Test Report No.: 48.400.23.1087.01-00/15

Rev.: 00

Dated: 2023-11-10

Applicant:	Jiangsu Acrel Electrical Manufacturing. Co., Ltd.
Address:	No. 5, Dongmeng Road, Nanzha Street, Jiangyin, Jiangsu, P. R. China
Attn:	Han Zhonghua
Sample Description:	Motor Protector
Model No.:	ARD2M
Sample Received Date:	2023-10-12
Test Period:	2023-10-12~2023-10-27
Test Location:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch, SHA Chemical Lab.
Purpose of examination:	Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples
Test Results:	Refer to following page(s)
Remark:	- The result relates only to the items tested. - The reference model(s) was declared by client. - The test sample(s) and item(s) was specified by client.

TEC_WUX_F_25.05E – Rev. 00 2021-06-24

TüV SüD Certification and Testing (China) Co., Ltd.
TüV SüD Group

Prepared by: Reviewed by:

Mr. Yiwei CHEN Mr. Feng ZHANG

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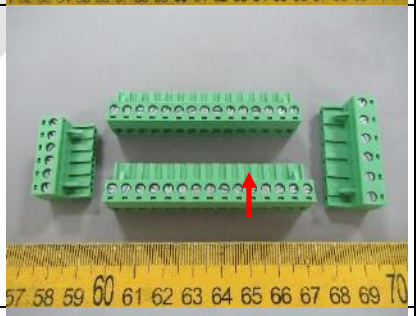
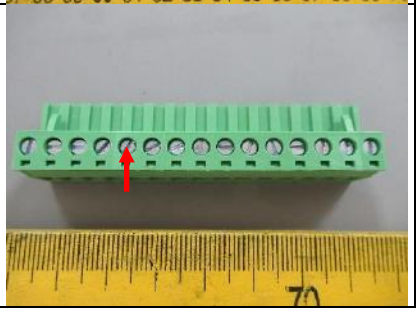
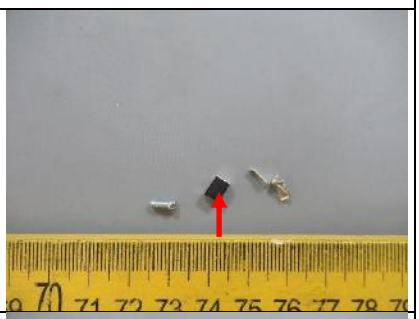
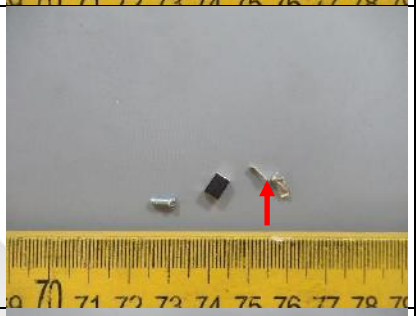
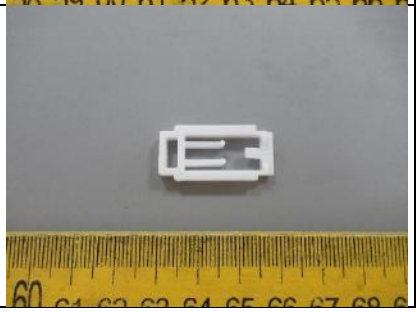
SUMMARY OF TEST RESULTS

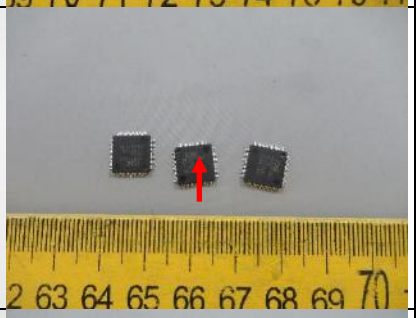
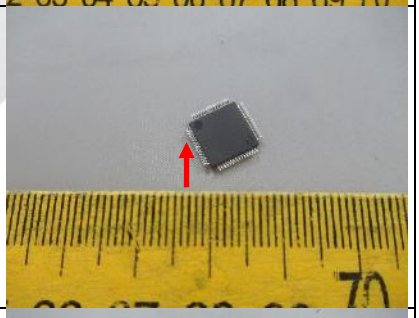
No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	**PASS**	
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	**PASS**	
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	**PASS**	

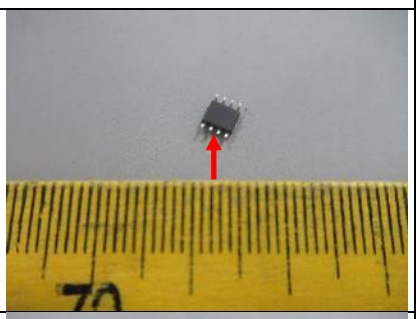
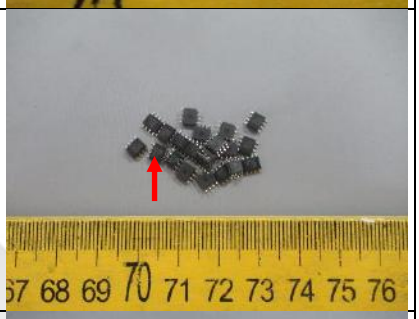
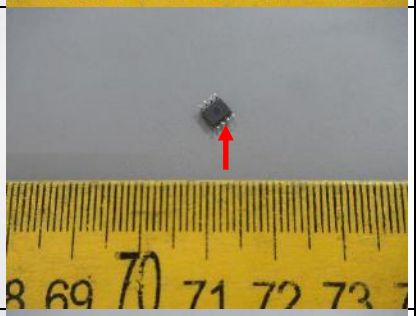
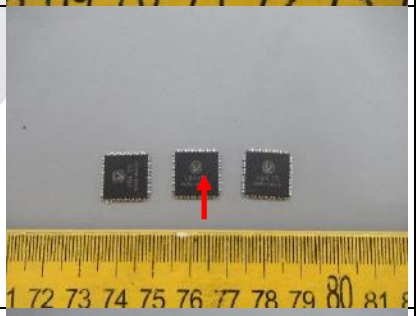
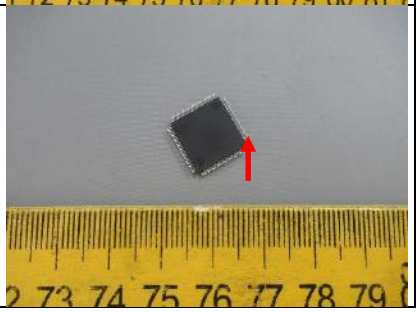
1. TESTED SUBJECT DESCRIPTION

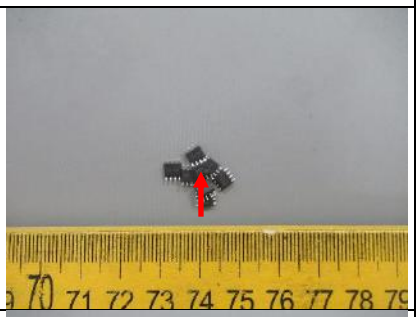
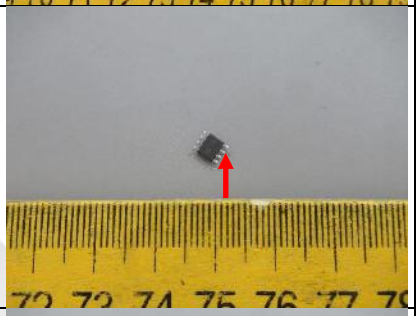
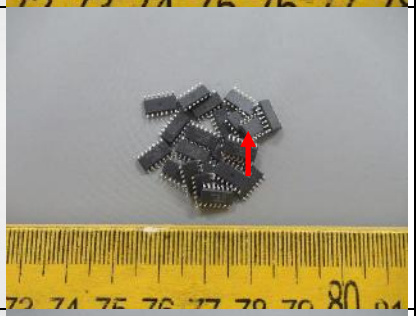
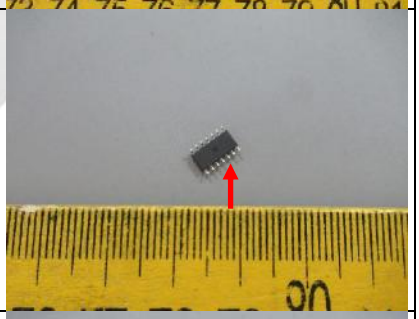
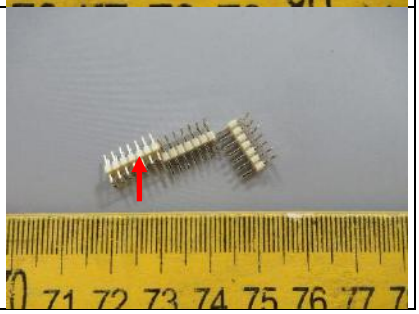
Sample No.	Description (Material, colour)	Photograph/Location
01	Orange soft plastic button	
02	Gray soft plastic panel	
03	Silvery soft plastic label	
04	Green hard plastic frame	
05	Silvery metal screw	

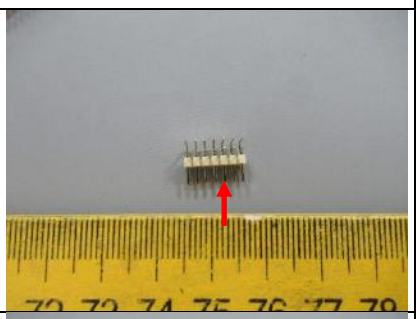
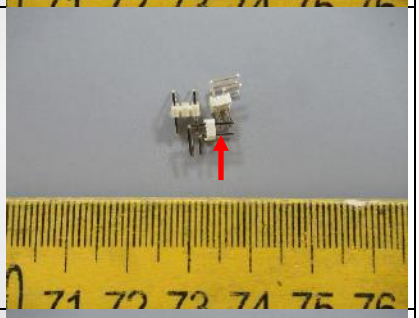
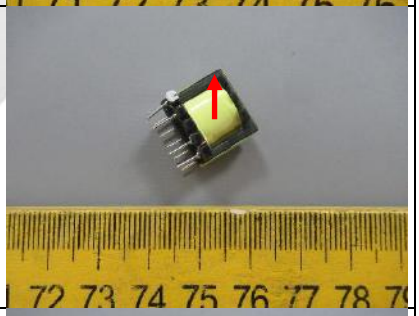
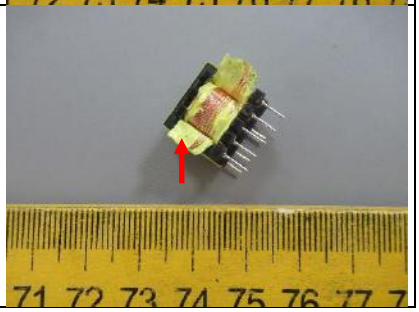
Sample No.	Description (Material, colour)	Photograph/Location
06	Silvery copper alloy block	
07	Silvery metal pin	
08	Gray hard plastic shell	
09	Transparent hard plastic bracket	
10	White hard plastic bracket	

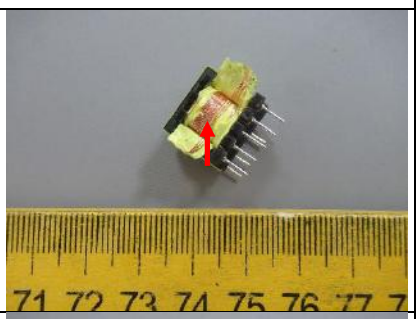
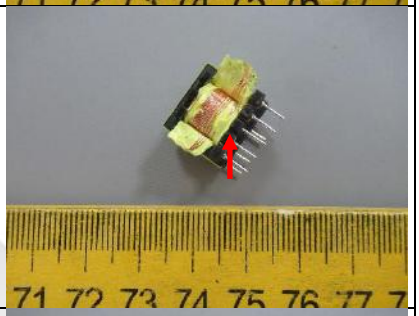
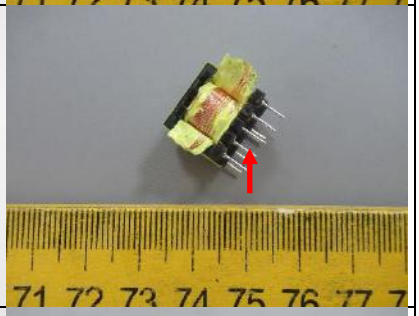
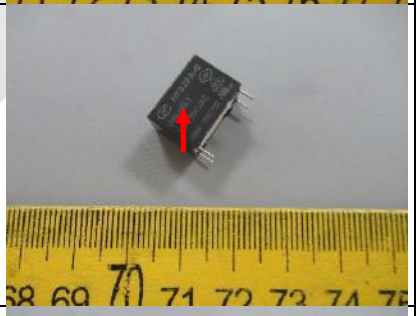
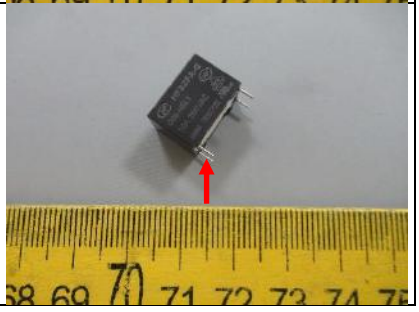
Sample No.	Description (Material, colour)	Photograph/Location
11	Transparent hard plastic frame	
12	Black chip resistor	
13	Black chip resistor	
14	Black chip resistor	
15	Brown chip capacitor	

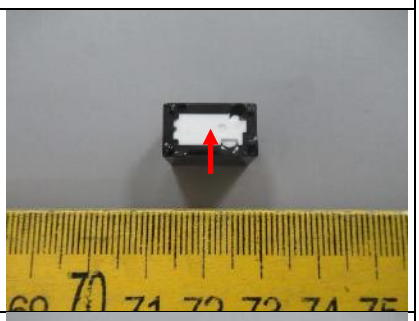
Sample No.	Description (Material, colour)	Photograph/Location
16	Yellow chip capacitor	
17	Silvery metal crystal oscillator	
18	Black hard IC	
19	Silver metal pin	
20	Black hard IC	

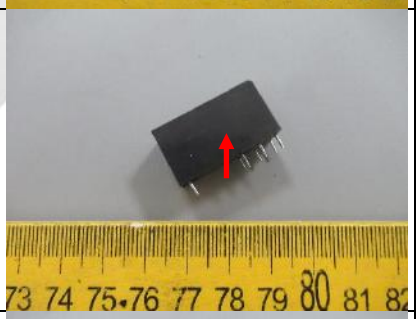
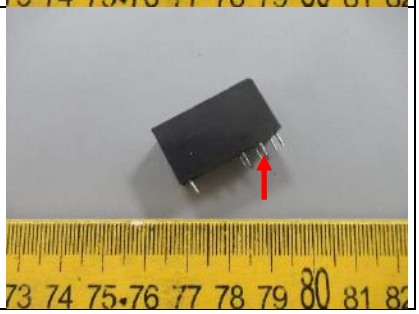
Sample No.	Description (Material, colour)	Photograph/Location
21	Silver metal pin	
22	Black hard IC	
23	Silver metal pin	
24	Black hard IC	
25	Silver metal pin	

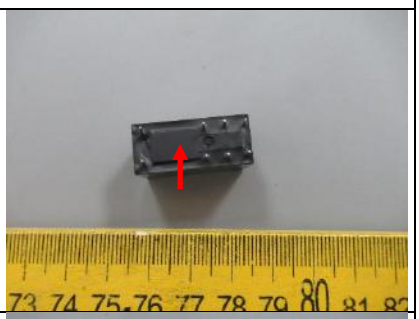
Sample No.	Description (Material, colour)	Photograph/Location
26	Black hard IC	
27	Silver metal pin	
28	Black hard IC	
29	Silver metal pin	
30	Beige hard plastic bracket	

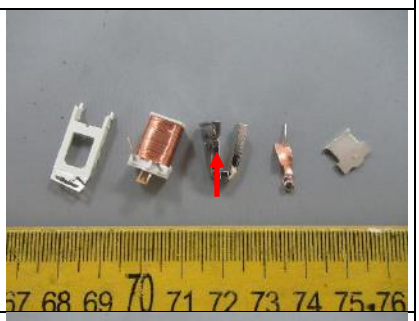
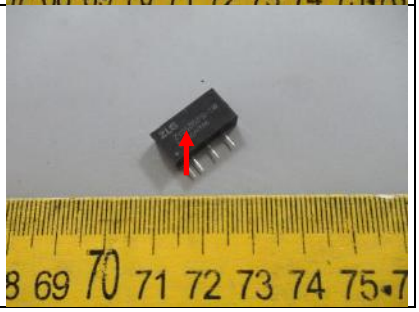
Sample No.	Description (Material, colour)	Photograph/Location
31	Golden metal pin	
32	Beige hard plastic bracket	
33	Golden metal pin	
34	Black metal magnet	
35	Yellow soft plastic adhesive tape	

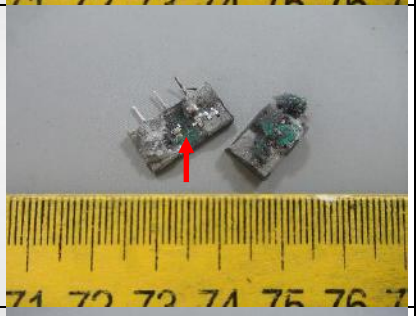
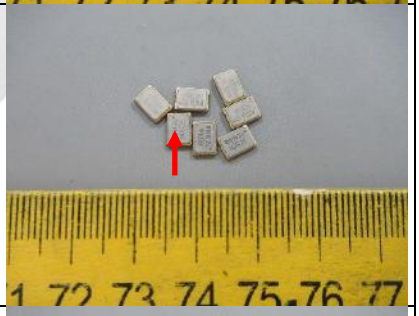
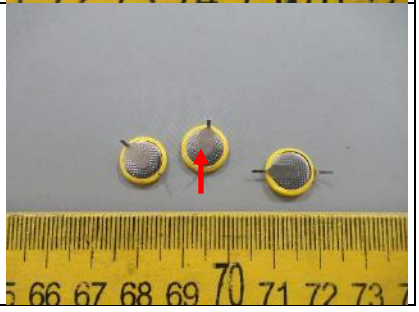
Sample No.	Description (Material, colour)	Photograph/Location
36	Golden metal wire	
37	Black hard plastic bracket	
38	Silver metal pin	
39	Black hard plastic shell	
40	Silver metal pin	

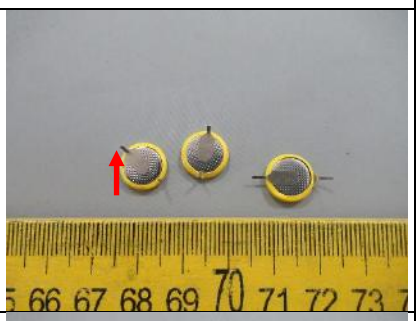
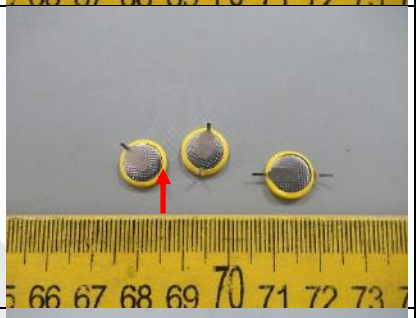
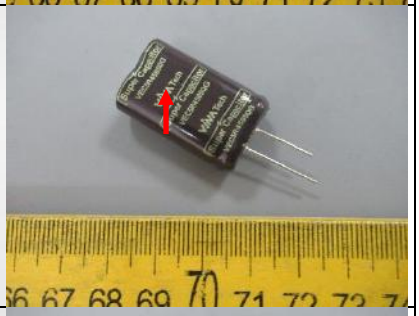
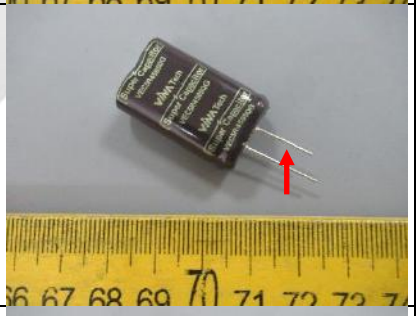
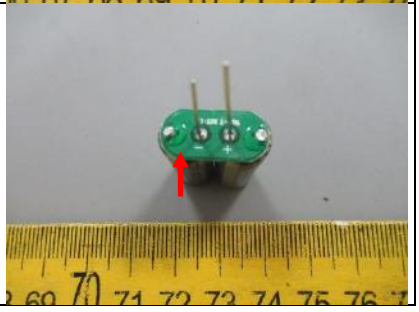
Sample No.	Description (Material, colour)	Photograph/Location
41	White hard plastic base	
42	Beige hard plastic frame	
43	Golden metal slice	
44	Silver alloy contact	
45	Silvery metal bracket	

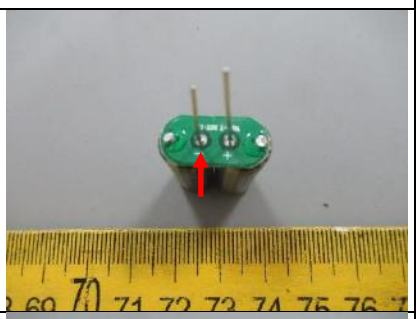
Sample No.	Description (Material, colour)	Photograph/Location
46	Silvery metal bracket	
47	Golden metal wire	
48	Black hard plastic bracket	
49	Black hard plastic shell	
50	Silver metal pin	

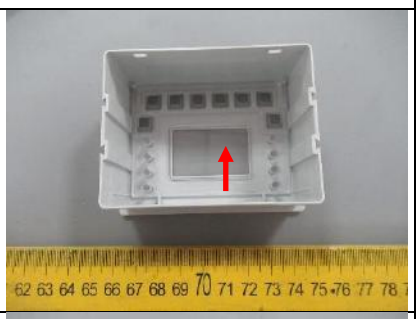
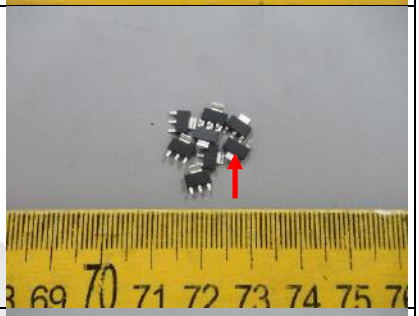
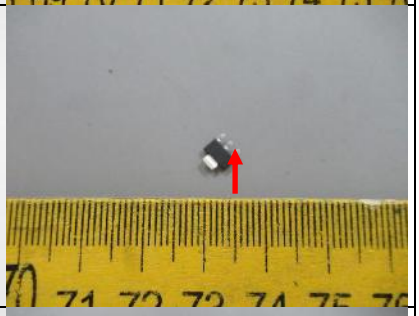
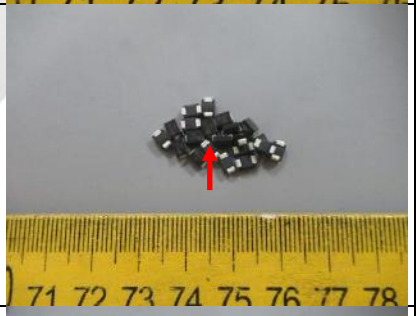
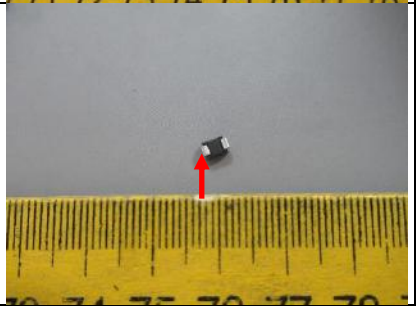
Sample No.	Description (Material, colour)	Photograph/Location
51	Black hard plastic base	
52	Beige hard plastic bracket	
53	Golden metal wire	
54	White hard plastic bracket	
55	Silvery metal pin	

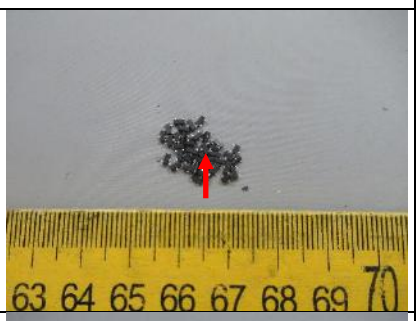
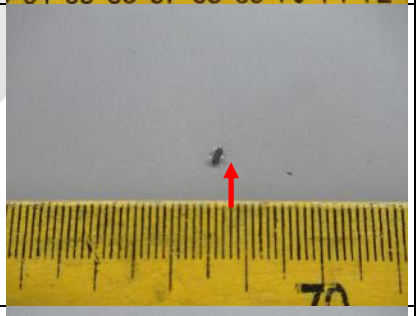
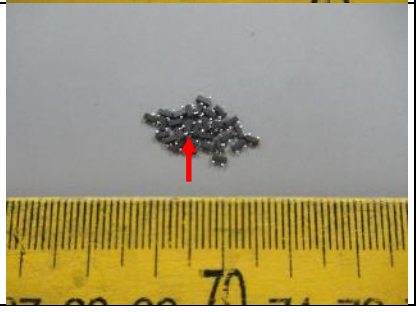
Sample No.	Description (Material, colour)	Photograph/Location
56	Silvery metal bracket	
57	Golden metal slice	
58	Silver alloy contact	
59	Silvery metal slice	
60	Black hard plastic shell	

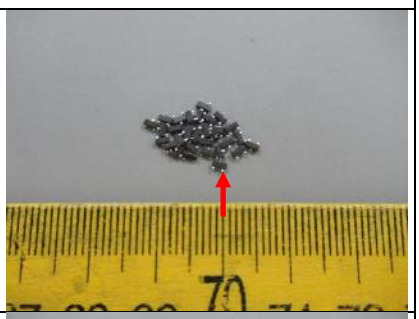
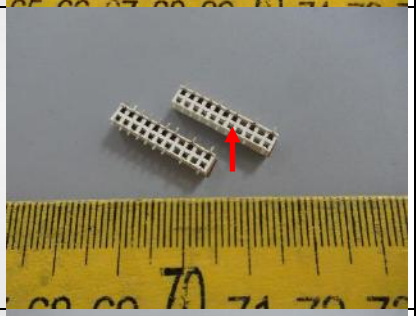
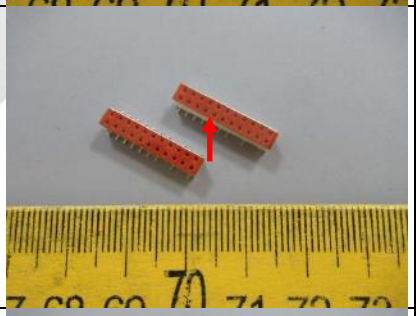
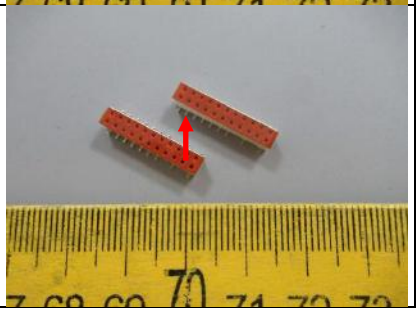
Sample No.	Description (Material, colour)	Photograph/Location
61	Black hard potting compound	
62	Silver metal pin	
63	Green hard PCB	
64	Silvery metal crystal oscillator	
65	Silvery metal slice	

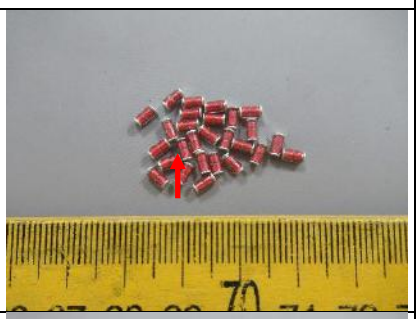
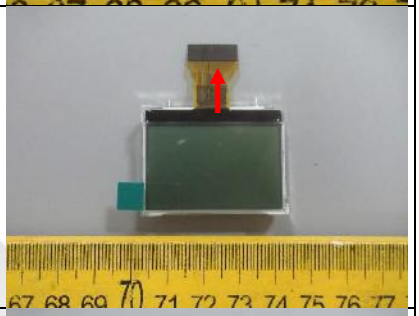
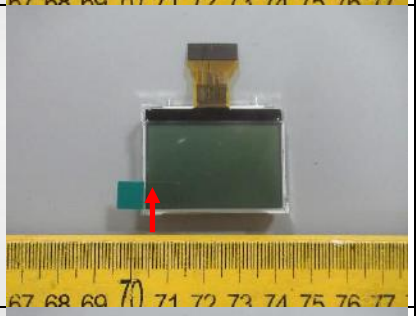
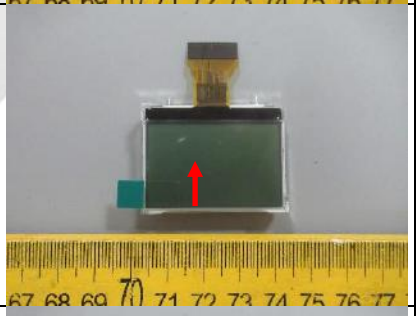
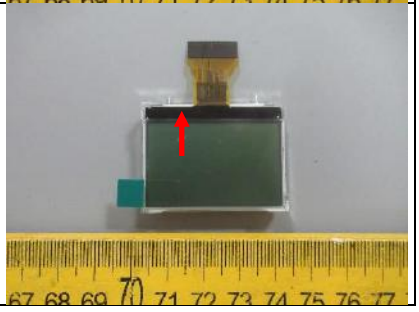
Sample No.	Description (Material, colour)	Photograph/Location
66	Silver metal pin	
67	Yellow soft plastic sheath	
68	Brown soft plastic sheath	
69	Silver metal pin	
70	Green hard PCB	

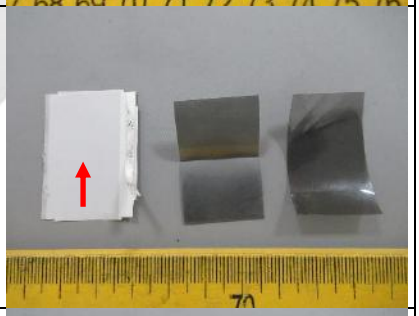
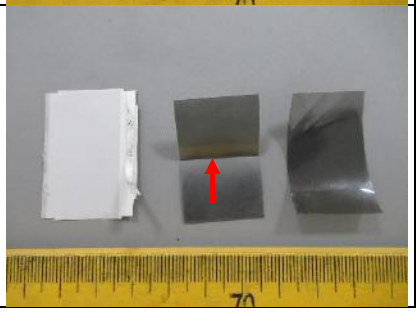
Sample No.	Description (Material, colour)	Photograph/Location
71	Silver metal solder	
72	Black rubber cushion	
73	White paper film	
74	Yellow soft plastic adhesive tape	
75	Silvery metal shell	

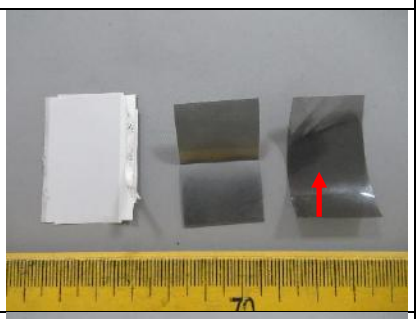
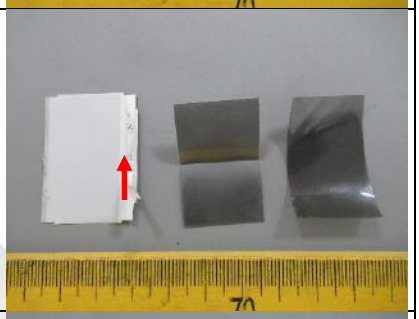
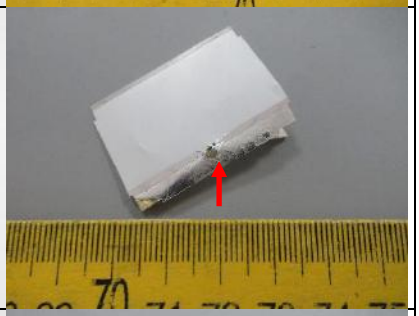
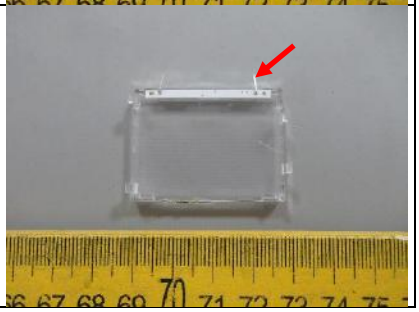
Sample No.	Description (Material, colour)	Photograph/Location
76	Transparent hard plastic cover	
77	Black hard IC	
78	Silver metal pin	
79	Black diode	
80	Silver metal pin	

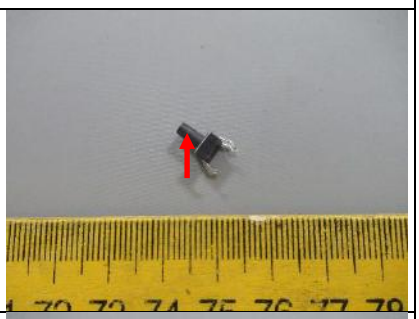
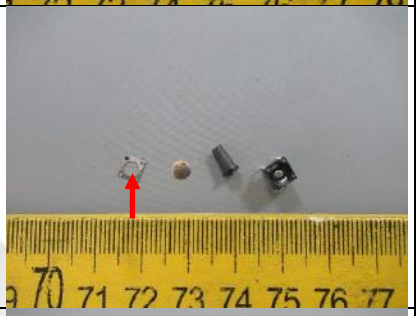
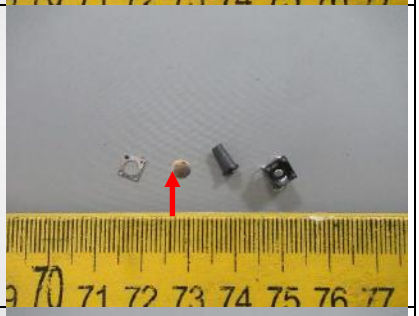
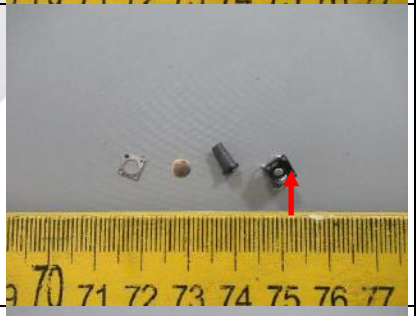
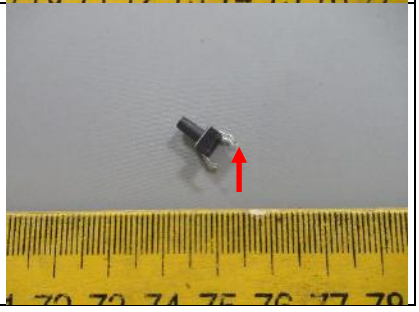
Sample No.	Description (Material, colour)	Photograph/Location
81	Black diode	
82	Beige hard LED	
83	Black triode	
84	Silver metal pin	
85	Black triode	

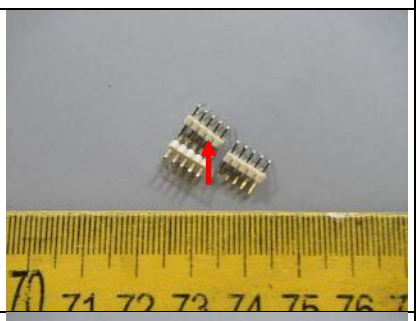
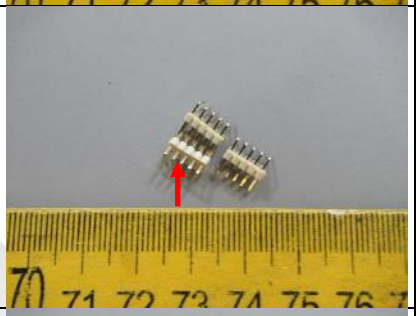
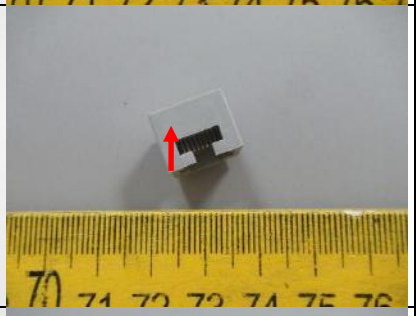
Sample No.	Description (Material, colour)	Photograph/Location
86	Silver metal pin	
87	Black hard IC	
88	Beige hard plastic bracket	
89	Orange soft plastic film	
90	Silver metal pin	

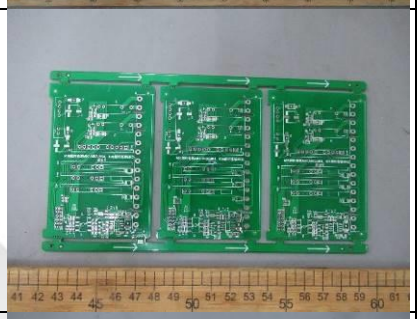
Sample No.	Description (Material, colour)	Photograph/Location
91	Red hard IC	
92	Yellow soft plastic wire harness	
93	Transparent soft plastic film	
94	Transparent hard plastic frequency screen	
95	Black glue	

Sample No.	Description (Material, colour)	Photograph/Location
96	White paper label	
97	White soft plastic film	
98	Silvery soft plastic film	
99	Translucent soft plastic film	
100	Gray soft plastic film	

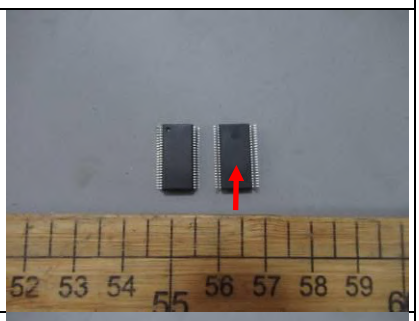
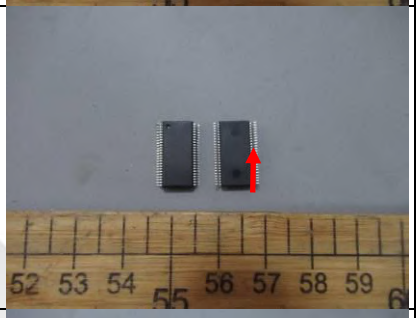
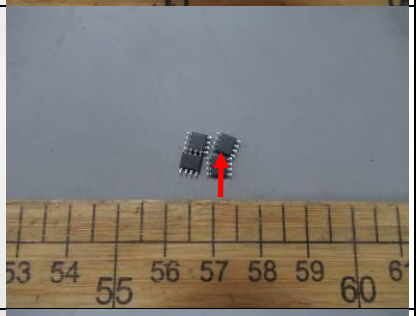
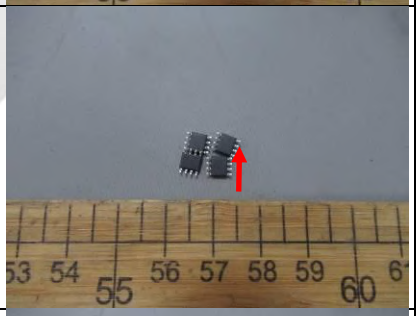
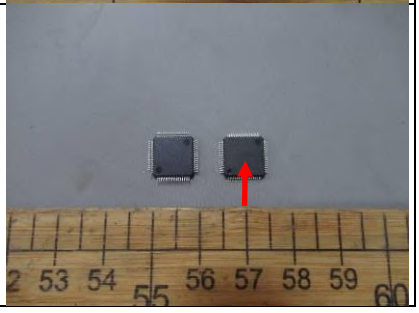
Sample No.	Description (Material, colour)	Photograph/Location
101	Transparent gray soft plastic film	
102	White adhesive tape	
103	Silvery soft plastic film	
104	Transparent hard plastic frame	
105	Silvery metal pin	

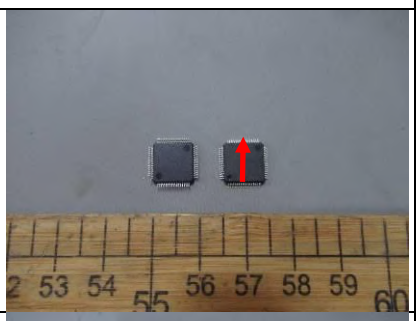
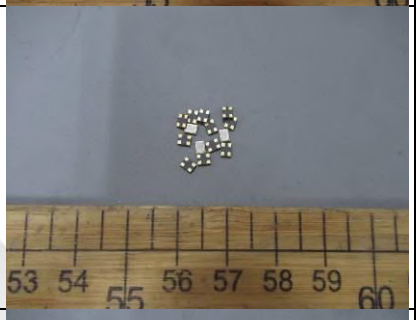
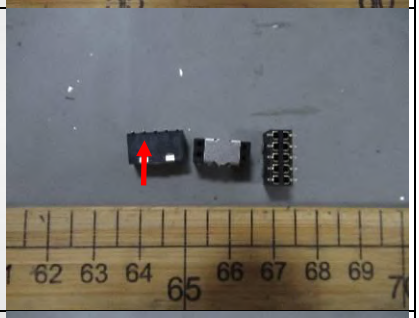
Sample No.	Description (Material, colour)	Photograph/Location
106	Black hard plastic button	
107	Silvery metal frame	
108	Silvery metal slice	
109	Black hard plastic base	
110	Silver metal pin	

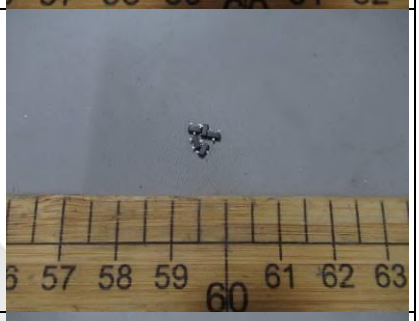
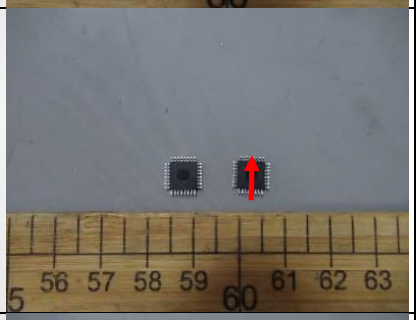
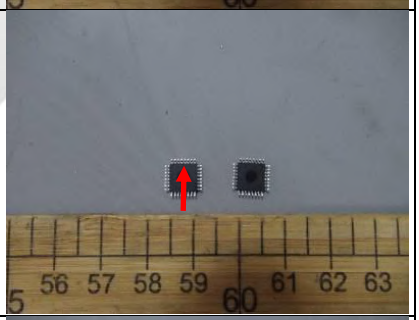
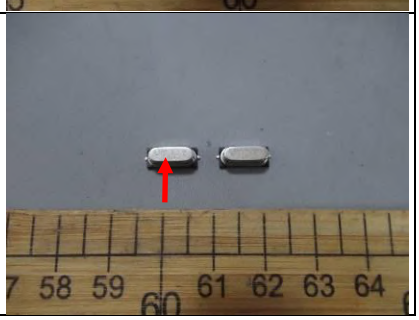
Sample No.	Description (Material, colour)	Photograph/Location
111	Beige hard plastic bracket	
112	Golden metal pin	
113	Gray hard plastic shell	
114	Golden metal pin	
115	Transparent soft plastic inflatable bag, CQD QT-13L237(96)(CQD-280*215-Q-01)	

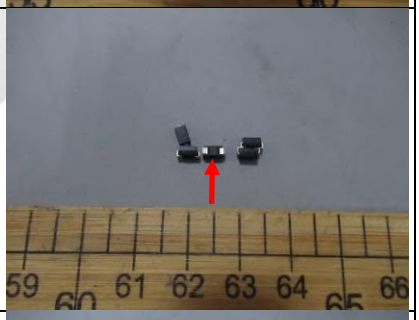
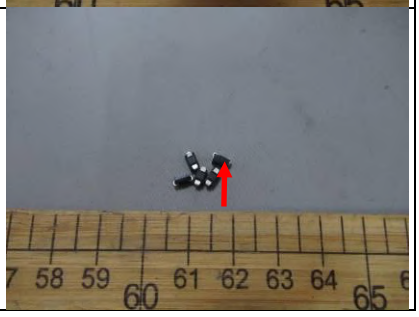
Sample No.	Description (Material, colour)	Photograph/Location
116	Brown paper packing box, B/ZH-170×150×125-J01(A)	
117	Green hard PCB, KB	
118	black resistance, CR_0603_0R_J	
119	black resistance, CR_0603_10k_F_100ppm	
120	Brown capacitor, CC_0603_0.1uF_50V	

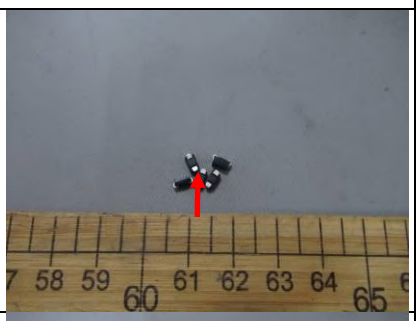
Sample No.	Description (Material, colour)	Photograph/Location
121	Brown capacitor, CC_0805_10uF_16V	
122	black resistance, RZ_10P8_10k_J	
123	Golden diode, LL4148-SMD	
124	Black triode, 9013	
125	Black hard IC, TLV70033DDCR	

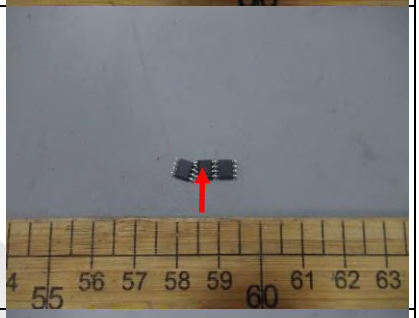
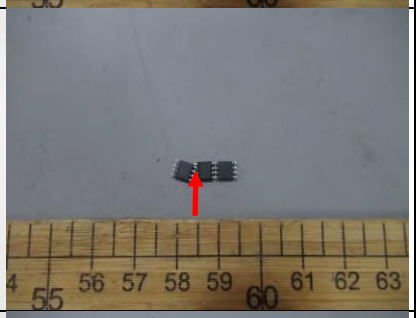
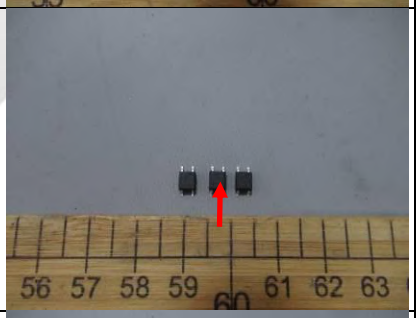
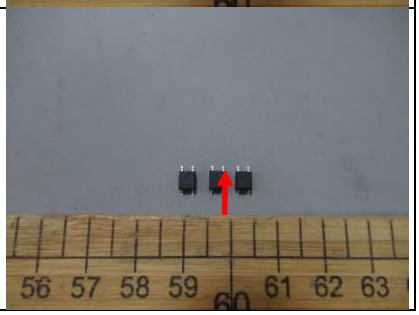
Sample No.	Description (Material, colour)	Photograph/Location
126	Black hard IC, HT1621B/HOLTEK	
127	Silver metal pin	
128	Black hard IC, MB85RC16	
129	Silver metal pin	
130	Black hard IC, STM32F401RCT6	

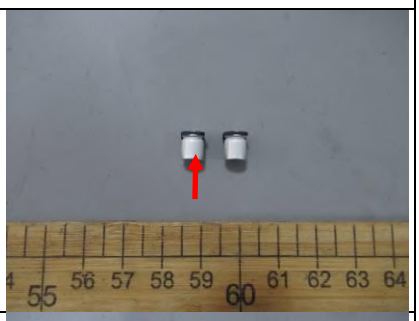
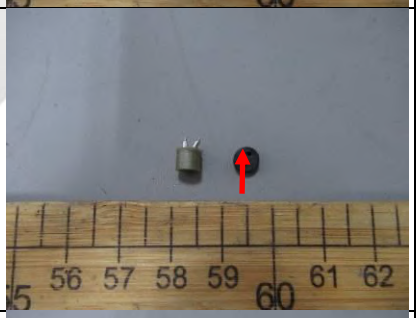
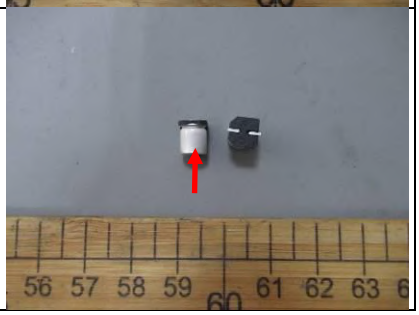
Sample No.	Description (Material, colour)	Photograph/Location
131	Silver metal pin	
132	Black hard IC, XN_3225_12MHz_20pF_20ppm	
133	Black hard plastic frame, 22N8572-10M00B-01G-6.7-C	
134	Silver metal pin	
135	Gray capacitor, CC_0603_2.2uF_25V	

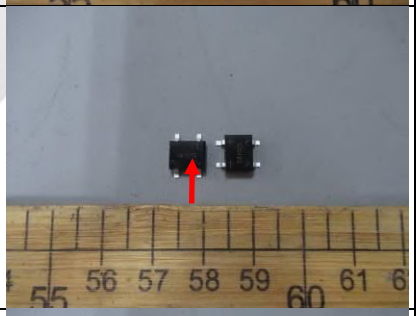
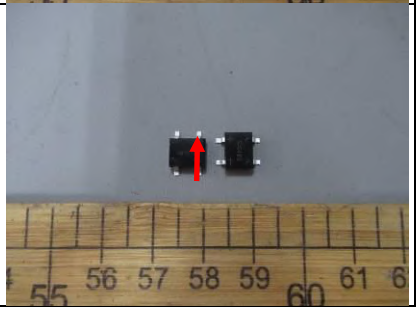
Sample No.	Description (Material, colour)	Photograph/Location
136	Black metal magnetic beads FB_0603_100mA_1k	
137	Black diode, BAV199LT1G	
138	Black hard IC, RN7302	
139	Silver metal pin	
140	Silvery metal crystal oscillator, XN_SMD49_8.192MHz_20pF_20ppm	

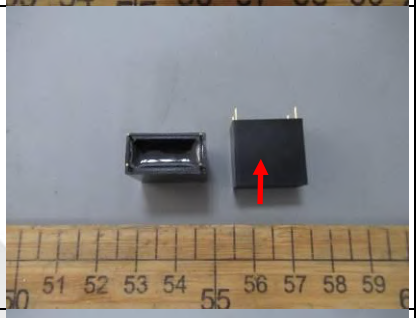
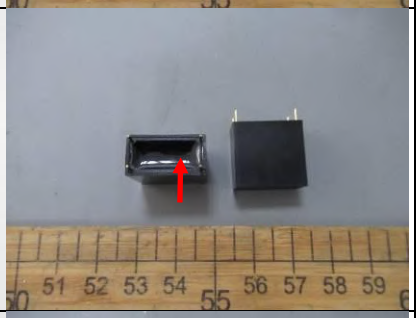
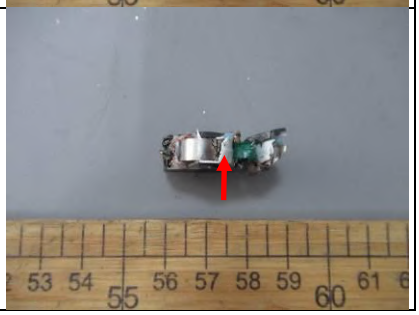
Sample No.	Description (Material, colour)	Photograph/Location
141	Silver metal pin	
142	Black hard plastic cover	
143	Black triode, 8050-SMD	
144	Black diode, RS1D	
145	Silver metal pin	

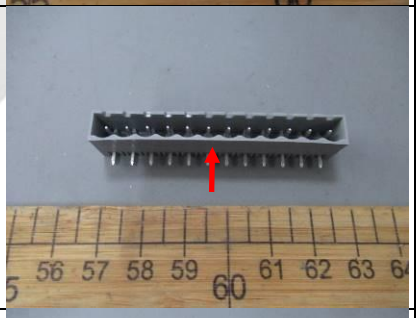
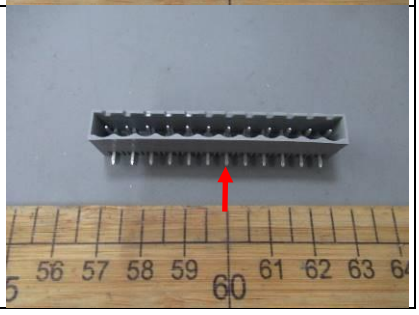
Sample No.	Description (Material, colour)	Photograph/Location
146	Black diode, SS310-SMD	
147	Black diode, SMAJ5.0A	
148	Silver metal pin	
149	Black hard IC, AMS431AM(BM)-SMD	
150	Black hard IC, 78L05-SMD(KIA78L05)LM78L05F)	

Sample No.	Description (Material, colour)	Photograph/Location
151	Silver metal pin	
152	Black hard IC, ISL3152EIBZ-T	
153	Silver metal pin	
154	Black optocoupler, LTV-356T-B	
155	Silver metal pin	

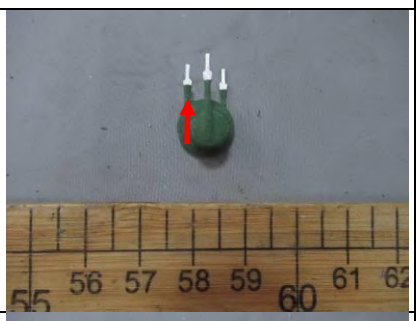
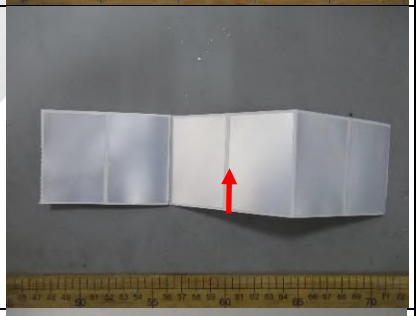
Sample No.	Description (Material, colour)	Photograph/Location
156	Silvery aluminum shell, CD_6.3X7.7_100uF_35V	
157	Silver metal pin	
158	Gray soft plastic film	
159	Black rubber cushion	
160	Silvery aluminum shell, CD_6.3X7.7_220uF_16V	

Sample No.	Description (Material, colour)	Photograph/Location
161	Black rubber cushion	
162	Gray soft plastic film	
163	Silver metal pin	
164	Black bridge chip, DB107S	
165	Silver metal pin	

Sample No.	Description (Material, colour)	Photograph/Location
166	Black inductance, PCD0503MT3R3(5.8*5.2*3 3.3μH 2.8A)(±20%)	
167	Black hard plastic current transformer, CT-E 5A:2.5mA	
168	Black hard plastic potting compound	
169	Silvery metal Iron core	
170	White hard plastic frame	

Sample No.	Description (Material, colour)	Photograph/Location
171	Blue soft plastic adhesive tape	
172	Black hard power chip, TNY286PG	
173	Silver metal pin	
174	Gray hard plastic socket, BCH-508HS-12	
175	Silver metal pin	

Sample No.	Description (Material, colour)	Photograph/Location
176	Green metal wave filter, 47 μ H/40m Ω	
177	Golden metal wire	
178	Translucent hard plastic plate	
179	Black hard plastic base	
180	Silver metal pin	

Sample No.	Description (Material, colour)	Photograph/Location
181	green resistance, RM-12D-55mA	
182	Silver metal pin	
183	Yellow soft plastic label	
184	Silvery soft plastic label	
185	Gray hard plastic shell	

Sample No.	Description (Material, colour)	Photograph/Location
186	Black hard plastic bracket	

2. TEST RESULT(S)

2.1 SCREENING TEST

Test method: With reference to EN 62321-1:2013, EN IEC 62321-2:2021, EN 62321-3-1:2014 and EN 62321-8:2017.
For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
01	BL	BL	BL	BL	BL	BL	BL	BL	BL
02	BL	BL	BL	BL	BL	BL	BL	BL	BL
03	BL	BL	BL	BL	BL	BL	BL	BL	BL
04	BL	BL	BL	BL	BL	BL	BL	BL	BL
05	BL	BL	BL	BL	NA	NA	NA	NA	NA
06	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
07	BL	BL	BL	BL	NA	NA	NA	NA	NA
08	BL	BL	BL	BL	BL	BL	BL	BL	BL
09	BL	BL	BL	BL	BL	BL	BL	BL	BL
10	BL	BL	BL	BL	BL	BL	BL	BL	BL
11	BL	BL	BL	BL	BL	BL	BL	BL	BL
12	BL	BL	BL	BL	BL	BL	BL	BL	BL
13	BL	Inc.[a]	BL	BL	BL	BL	BL	BL	BL
14	BL	BL	BL	BL	BL	BL	BL	BL	BL
15	BL	BL	BL	BL	BL	BL	BL	BL	BL
16	BL	BL	BL	BL	BL	BL	BL	BL	BL
17	BL	BL	BL	BL	NA	NA	NA	NA	NA
18	BL	BL	BL	BL	BL	BL	BL	BL	BL
19	BL	BL	BL	BL	NA	NA	NA	NA	NA
20	BL	BL	BL	BL	BL	BL	BL	BL	BL

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
21	BL	BL	BL	BL	NA	NA	NA	NA	NA
22	BL	BL	BL	BL	BL	BL	BL	BL	BL
23	BL	BL	BL	BL	NA	NA	NA	NA	NA
24	BL	BL	BL	BL	BL	BL	BL	BL	BL
25	BL	BL	BL	BL	NA	NA	NA	NA	NA
26	BL	BL	BL	BL	BL	BL	BL	BL	BL
27	BL	BL	BL	BL	NA	NA	NA	NA	NA
28	BL	BL	BL	BL	BL	BL	BL	BL	BL
29	BL	BL	BL	BL	NA	NA	NA	NA	NA
30	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
31	BL	BL	BL	BL	NA	NA	NA	NA	NA
32	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
33	BL	BL	BL	BL	NA	NA	NA	NA	NA
34	BL	BL	BL	BL	NA	NA	NA	NA	NA
35	BL	BL	BL	BL	BL	BL	BL	BL	BL
36	BL	BL	BL	BL	NA	NA	NA	NA	NA
37	BL	BL	BL	BL	BL	BL	BL	BL	BL
38	BL	BL	BL	BL	NA	NA	NA	NA	NA
39	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
40	BL	BL	BL	BL	NA	NA	NA	NA	NA
41	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
42	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
43	BL	BL	BL	BL	NA	NA	NA	NA	NA
44	BL	BL	BL	BL	NA	NA	NA	NA	NA

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
45	BL	BL	BL	BL	NA	NA	NA	NA	NA
46	BL	BL	BL	BL	NA	NA	NA	NA	NA
47	BL	BL	BL	BL	NA	NA	NA	NA	NA
48	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
49	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
50	BL	BL	BL	BL	NA	NA	NA	NA	NA
51	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
52	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
53	BL	BL	BL	BL	NA	NA	NA	NA	NA
54	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
55	BL	BL	BL	BL	NA	NA	NA	NA	NA
56	BL	BL	BL	BL	NA	NA	NA	NA	NA
57	BL	BL	BL	BL	NA	NA	NA	NA	NA
58	BL	BL	BL	BL	NA	NA	NA	NA	NA
59	BL	BL	BL	BL	NA	NA	NA	NA	NA
60	BL	BL	BL	BL	BL	BL	BL	BL	BL
61	BL	BL	BL	BL	BL	BL	BL	BL	BL
62	BL	BL	BL	BL	NA	NA	NA	NA	NA
63	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
64	BL	BL	BL	BL	NA	NA	NA	NA	NA
65	BL	BL	BL	**Inc.**[(a)]	NA	NA	NA	NA	NA
66	BL	BL	BL	**Inc.**[(a)]	NA	NA	NA	NA	NA
67	BL	BL	BL	BL	BL	BL	BL	BL	BL
68	BL	BL	BL	BL	BL	BL	BL	BL	BL

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
69	BL	BL	BL	BL	NA	NA	NA	NA	NA
70	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
71	BL	BL	BL	BL	NA	NA	NA	NA	NA
72	BL	BL	BL	BL	BL	BL	BL	BL	BL
73	BL	BL	BL	BL	BL	BL	BL	BL	BL
74	BL	BL	BL	BL	BL	BL	BL	BL	BL
75	BL	BL	BL	BL	NA	NA	NA	NA	NA
76	BL	BL	BL	BL	BL	BL	BL	BL	BL
77	BL	BL	BL	BL	BL	BL	BL	BL	BL
78	BL	BL	BL	BL	NA	NA	NA	NA	NA
79	BL	BL	BL	BL	BL	BL	BL	BL	BL
80	BL	BL	BL	BL	NA	NA	NA	NA	NA
81	BL	BL	BL	BL	BL	BL	BL	BL	BL
82	BL	BL	BL	BL	BL	BL	BL	BL	BL
83	BL	BL	BL	BL	BL	BL	BL	BL	BL
84	BL	BL	BL	BL	NA	NA	NA	NA	NA
85	BL	BL	BL	BL	BL	BL	BL	BL	BL
86	BL	BL	BL	BL	NA	NA	NA	NA	NA
87	BL	BL	BL	BL	BL	BL	BL	BL	BL
88	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
89	BL	BL	BL	BL	BL	BL	BL	BL	BL
90	BL	BL	BL	BL	NA	NA	NA	NA	NA
91	BL	**Inc.**[(a)]	BL	BL	BL	BL	BL	BL	BL
92	BL	BL	BL	BL	BL	BL	BL	BL	BL

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
93	BL	BL	BL	BL	BL	BL	BL	BL	BL
94	BL	BL	BL	BL	BL	BL	BL	BL	BL
95	BL	BL	BL	BL	BL	BL	BL	BL	BL
96	BL	BL	BL	BL	BL	BL	BL	BL	BL
97	BL	BL	BL	BL	BL	BL	BL	BL	BL
98	BL	BL	BL	BL	BL	BL	BL	BL	BL
99	BL	BL	BL	BL	BL	BL	BL	BL	BL
100	BL	BL	BL	BL	BL	BL	BL	BL	BL
101	BL	BL	BL	BL	BL	BL	BL	BL	BL
102	BL	BL	BL	BL	BL	BL	BL	BL	BL
103	BL	BL	BL	BL	BL	BL	BL	BL	BL
104	BL	BL	BL	BL	BL	BL	BL	BL	BL
105	BL	BL	BL	BL	NA	NA	NA	NA	NA
106	BL	BL	BL	BL	BL	BL	BL	BL	BL
107	BL	BL	BL	BL	NA	NA	NA	NA	NA
108	BL	BL	BL	**Inc.**[(a)]	NA	NA	NA	NA	NA
109	BL	BL	BL	BL	BL	BL	BL	BL	BL
110	BL	BL	BL	BL	NA	NA	NA	NA	NA
111	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
112	BL	BL	BL	BL	NA	NA	NA	NA	NA
113	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
114	BL	BL	BL	BL	NA	NA	NA	NA	NA
115	BL	BL	BL	BL	BL	BL	BL	BL	BL
116	BL	BL	BL	BL	BL	BL	BL	BL	BL

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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
117	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
118	BL	**Inc.[(a)]**	BL	BL	BL	BL	BL	BL	BL
119	BL	**Inc.[(a)]**	BL	BL	BL	BL	BL	BL	BL
120	BL	BL	BL	BL	BL	BL	BL	BL	BL
121	BL	BL	BL	BL	BL	BL	BL	BL	BL
122	BL	**Inc.[(a)]**	BL	BL	BL	BL	BL	BL	BL
123	BL	**Inc.[(a)]**	BL	BL	BL	BL	BL	BL	BL
124	BL	BL	BL	BL	BL	BL	BL	BL	BL
125	BL	BL	BL	BL	BL	BL	BL	BL	BL
126	BL	BL	BL	BL	BL	BL	BL	BL	BL
127	BL	BL	BL	BL	NA	NA	NA	NA	NA
128	BL	BL	BL	BL	BL	BL	BL	BL	BL
129	BL	BL	BL	BL	NA	NA	NA	NA	NA
130	BL	BL	BL	BL	BL	BL	BL	BL	BL
131	BL	BL	BL	BL	NA	NA	NA	NA	NA
132	BL	BL	BL	BL	BL	BL	BL	BL	BL
133	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
134	BL	BL	BL	**Inc.[(a)]**	NA	NA	NA	NA	NA
135	BL	BL	BL	BL	BL	BL	BL	BL	BL
136	BL	BL	BL	BL	NA	NA	NA	NA	NA
137	BL	BL	BL	BL	BL	BL	BL	BL	BL
138	BL	BL	BL	BL	BL	BL	BL	BL	BL
139	BL	BL	BL	BL	NA	NA	NA	NA	NA
140	BL	BL	BL	BL	NA	NA	NA	NA	NA

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
141	BL	BL	BL	BL	NA	NA	NA	NA	NA
142	BL	BL	BL	BL	BL	BL	BL	BL	BL
143	BL	BL	BL	BL	BL	BL	BL	BL	BL
144	BL	BL	BL	BL	BL	BL	BL	BL	BL
145	BL	BL	BL	BL	NA	NA	NA	NA	NA
146	BL	BL	BL	BL	BL	BL	BL	BL	BL
147	BL	BL	BL	BL	BL	BL	BL	BL	BL
148	BL	BL	BL	BL	NA	NA	NA	NA	NA
149	BL	BL	BL	BL	BL	BL	BL	BL	BL
150	BL	BL	BL	BL	BL	BL	BL	BL	BL
151	BL	BL	BL	BL	NA	NA	NA	NA	NA
152	BL	BL	BL	BL	BL	BL	BL	BL	BL
153	BL	BL	BL	BL	NA	NA	NA	NA	NA
154	BL	BL	BL	BL	BL	BL	BL	BL	BL
155	BL	BL	BL	BL	NA	NA	NA	NA	NA
156	BL	BL	BL	BL	NA	NA	NA	NA	NA
157	BL	BL	BL	BL	NA	NA	NA	NA	NA
158	BL	BL	BL	BL	BL	BL	BL	BL	BL
159	BL	BL	BL	BL	BL	BL	BL	BL	BL
160	BL	BL	BL	BL	NA	NA	NA	NA	NA
161	BL	BL	BL	BL	BL	BL	BL	BL	BL
162	BL	BL	BL	BL	BL	BL	BL	BL	BL
163	BL	BL	BL	BL	NA	NA	NA	NA	NA
164	BL	BL	BL	BL	BL	BL	BL	BL	BL

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
165	BL	BL	BL	BL	NA	NA	NA	NA	NA
166	BL	BL	BL	BL	NA	NA	NA	NA	NA
167	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
168	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
169	BL	BL	BL	BL	NA	NA	NA	NA	NA
170	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
171	BL	BL	BL	BL	BL	BL	BL	BL	BL
172	BL	BL	BL	BL	BL	BL	BL	BL	BL
173	BL	BL	BL	BL	NA	NA	NA	NA	NA
174	BL	BL	BL	BL	BL	BL	BL	BL	BL
175	BL	BL	BL	BL	NA	NA	NA	NA	NA
176	BL	BL	BL	BL	NA	NA	NA	NA	NA
177	BL	BL	BL	BL	NA	NA	NA	NA	NA
178	BL	BL	BL	BL	BL	BL	BL	BL	BL
179	BL	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL
180	BL	BL	BL	BL	NA	NA	NA	NA	NA
181	BL	BL	BL	**Inc.[(a)]**	BL	BL	BL	BL	BL
182	BL	BL	BL	BL	NA	NA	NA	NA	NA
183	BL	BL	BL	BL	BL	BL	BL	BL	BL
184	BL	BL	BL	BL	BL	BL	BL	BL	BL
185	BL	BL	BL	BL	BL	BL	BL	BL	BL
186	BL	BL	BL	BL	BL	BL	BL	BL	BL

Remark:

- "BL" denotes below limit
- "OL" denotes over limit
- "Inc." denotes inconclusive
- "NA" denotes not applicable
- "(a)" denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.
- XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	X≤(70-3σ)	(70-3σ)<X<(130+3σ)	X≥(130+3σ)
Pb	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Hg	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Br	X≤(300-3σ)	X>(300-3σ)	NA
Cr	X≤(700-3σ)	X>(700-3σ)	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	X≤(70-3σ)	(70-3σ)<X<(130+3σ)	X≥(130+3σ)
Pb	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Hg	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Cr	X≤(700-3σ)	X>(700-3σ)	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	X≤(50-3σ)	(50-3σ)<X<(150+3σ)	X≥(150+3σ)
Pb	X≤(500-3σ)	(500-3σ)<X<(1500+3σ)	X≥(1500+3σ)
Hg	X≤(500-3σ)	(500-3σ)<X<(1500+3σ)	X≥(1500+3σ)
Br	X≤(250-3σ)	X>(250-3σ)	NA
Cr	X≤(500-3σ)	X>(500-3σ)	NA

- Screening limits in mg/kg for regulated phthalates in various matrices

PHTHALATES	BL	INCONCLUSIVE
DEHP	X<600	X≥ 600
BBP	X<600	X≥ 600
DBP	X<600	X≥ 600
DIBP	X<600	X≥ 600

2.2 HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014 /A1:2017, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321-7-2:2017, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Ultraviolet–visible spectrophotometer (UV-Vis).
[Reporting Limit: 2.0 mg/kg for Cadmium; 5.0 mg/kg or 0.10 µg/cm² for Hexavalent Chromium, 10.0 mg/kg for Lead and Mercury.]

Sample No.	Result(s)				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
06	--	--	--	--	**28978.0[(c)]**
13	--	--	--	--	**2560.0[(d)]**
65	--	/	Negative	--	--
66	--	/	Negative	--	--
91	--	--	--	--	**1161.0[(d)]**
108	--	/	Negative	--	--
118	--	--	--	--	**606**
119	--	--	--	--	**1915.[(d)]**
122	--	--	--	--	**1087.[(d)]**
123	--	--	--	--	**1148.0[(d)]**
134	--	/	Negative	--	--
181	--	<5	/	--	--
Unit	mg/kg	mg/kg	µg/cm²	mg/kg	mg/kg
RoHS Requirement	100	1000	Negative[#]	1000	1000

Remark:

- "mg/kg" denotes milligram per kilogram
- "µg/cm²" denotes micrograms per square centimeter
- "<" denotes less than
- "Positive" denotes the absorbance value of sample is > 0.13 µg/cm², the sample is considered to be positive for Hexavalent Chromium.
- "Inconclusive" denotes the absorbance value of sample is ≥ 0.10 µg/cm² and ≤ 0.13 µg/cm², the sample is considered to be Inconclusive for Hexavalent Chromium.
- "Negative" denotes the absorbance value of sample is < 0.10 µg/cm², the sample is considered to be negative for Hexavalent Chromium.
- "[#]" According to DIRECTIVE 2011/65/EU Article 4(1) and Annex II. While, positive means the presence of CrVI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1) and Annex II.
- "--" denotes tested by XRF, result is listed in 2.1
- "[(c)]" denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 6(c) Copper alloy containing up to 4 % lead by weight".
- "[(d)]" denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 7(c)-I "Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound".

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		30	32	39	41	42	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	Sum of detected PBBs	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Sum of detected PBDEs	<50	<50	<50	<50	<50	1000

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		48	49	51	52	54	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	Sum of detected PBBs	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Sum of detected PBDEs	<50	<50	<50	<50	<50	1000

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		63	70	88	111	113	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	Sum of detected PBBs	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Sum of detected PBDEs	<50	<50	<50	<50	<50	1000

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		117	133	167	168	170	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	Sum of detected PBBs	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Sum of detected PBDEs	<50	<50	<50	<50	<50	1000

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]	RoHS Requirement [mg/kg]
		179	
PBBs	Monobromobiphenyl	<5	-
	Dibromobiphenyl	<5	-
	Tribromobiphenyl	<5	-
	Tetrabromobiphenyl	<5	-
	Pentabromobiphenyl	<5	-
	Hexabromobiphenyl	<5	-
	Heptabromobiphenyl	<5	-
	Octabromobiphenyl	<5	-
	Nonabromobiphenyl	<5	-
	Decabromobiphenyl	<5	-
	Sum of detected PBBs	<50	1000
PBDEs	Monobromodiphenyl ether	<5	-
	Dibromodiphenyl ether	<5	-
	Tribromodiphenyl ether	<5	-
	Tetrabromodiphenyl ether	<5	-
	Pentabromodiphenyl ether	<5	-
	Hexabromodiphenyl ether	<5	-
	Heptabromodiphenyl ether	<5	-
	Octabromodiphenyl ether	<5	-
	Nonabromodiphenyl ether	<5	-
	Decabromodiphenyl ether	<5	-
	Sum of detected PBDEs	<50	1000

Remark:

- "mg/kg" denotes milligram per kilogram
- "<" denotes less than

APPENDIX I: Product Model

Product: Motor Protector	Test model: ARD2M
	
Additional model: ARD3, ARD3M, ARD2F, ARD2, ARD2L, ARD2F(II), ALP300, ALP220, ALP200, 3UE7	

Remark:
1. The report covers material testing on specified samples.
2. The tested materials covered by the report were declared by the manufacturer to be used on the additional model.

--END OF REPORT--