PART SPECIFICATION SHEETS

PART NUMBER : RV-MZA406WRZZ

PART NAME : MAGNETRON (New 2M240H(L)-D)

VENDOR : TOSHIBA HOKUTO ELECTRONICS CORPORATION

MANUFACTURER : TOSHIBA HOKUTO ELECTRONICS CORPORATION

APPLICABLE MODEL NO. : OTC model etc

REVISION : △

SHARP CORP.

APPROVEL 藤井部長

APPROVED DATE 27 APR 1 2016

SHARP CORPORATION ENG. DEPT. I APR. 27. 2016 ISSUED SMALL APPLIANCE B.U.

MODEL		PART		SAFETY	
木村TL	K.KIMURA	井上TL		本川KKCO	
上井KKCO		後藤SJ	I.GOTO		
後藤SJ	I.GOTO	下田	H.Shimoda		

SMCA	SUKM	SATL	SDB
APPROVAL :			
APPROVED DATE : / /	27/04/16	/ /	/ /
ISSUED DATE : / /	/ /	/ /	/ /

SHARP

信管	原管	資材	製品	生技	パーツ	商企	海推	KIT.Gr	SATL	控

TOSHIBA

TOSHIBA HOKUTO ELECTRONICS CORPORATION
MAGNETRON APPLICATION ENGINEERING GROUP, MAGNETRON DIVISION
1975, 23-CHOME MINAMI 5-JODORI, ASAHIKAWA-SHI, HOKKAIDO, 078-8335, JAPAN
PHONE: (0166) 31-4728 FACSIMILE: (0166)31-4739

TO : Sharp Corporation

ACCEPTANCE SIGNATURE

APPROVAL
APR. 27. 2016
SMALL APPL. ENG.
DEPT. I

We shall regard this specification was accepted by you, if we progressed one year from issued date without your acceptance signature.

SPECIFICATION

FOR
MAGNETRON
2M240H(L)-D

Note) Refer to the GENERAL SPECIFICATION (E130030-S01) for details of typical contents.

SPECIFICATION NUMBER : E160007-S01 April 13, 2016
REVISION STATUS :

K. Ishibachi

Katsuhide Ishibachi

GROUP MANAGER
QUALITY ENGINEERING GROUP
QUALITY ASSURANCE DIVISION

H. Ohira

Hideyo Oohira

GROUP MANAGER
MAGNETRON APPLICATION ENGINEERING GROUP
MAGNETRON DIVISION

SPECIFICATION OF THE MAGNETRON FOR MICROWAVE OVEN
MAGNETRON TYPE : 2M240H(L)-D

1. This specification shall be applied to the magnetron type RV-MZA406WRZZ(Sharp part number), 2M240H(L)-D(Toshiba Hokuto part number)supplied to SHARP CORPORATION by factories mentioned below.

2. Product

2-1 Outline and Dimension.

See outline drawing and Page-4.

2-2 Marking or Label

See Fig.1

2-3 Performance

See Pages 2 and 3

3. Packing

3-1 Toshiba Hokuto's standard packing shall be used.

3-2 Both Sharp part number and Toshiba Hokuto part number shall be marked on outer carton.

4. Others

4-1 Questions which may come out later or items not specified in the specifications should be mutually discussed and determined how to deal with between Sharp and Toshiba Hokuto.

4-2 Factories

(1) Toshiba Hokuto Electronic Devices(THAILAND)Co.,Ltd.
132 Moo 5 Bangkadi Industrial Tivanon Road, Pathumthani 12000

4-3 Prohibition to use ozone depleting substance

Prohibited substances : CFCs/Halon/Carbon tetrachioride/
1,1,1-Trichloroethane(Methyl chloroform)

(1) This product, assembly, and component don't contain any of the above mentioned substances.

(2) This product, assembly, and component are not manufactured using any of the above mentioned substances in Toshiba Hokuto and It's cooperative company.

4-4 Quality control chart

Quality control chart is specified on the other letter.

4-5 General specification

The general specification except this individual specification, please refer to GENERAL SPECIFICATION / E130030-S01.

This specification is based on the testing methods for continuous wave magnetrons ED-1501 set by the Electronic Industries Association of Japan (EIAJ).

Continuous Wave Magnetron												
DESCRIPTION	Magnetron (Fixed Frequency, Integral Magnet, Forced Air Cooled)											
FUNCTION	2450 MHz band continuous wave oscillation											
OUTER DIMENSIONS	See outline drawing											
ABSOLUTE MAXIMUM RATING				(2)		(10)			(3)	(4)		(5)
	Term	Ef	tk	ebm	Ib	ibm	Pi	σL	Tp	Tcon	Tstorage	Tseal
	Unit	V	s	kV	mAdc	A	kW	-	℃	℃	℃	℃
	Max	3.75	-	4.5	350	1.2	1.4	4	300	120	60	320
	Min	2.85	0	-	-	-	-	-	-	-	-30	
STANDARD TEST CONDITION: (1)(2)(3)		3.3	5	-	300	-	-	1.1Max	-	-	-	-

TEST SPECIFICATIONS

	TEST TERM (6)		TEST METHOD (EIAJ ED-1501)	TEST CONDITION	SYMBOL	NOMINAL	Limit		Unit
							Min	Max	
**	Vibration		5.4.1		-	-	-	-	-
	Breakdown Voltage		4.2	Et=10kVdc (11)	-	-	-	-	-
	Insulation		-	Et=1kVdc (7)	-	-	-	-	-
*	Cold Start Voltage Transient		-	(8)	-	-	-	10	kV
	Filament Current		4.1.1	tk=120s	If	10.7	8.7	12.7	A
	Peak Anode Voltage		4.3.1	(9)	ebm	4.15	3.95	4.35	kV
	Average Output Power (1)		4.3.3.1	(9)	Po	880	840	920	W
	Frequency		4.3.4	(9)	f	2463	2457	2470	MHz
*	Stability/Moding		4.3.11.2	σL=2,3,4	-	-	-	-	-
*	Stability/Runaway		4.3.11.1	σL=6, t=30s	-	-	-	-	-
*	Pulling Factor		4.3.6	σL=2	fpl	-	-	26	MHz
*	Sink Phase		4.3.7	σL=2	λsink /λg	0.24	-	-	-
	Power Leakage		4.3.15	σL=3	S_l	-	-	10	W/m^2
**	Life Test		4.5.1	(12)	t	-	500	-	h
**	Life Test End Point	Average output power (1)	4.3.3.1	(9)	Po	-	670	-	W
		Stability/ Moding	4.3.11.2	σL=2,3,4	-	-	-	-	-
		Stability/ Runaway	4.3.11.1	σL=6, t=30s	-	-	-	-	-

Note (1) The tube shall be mounted on the output coupler (containing tapered wave-guide) shown in the attached drawing (Page-4) and cooled by forced air of 800 L/min.
Single phase full wave rectifier without filter shall be used for power supply.
The diagram of the test equipment is shown in the GENERAL SPECIFICATION (Page-1).

(2) During normal oscillation.

(3) The points for measuring anode temperature is shown in the outline drawing.
Maximum anode temperature for normal condition (with load in the cavity) should be 250 ℃

(4) The point for measuring feed through capacitor temperature is shown in the outline drawing.

(5) Tseal means temperature of ceramic-to-metal seal position of the tube. Maximum allowable

(6) Tests shall be classified as follows:

Mark	Class
None	Production test
*	Design test
**	Type approval test

The Mark is placed on the left of each test item, for instance, **Vibration

(7) See the GENERAL SPECIFICATION (Page-4, Insulation).

(8) Measurement shall be conducted by standard oven which has a single phase half wave doubler power supply without filter, where no load voltage of the transformer shall be less than 2.2 kV rms.
The voltage transient just before start of oscillation shall be measured.

(9) Measurement shall be conducted within 15 seconds after anode power is turned on.
Magnetron is kept in the constant ambient temperature for more than 4 hours before testing.
Standard ambient temperature is 25 °C. Correction factor of peak anode voltage (ebm) and output power (Po) vs. temperature is shown in the GENERAL SPECIFICATION (Page-4).

(10) For each oven model, both microwave oven manufacturer and Toshiba Hokuto should evaluate and agree on the stability characteristics in the design stage of the oven.

(11) Test equipment should have a protect resistance specified in the table connecting in series to the products under the test. Leakage current should not exceed the limit specified in the table during the test of 10 seconds.

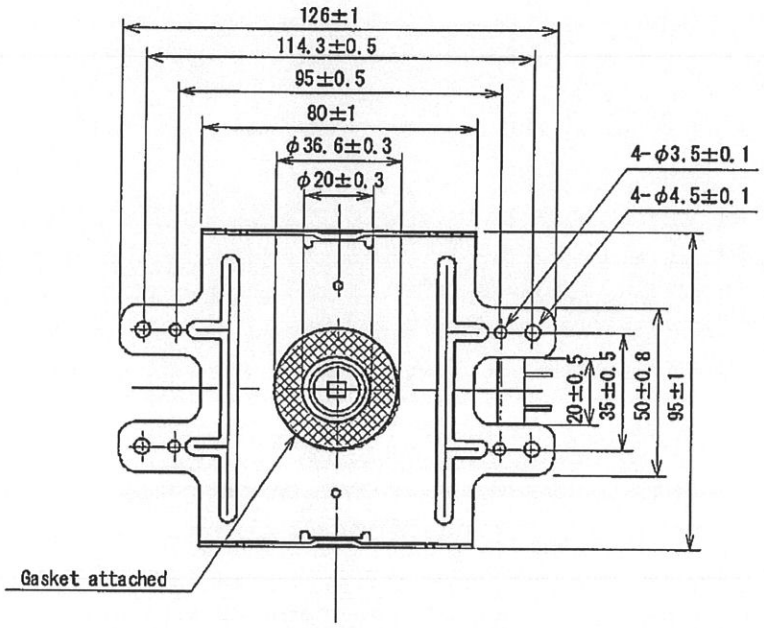
Leakage current	Protect resistance
100mA	200k-300kΩ

Connection of a magnetron should be as follows.
Anode : Plus
Cathode (terminal): Minus

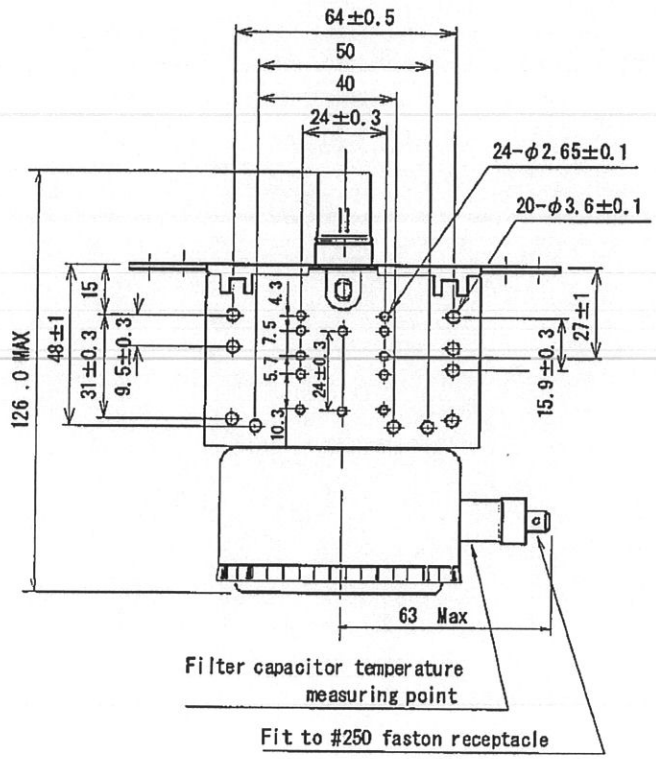
(12) The tube shall not appreciably be damaged in the following abnormal test.
Condition:

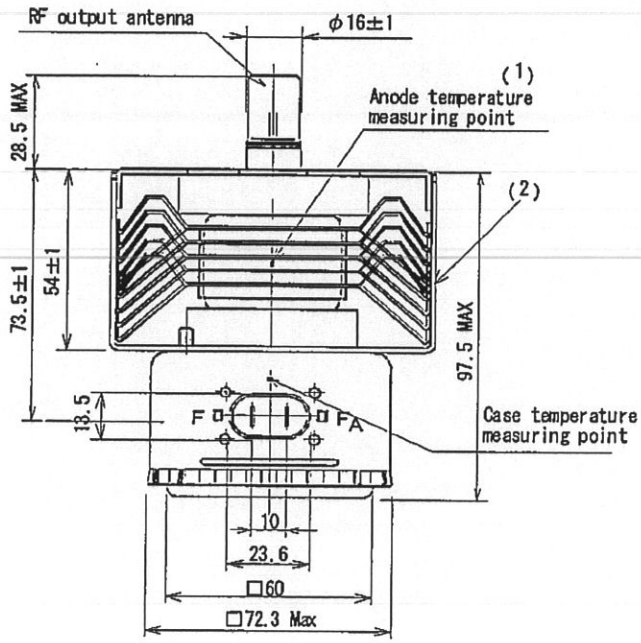
Anode temperature(Tp)	Cycle(Time)	Corresponding operating condition
350℃MAX	10 cycles (15minutes / cycle)	No load

OUTLINE DRAWING



Note (1) Temperature to be measured at the outlet side air flow.
(2) Number of fin : 5



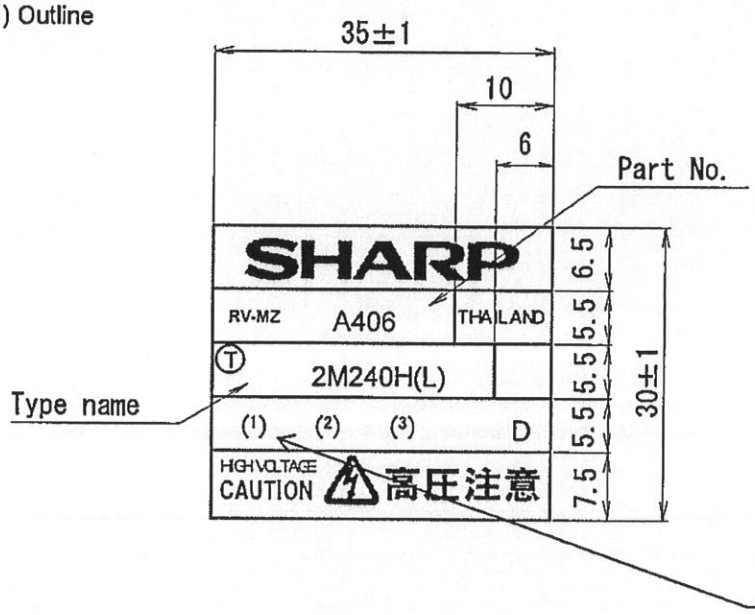


Notes)
*Capacitor type : Type A(b) / Refer to Page-5(3) on General specification E130030-S01
*Packing for Sharp Appliances(Thailand) Ltd. : Refer to Page-14 on General specification E130030-S01

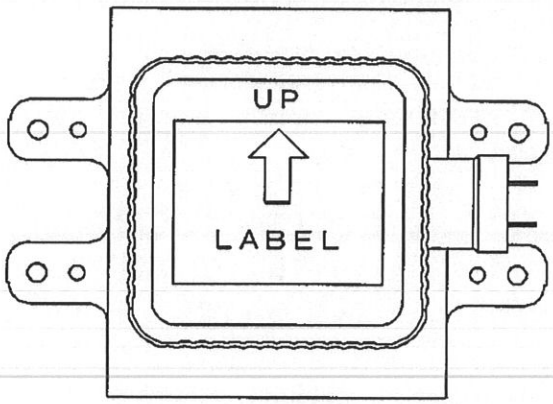
Fig. 1 LABEL SPECIFICATION

Unit : mm

(1) Outline



(2) Label position.



A: January
B: February
C: March
D: April
E: May
F: June
G: July
H: August
J: September
K: October
L: November
M: December

Note

(1) The code for identifying the lot and date of ex-factory is stamped in black color in this column.
This block is the date code in which the preceding one numeral shows the last of the Christian Era and counting block letter and two numerals indicate the three months after the scheduled date of shipment from a factory.

(2) Other codes for Toshiba Hokuto's production control are stamped in black color in this column.

(3) Corresponding to RoHS, RC# is stamped in black color in this column.
is number starting from 1.
And this number shall change to 2 or 3 according to modification of RoHS or the customer's request.

RECORD OF REVISION

Original Specification : E160007-S01 April 13, 2016

STATUS	DATE	PAGE	REVISION CONTENTS

To: SHARP Corporation

Report on Environmental Impact Substances Contained in Parts and Materials

Date: April 13, 2016
Company Name: Toshiba Hokuto Electronics Corporation
Department: Environment Control Center

We guarantee the following verified results on the environmental impact substances:

1. Information on surveyed part:

1) Part Name	Magnetron
2) Sharp Part Code Number	RV-MZA406WRZZ
3) Manufacturer's Part Code Number	
4) Part(Material) Weight (g)	

2. Ozone-depleting substances contained in the part or used in manufacturing:

No.	Substances	Details (Criteria)	Verified Result
1	Ozone-depleting substances(regulated by the Montreal Protocol (Class I and II))(*1)	Not contained in part/materials. However, use of the refrigerant (HCFC) for air-conditioners is considered as object exclusion.	(Not present)/Present
		Not used in the rinse process. (Object: PWBs,) (Even if you select "Not use" that means you didn't use these substances to rinse process, you have to describe rinse solution and method of the rinse process, you have to describe rinse solution and method of the rinse	(Not use)/Use Rinse solution: Rinse method:

Note: When the verified results show the substances are "present", the part or material is prohibited by the SHARP standard.

3. Presence of banned substances in the part (material)

No.	Substances	Details (Criteria) (*2)	Verified Result
1	Hexavalent chromium compound	Content is 1000ppm or less. Not intentionally added. (*3)	(Not present)/Present
2	Bis(tri-n-butyltin) oxide	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
3	Tri-substituted organostannic compounds	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
4	Polybrominated biphenyls (PBBs)	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
5	Polybrominated diphenyl ethers (PBDEs)	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
6	Polychlorinated biphenyls (PCBs)	Not intentionally added.	(Not present)/Present
7	Polychlorinated naphthalene	Not intentionally added.(Only poly chlorinated naphthalene with three chlorines and more is subject to the regulation.)	(Not present)/Present
8	Short chain chlorinated paraffin	Not intentionally added. (Only C:10-13 are subject to the regulation.)	(Not present)/Present
9	Asbestos	Not intentionally added.	(Not present)/Present
10	Polychlorinated Terphenyls (PCTs)	Not intentionally added.	(Not present)/Present
11	Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)	Not intentionally added.	(Not present)/Present
12	Tris (2-chloroethyl) phosphate	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
13	Hexabromocyclododecane	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
14	Diarsenic Pentoxide	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
15	Cobalt dichloride	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
16	Dimethyl fumarate	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
17	Refractory Ceramic Fibres,Aluminosilicate	Not intentionally added.	(Not present)/Present
18	Refractory Ceramic Fibres, Zirconia Aluminosilicate	Not intentionally added.	(Not present)/Present

Note: When the verified results show the substances are "present", the part or material is prohibited by the SHARP standard.

4. Presence of banned substances depending on application

When the verified result of criteria shows the substances are "present", please complete and return the "CONFIRMATION OF USE" form which details use of each substance.

No.	Substances	Details (Criteria)(*2)	Verified Result(*5)
1	Cadmium and its compound	Content is 100ppm or less. Not intentionally added. (*3)	(Not present)/Present
2	Lead and its compound	Not intentionally added. Content in plastics is 300ppm or less. Content in others is 1000ppm or less. (*3)	(Not present)/Present
3	Mercury and its compound	Content is 1000ppm or less. Not intentionally added. (*3)	(Not present)/Present
4	Beryllium and its compound	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
5	Azo colorants	Not intentionally added. Content is 30ppm or less.	(Not present)/Present
6	Polyvinyl Chloride	Not intentionally added.	(Not present)/Present
7	Phthalates	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
8	Radioactive substances	Not intentionally added.	Not present/(Present)
9	Perfluorooctane sulfonate(PFOSs) and its salt(*4)	Not intentionally added, and Content in substance/preparation is 50ppm or less, content of sub-product/article etc. except substance/preparation is 1000ppm or less, content of coating agent is 1μg/m^2 or less.	(Not present)/Present
10	Formaldehyde	Wood component: atmospheric concentration is 0.1ppm or less (by the chamber method). Plastics/fibers: content is 75ppm or less.	(Not present)/Present
11	Nickel	Not intentionally added.	Not present/(Present)
12	Perchlorates	Not intentionally added.(The object of survey is only battery)	(Not present)/Present
13	Diarsenic trioxide	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
14	Arsenic and its compound (except Diarsenic Pentoxide and Diarsenic trioxide)	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
15	Boric acid	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
16	Disodium tetraborate,anhydrous Tetraboron disodium heptaoxide, hydrate	Content is 1000ppm or less. Not intentionally added.	(Not present)/Present
17	Dibutyltin (DBT) compounds	Content is 1000ppm or less of tin in a material. Not intentionally added.	(Not present)/Present
18	Dioctyltin (DOT) compounds	Content is 1000ppm or less of tin in a material. Not intentionally added.	(Not present)/Present

*1) Regarding Ozone-depleting substances, object substances are CFC, 1,1,1-trichloroethane, Carbon tetrachloride, Bromomethane,Halon HBFC, and HCFC.

*2) Unit for calculating content rate is homogenious material.

*3) For packaging part and packaging material, the total concentration of these 4 heavy metals in part/material, ink and paint which constitute a package is 100ppm or less each.

*4) Concerning "Perfluorooctane sulfonate(PFOSs) and its salt", please refer to the Web Site of Ministry of Economy, Trade and Industry of Japan.
URL: http://www.meti.go.jp/policy/chemical_management/03kanri/96list.pdf

*5) When the verified result shows the substances are "present", please complete and return the attachment 1 "CONFIRMATION OF USE FORM" which details use of each substance.

Approved: Makoto SATOU
Signature: M. Satou

Written by: Masanobu JYONISHI
Signature: M. Jyonishi

Revised Date: June, 2011

To: SHARP Corporation

Attachement 1 "CONFIRMATION OF USE FORM"
(Parts and materials which are usable or prohibited according to application)
This form is to be completed when the verified results in the form 'Report on Environmental Impact Substances Contained in Parts and Materials' have shown the presence of banned substances with restrictions depending on application.

Date: April 13, 2015
Company Name: Toshiba Hokuto Electronics Corporation
Department: Environment Control Center

1. Information on survey applicable part

1) Part Name: Magnetron
2) Sharp Part Code Number: RV-MZA406WRZZ
3) Manufacturer's Part Code Number:

2.Detail of verified result

Please indicate with a "O" in the verified results column if any of the restricted substances are used for the following reasons.

No.	Substances	Check point (criteria)	Verified Results	Adaptability under the SHARP standard
1	Cadmium and its compound	(1) Used for electric joint		Usable
		(2) Used in filter glass.		
		(3) Used in a thermal cutoff of a one shot pellet type		
		(4) Battery is compliant with the EU Battery Directive (98/101/EC).		
		(5) Used in every application other than the above (1-4).		Banned
2	Lead and its compound	(1) Used in high-melting point solder (lead-based alloys containing 85 % by weight or more lead)		Usable
		(2) Used in electrical and electronic components in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compoundcompounds		
		(3) Used less than 0.2% by weight in glass of a fluorescent tube		
		(4) Contained in alloy component. (Lead content should be less than 0.35 Wt%, 0.4 Wt% and 4Wt% in steel material, aluminum material and copper material, respectively.)		
		(5) Used in solder consisting of more than two types of elements for connecting microprocessor pins and package containing less than 85wt% and more than 80wt% of lead.		
		(6) Used in solder for connecting semiconductor dies and carriers in flip chip IC packages		
		(7) Used in white glass or filter glass used for an optical purpose		
		(8) Used in cooling material for thermal conduction module C-rings		
		(9) Used in shell (exterior casing) or bushing (a cylindrical component fitted inside a hole) of a bearing for a compressor containing coolant for heating,ventilation, air-conditioning, refrigeration, chilling, and HVACR		
		(10) Used in dielectric ceramic used in a capacitor with rated voltage of 125V AC or 250V DC or larger		
		(11) Used in a dielectric ceramic used in a capacitor with rated voltage less than 125V AC or 250V DC		
		(12) Used in glass used for flat fluorescent lamps used for LCD, designing, or lighting for industrial purpose		
		(13) Used in finishing agents of 0.65 mm or finer pitch components other than connectors		
		(14) Used for stabilizer or additive for non-electrolytic gold or nickel plating		
		(15) Battery is compliant with the EU Battery Directive (98/101/EC).		
		(16) Used in products for children 12 and under, containing lead exceeding 300ppm per surveying unit.		Banned
		(17) Used in partsimaterial used in toys, containing lead above 0.009% per surface treatment layer such as coating.		
		(18) Used in the other than the above (1-15).		
3	Mercury and its compound	(1) Used in single-capped fluorescent lamp that does not exceed the following limitations (per burner): (a) For general illumination less than 30W: 5mg. (b) For general illumination of 30W or higher and less than 50W: 5 mg (c) For general illumination of 50W or higher and less than 150W: 8 mg. (d) For general illumination of 150W or higher: 15mg (e) Having a circular or square structure, 17mm or less in tube diameter, and for general illumination: 7mg. (f) For a specific use: 5 mg		Usable
		(2) Used in double-capped slim fluorescent lamp (in each lamp) for general purposes that does not exceed the following limitations: (a) A three-wavelength phosphor of less than 9mm in tube diameter (e.g., T2) with normal lifetime: 5mg (b) A three-wavelength phosphor of 9mm or larger and of 17mm or less in tube diameter (e.g., T5) with normal lifetime: 5mg (c) A three-wavelength phosphor of over 17mm and 28mm or less in tube diameter (e.g., T8) with normal lifetime: 5mg (d) A three-wavelength phosphor of over 28mm in tube diameter (e.g., T12) with normal lifetime: 5mg (e) A three-wavelength phosphor with long lifetime (> 25,000 h) : 8mg		
		(3) Used in double-capped fluorescent lamp (in each individual lamp) not for general purposes under the following conditions: (a) A linear white lamp of 28mm in tube diameter (e.g., T10 and T12): mercury that does not exceed 10mg (b) Nonlinear white lamps of all shapes: mercury that does not exceed 15mg (c) Mercury contained in a nonlinear three-wavelength phosphor lamp of 17mm or larger (e.g., T9) (d) Mercury contained in a lamp for any other general illumination or specific purposes (e.g., induction lamps)		
		(4) Used in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): (a)Short length (≤ 500 mm): 3.5mg, (b)Medium length (> 500 mm and ≤ 1 500 mm): 5mg, (c)Long length (> 1500 mm): 13mg		
		(5) Used in low pressure discharge lamps (per lamp) other than the above(1-4)		
		(6) Used in extra-high voltage sodium (vapor) lamp for general illumination with an improved color rendering index over 60		
		(7) Used in extra-high voltage sodium (vapor) lamp for general illumination		
		(8) Used in high-pressure mercury vapor lamp (HPMV)		
		(9) Used in high-pressure mercury vapor lamp (HPMV)		
		(10) Used in metal halide lamp (MH)		
		(11) Battery is compliant with the EU Battery Directive (98/101/EC).		
		(12) Used in every application other than the above (1-11).		Banned
4	Beryllium and its compound	(1) Used in the exception items. (exception items: alloy, ceramics, glass, semiconductor)		Usable
		(2) Used in the parts excluding exception items		Banned
5	Azo colorants	(1) Used in a contact part with human body of a product (ex: electric carpet, earphone, strap and etc.) which is manufactured based on the premise that the product continuously contacts human body, and may produce amine when decomposed.		Banned
		(2) Used in every application other than the above (1). (Used in a part which does not continuously contact with human body.)		Usable
6	Polyvinyl Chloride	(1) Used in packaging material and packaging part for Sharp product		Banned
		(2) Used for the other than the above (1).		Usable
7	Phthalate esters	(1) Dibutyl phthalate:DBP, or Bis(butylbenzyl) phthalate:BBP, or Diisobutyl phthalate:DIBP is used.		Banned
		(2) Dinonyl phthalate:DNP, or Diisodecyl phthalate:DIDP, or Di-n-octyl phthalate:DNOP is used in parts/materials that is used in products for children 12 and under.		
		(3)Bis(2-ethylhexyl)phthalate, DEHP/DOP is contained as impurities (Not intentionally added)		Usable
		(4) Used in the other than the above (1-3).		
8	Radioactive substances	(1) Used in the magnetron of a microwave oven. (Only Thorium is subject to the regulation.)	O	Usable
		(2) Used in the electric bulb of a LCD projector. (Only Krypton 85 is subject to the regulation.)		
		(3) Used in the other than the above (1-2).		Banned
9	Perfluorooctane sulfonate(PFOSs) and its salt	(1)Used in photoresists and reinforeflection coating for the photolithography process.		Usable
		(2) Used in photo coating used in printing plates, film, and documents.		
		(3) Used in mist suppressants for hard chrome plating, and metsening agent used in equipment for plating.		
		(4) Used in every application other than the above (1-3).		Banned
10	Formaldehyde	(1) Used in wooden parts.		Banned
		(2) Used in a direct human body contact part of a product which is intended to continuously contact with human body. (ex: electric carpet, earphone, strap and etc.)		
		(3) Used in every application other than the above (1-2).		Usable
11	Nickel	(1) Used in parts which continuously contact with human skin for a long time.		Banned
		(2) Used in the other than the above (1).	O	Usable
12	Perchlorates	(1) Contained above 6ppb by weight per battery		Usable only with statement
		(2) Contained less than 6ppb by weight per battery		Usable
13	Diarsenic trioxide	(1) Used in the lamp of LCD projector.		Usable
		(2) Used in the other than the above (1).		Banned
14	Arsenic and its compound	(1) Used for the exception items. (exception items: semiconductor, resist, magnet Rbx, copper foil and battery)		Usable
		(2) Used in the other than the above (1).		Banned
15	Boric acid	(1) Used in the polarizers(made of PVA) of LCD panel and glass.		Usable
		(2) Used in adhesive agent.		
		(3) Used for the other than the above (1-2).		Banned
16	Disodium tetraborate, anhydrous Tetraboron disodium heptaoxide, hydrate	(1) Used in the polarizers(made of PVA) of LCD panel and glass.		Usable
		(2) Used in adhesive agent and fibers.		
		(3) Used for the other than the above (1-2).		Banned
17	Dibutyltin (DBT) compounds	(1) Used for one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives.		Usable
		(2) Used for paints and coatings containing DBT compounds as catalysts when applied on articles		
		(3) Used in stabilizer of soft polyvinyl chloride (PVC) for outdoor purpose		
		(4) Used in catalyst for polymerization of resin for toner. Content as a metal tin is 1000ppm or less		
		(5) Used for the other than the above (1-4).		Banned
18	Dioctyltin (DOT) compounds	(1) Used for two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits)		Banned
		(2) Used for the other than the above (1).		Usable

Note: When the verified results correspond to "banned", the part or material is prohibited by the SHARP standard.

Approved: Makoto SATOU
Signature: M. Satou

Written by: Masanobu JYONISHI
Signature: M. Jyonishi

Revised Date: June, 2011

To: SHARP Corporation

Date of Preparation: April 13, 2016

Name of Company: Toshiba Hokuto Electronics Corporation

Name of Department: Environment Control Center

1. Information on survey applicable part

1) **Part Name** Magnetron

2) **Sharp Part Code Number** RV-MZA406WRZZ

3) **Manufacturer's Part Code Number**

A list of Inspected Components by RoHS

Toshiba Hokuto Electronics Corporation

Date : June 7, 2006

Parts name	Component parts name	Material	Analysis result (ppm)						Certification organization	Test Report No.	Report date
			Cd	Pb	Hg	Cr6+	PBBs	PBDEs			
Magnetron	Antenna cap	Stainless steel	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120957	Jan. 28, 2005
	Exhaust tube, Anode, Vane, Antenna feeder	Copper	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120958	Jan. 28, 2005
	Side choke, Antenna ring(2),	Iron(nickel plated)	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120959	Jan. 28, 2005
	Output ceramics, Input ceramics	ceramics	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120960 No.JP/2005/080633	Jan. 28, 2005 Aug. 29, 2005
	Antenna ring(1), Output pole piece, Input pole piece, Output envelope, Input envelope	Iron(copper plated)	<2	8.65	<2	<2	0	0	SGS	No.JP/2004/120961	Jan. 28, 2005
	Gasket	Brass	<2	17	<2	<2	0	0	SGS	No.JP/2004/120962	Jan. 28, 2005
	Strap ring	Copper	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120963	Jan. 28, 2005
	Output magnet, Input magnet	magnet	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120964	Jan. 28, 2005
	Output yoke, Input yoke, Filter box, Filter box lid	Iron(zinc plated)	<2	8.44	<2	<2	0	0	SGS	No.JP/2004/120965	Jan. 28, 2005
	Filament	Thoriated tungsten	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120966	Jan. 28, 2005
	Radiator	Aluminum	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120967	Jan. 28, 2005
	Center rod, Side rod	Molybdenum	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120968	Jan. 28, 2005
	Choke coil	Copper	<2	9.95	<2	<2	0	0	SGS	No.JP/2004/120969	Jan. 28, 2005
	Finger spacer	Stainless steel	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120970	Jan. 28, 2005
	Edge End Hat	Molybdenum	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120971	Jan. 28, 2005
	Box screw	Iron	<2	7.97	<2	<2	0	0	SGS	No.JP/2004/120972	Jan. 28, 2005
	Solder	Silver	<2	<2	<2	<2	0	0	SGS	No.JP/2004/120973	Jan. 28, 2005
	Ferrite core for choke coil	Ferrite	<2	53.2	<2	<2	0	0	SGS	No.JP/2004/120974	Jan. 28, 2005
	Label	Paper	<2	<2	<2	<2	<5	<5	SGS	No.JP/2004/120975	Jan. 28, 2005
	Capacitor	Barium Titanate	<2	<5	<2	<2	0	0	SGS	F690101/LF-CTS032591 F690501/LF-CTS035124 CE/2004/A3681	Dec. 10, 2004 Feb. 23, 2005 Nov. 3, 2004
		Polybutylene terephthalate	<0.5	<5	<0.5	<0.16	<5	<5	SGS	F690101/LF-CTS021814	Aug. 2, 2004
		Silicone Rubber Tube	<0.5	<5	<0.5	<0.16	<5	<5	SGS	F690101/LF-CTS032597 F690101/LF-CTS000001	Dec. 10, 2004 Apr. 8, 2004
		Solder	<0.5	185	<0.5	<0.16	0	0	SGS	F690101/LF-CTS013957	Jul. 23, 2004
		SPCC (Cu-Sn plated)	<0.5	7.7	<0.5	<0.16	0	0	SGS	F690101/LF-CTS032592	Dec. 10, 2004
		Steel (Cu-Sn plated)	<0.5	<0.5	<0.5	<0.16	0	0	SGS	F69010/LF-CTS032590	Dec. 10, 2004
		Epoxy Resin	<0.5	<5	<0.5	<0.16	<5	<5	SGS	F690101/LF-CTS032594 F690101/LF-CTS032593	Dec. 10, 2004 Dec. 10, 2004

Name of person in charge: Makoto SATOU

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