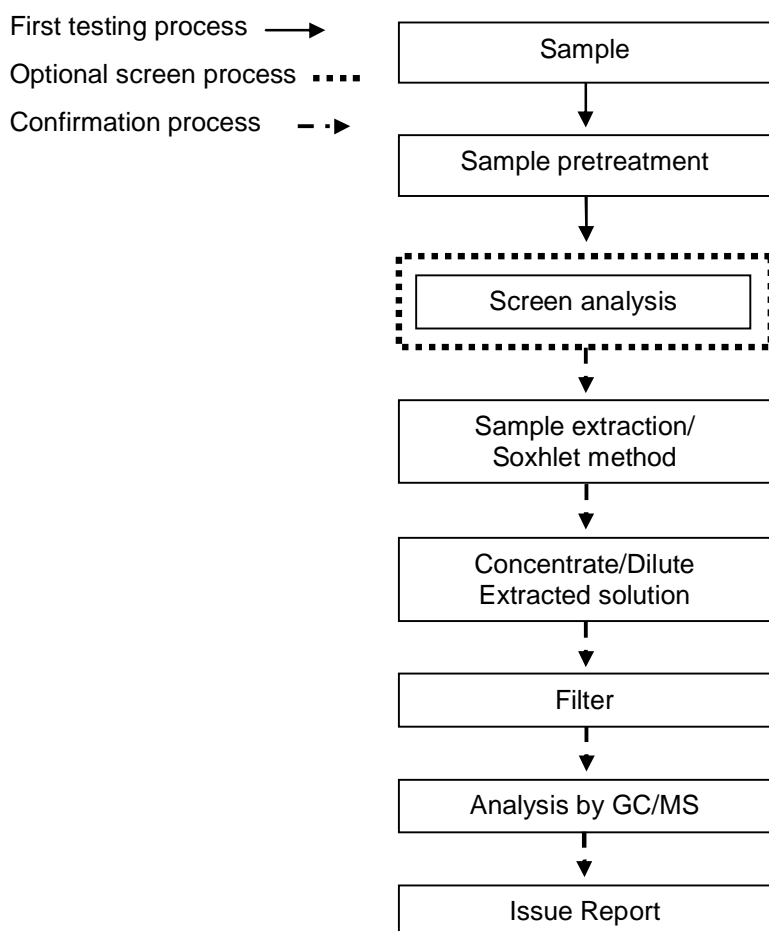
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NO. 31, YONGXIN LN., YINGTAO RD., YINGGE DIST., NEW TAIPEI CITY 239, TAIWAN (R. O. C.)



PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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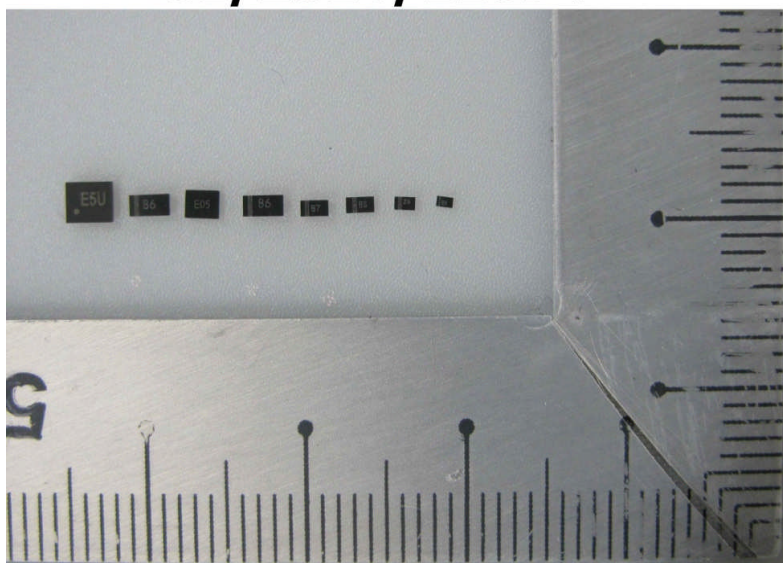
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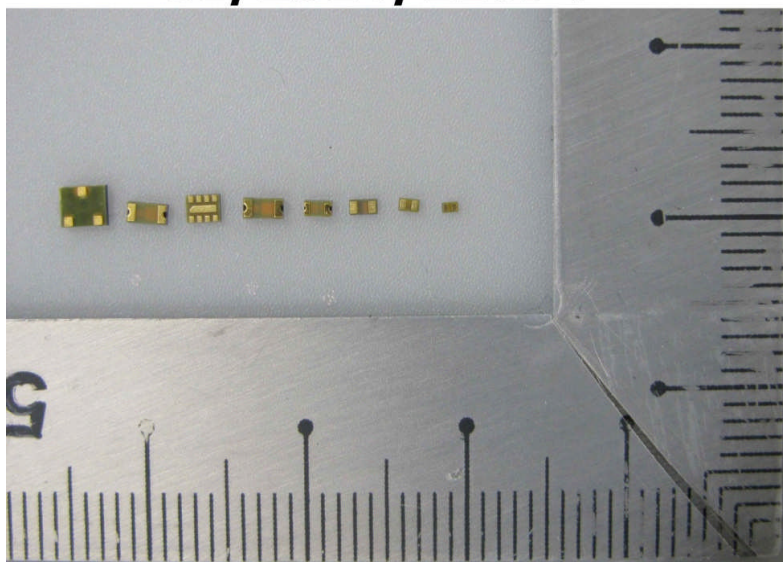


* The tested sample / part is marked by an arrow if it's shown on the photo. *

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