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Client: RF ONE ELECTRONICS

Contact Information: Fl.6, #1 Bldg, Creative Park of University Town, Nanshan District, Shenzhen, Guangdong, P. R. China

Test item(s): 9 materials

Identification/ RF COAX FIXED ATTENUATOR

Model No(s): RFH & RFHB SERIES

Sample Receiving date: 2020-04-30

Testing Period: 2020-05-13 to 2020-05-15

Test Specification: **Test result:**

- 1. Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE), ROHS Phthalates (BBP, DBP, DEHP, DIBP) PASS
According to RoHS(recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU Annex II and its amendment Directive (EU) 2015/863

Other information:

Sample information is provided by customer.

Country of Origin: China

For and on behalf of
TÜV Rheinland (Shenzhen) Co., Ltd.



2020-05-19

Debbie Zhou / Engineer

Date

Name/Position

*Test result is drawn according to the kind and extent of tests performed.
This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.*

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Material List:

Item: RF COAX FIXED ATTENUATOR
RFH & RFHB SERIES

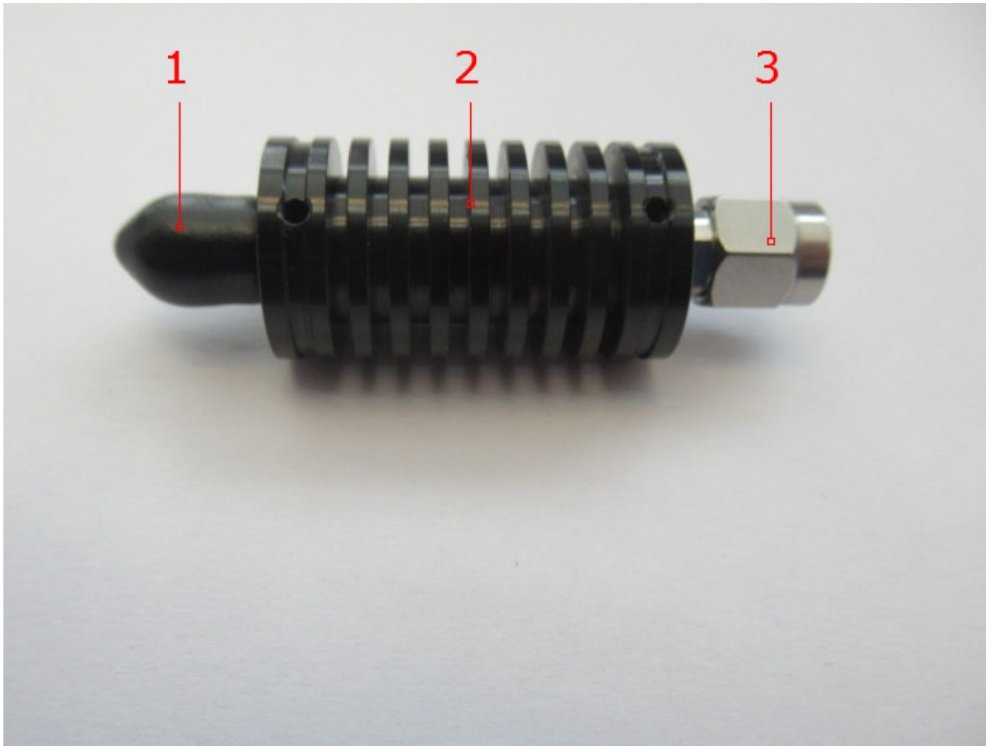
Material No.	Material	Color	Location
M001	Plastic	Black	Refer to photo
M002	Metal + plating	Silvery/ black	Refer to photo
M003	Metal	Silvery	Refer to photo
M004	Metal	Golden	Refer to photo
M005	Plastic	White	Refer to photo
M006	Plastic	Dark red	Refer to photo
M007	Metal + plating	Silvery/ black	Refer to photo
M008	Ceramic	White/ black	Refer to photo
M009	Metal	Silvery	Refer to photo

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1. Screening Test by XRF spectroscopy

 Test Method: Cadmium, Lead, Mercury, Chromium, Bromine
 -- With reference to IEC 62321-3-1:2013

Test Result:


Material No.	Cd	Cr	Pb	Hg	Br
M001	< RL	< RL	< RL	< RL	< RL
M002	< RL	d(*3)	< RL	< RL	n.a.
M003	< RL	d(*3)	< RL	< RL	n.a.

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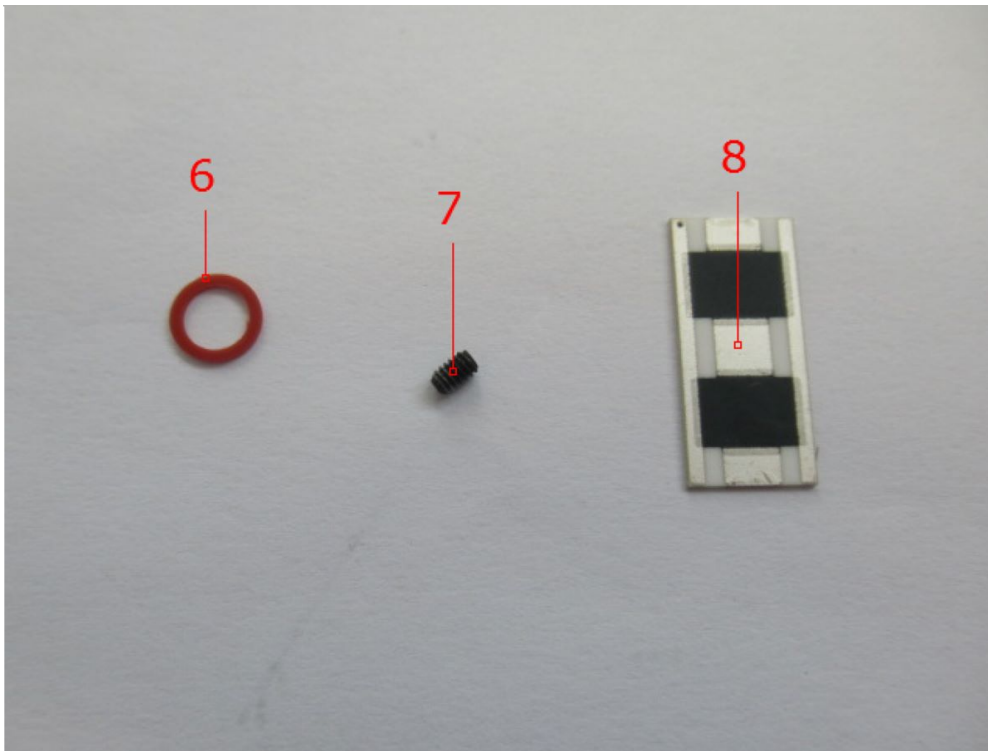
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Material No.	Cd	Cr	Pb	Hg	Br
M004	< RL	d(*3)	< RL	< RL	n.a.
M005	< RL	< RL	< RL	< RL	< RL

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Material No.	Cd	Cr	Pb	Hg	Br
M006	< RL	< RL	< RL	< RL	< RL
M007	< RL	d(*3)	< RL	< RL	n.a.
M008	< RL	< RL	< RL	< RL	< RL



Material No.	Cd	Cr	Pb	Hg	Br
M009	< RL	d(*3)	< RL	< RL	n.a.

Abbreviation: Pb = Lead
 Cd = Cadmium
 Hg = Mercury
 Cr = Chromium
 Br = Bromine
 n.a. = not applicable
 < = less than
 RL = Reporting Limit
 d.= detected

Material No.	Boiling-water-extraction for Cr(VI) (*3)
M002	negative
M003	negative
M004	negative
M007	negative
M009	negative

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Remark:

- (*3) For metal sample, the Chromium (VI) content has been confirmed with reference to IEC 62321-7-1:2015.
- (*7) Component(s)/ materials(s) with an area of less than 2mm x2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason.
For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material.
Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production.
All other materials will be sampled and tested at one test point representatively.
- (*8) The Chromium (Cr) and Bromine (Br) in the above result table indicate the total chromium and total bromine by means of XRF screening.
PBBs, or PBDEs content shall be further confirmed with reference to IEC 62321-6:2015.
Chromium (VI) shall be further confirmed with reference to IEC 62321-7-1:2015, IEC 62321-7-2:2017 or EN ISO 17075-1:2017.

XRF Screening limits for different matrices :

Material	Concentration (%)				
	Cd	Cr	Pb	Hg	Br
Metallic	P≤0.006<X≤0.014<F	P≤0.064<X	P≤0.067<X≤0.133<F	P≤0.066<X≤0.134<F	NA
Polymeric	P≤0.006<X≤0.014<F	P≤0.064<X	P≤0.067<X≤0.133<F	P≤0.066<X≤0.134<F	P≤0.029<X
Electronic Components	P≤0.004<X≤0.016<F	P≤0.044<X	P≤0.047<X≤0.153<F	P≤0.046<X≤0.154<F	P≤0.024<X

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BBP, DBP, DEHP, DIBP content

Test Method: IEC 62321-8:2017

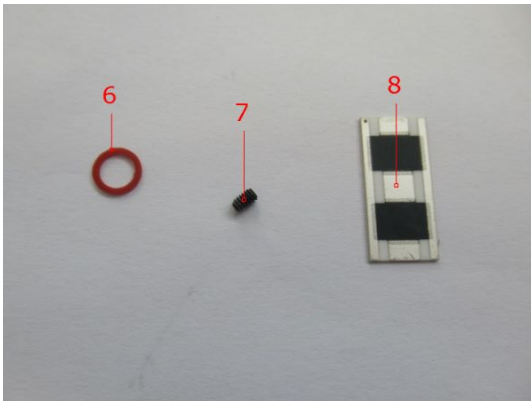
Test Result:

	BBP	DBP	DEHP	DIBP
Maximum permissible Limit (%)	0.1	0.1	0.1	0.1

Test No.	Material No.	(%)			
		BBP	DBP	DEHP	DIBP
		RL (%)			
		0.005	0.005	0.005	0.005
T001	M001 + M005 + M006	< RL	< RL	< RL	< RL

Abbreviation: BBP= Benzylbutyl phthalate
 DBP= Dibutyl phthalate
 DEHP= Bis(2-ethylhexyl) phthalate
 DIBP= Diisobutyl phthalate
 < = less than
 RL = Reporting Limit
 N.A. = Not Applicable
 %= percentage

Sample Photos



Product

- END -

