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APPROVAL SHEET

CUSTOMER: 大眾電腦股份有限公司

APPLICABLE MODEL:

PART NO. **20-25373-00**

DESCRIPTION **FH23-39S-0.3SHW(05)**

MANUFACTURER HIROSE

REMARK

育達電子股份有限公司

IIDA ELECTRONICS CO., LTD.

TEL:2509-7866　FAX:2509-7808

	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE		COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
△						△					
△						△					

APPLICABLE STANDARD				
RATING	OPERATING TEMPERATURE RANGE	-55°C TO 85°C	STORAGE TEMPERATURE RANGE	-10°C TO 50°C (PACKED CONDITION)
	VOLTAGE	30V AC	OPERATING OR STORAGE HUMIDITY RANGE	RELATIVE HUMIDITY 90 % MAX. (NOT DEWED)
	CURRENT	0.3A	APPLICABLE CABLE	t=0.20±0.03mm, TIN, TIN-COPPER PLATING

SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
CONSTRUCTION				
GENERAL EXAMINATION	VISUALLY AND BY MEASURING INSTRUMENT.	ACCORDING TO DRAWING.	×	×
MARKING	CONFIRMED VISUALLY.		×	×
ELECTRIC CHARACTERISTICS				
CONTACT RESISTANCE	AC 20mV MAX., 1mA.	100mΩ MAX. INCLUDING FPC BULK RESISTANCE (L=12mm, THICKNESS OF CUPPER FOIL: 35 μm)	×	×
INSULATION RESISTANCE	100V DC.	50 MΩ MIN.	×	×
VOLTAGE PROOF	90V AC FOR 1 min.	NO FLASHOVER OR BREAKDOWN.	×	×
MECHANICAL CHARACTERISTICS				
FPC RETENSION FORCE	MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.20mm AT INITIAL CONDITION.)	0.15N/PIN MAX. (CONECTOR, FPC AT INITIAL CONDITION)	×	—
FPC INSERTION FORCE	MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.20mm AT INITIAL CONDITION.)	0.30N/PIN MIN. (CONECTOR, FPC AT INITIAL CONDITION)	×	—
MECHANICAL OPERATION	10 TIMES INSERTIONS AND EXTRACTIONS.	① CONTACT RESISTANCE: 100 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—
VIBRATION	FREQUENCY 10 TO 55 Hz, HALF AMPLITUDE 0.75mm, — m/s^2 FOR 10 CYCLES IN 3 DIRECTIONS.	① NO ELECTRICAL DISCONTINUITY OF 1 μs. ② CONTACT RESISTANCE: 100 mΩ MAX.	×	—
SHOCK	981m/s^2, DURATION OF PULSE 6 ms AT 3 TIMES IN 3 DIRECTIONS.	③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—
ENVIRONMENTAL CHARACTERISTICS				
DAMP HEAT (STEADY STATE)	EXPOSED AT 40 °C, RELATIVE HUMIDITY 90 TO 95%, 96h.	① CONTACT RESISTANCE: 100 mΩ MAX. ② INSULATION RESISTANCE: 50 MΩ MIN. ③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—
DAMP HEAT, CYCLIC	EXPOSED AT –10 TO +65°C, RELATIVE HUMIDITY 90 TO 96%, 10 CYCLES, TOTAL 240 h.	① CONTACT RESISTANCE: 100 mΩ MAX. ② INSULATION RESISTANCE: 1 MΩ MIN. (AT HIGH HUMIDITY) ③ INSULATION RESISTANCE: 50 MΩ MIN. (AT DRY) ④ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—

REMARKS	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
Unless otherwise specified, refer to JIS C 5402.	K. Okamura 02.04.04	T. Murai 02.04.04	R. Tahmyan 02.04.04	M. Ishida 02.04.04	

TO
NC

Note QT:Qualification Test AT:Assurance Test ×:Applicable Test

HRS HIROSE ELECTRIC CO., LTD.	SPECIFICATION SHEET	PART NO. FH23 – 39S – 0.3SHW	
CODE NO.(OLD) CL	DRAWING NO. ELC4 – 153577	CODE NO. CL 586 – 1306 – 3	1/2

SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
RAPID CHANGE OF TEMPERATURE	TEMPERATURE-55→+15TO+35→+85→+15TO+35°C TIME 30→ 2~3 → 30→ 2~3 min. UNDER 5 CYCLES.	① CONTACT RESISTANCE: 100 mΩ MAX. ② INSULATION RESISTANCE: 50 MΩ MIN. ③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—
DRY HEAT	EXPOSED AT 85 °C, 96 h.	① CONTACT RESISTANCE: 100 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	×	—
COLD	EXPOSED AT -55°C, 96 h.		×	—
CORROSION SALT MIST	EXPOSED AT 35°C, 5% SALT WATER SPRAY FOR 96h.	① CONTACT RESISTANCE: 100 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS. ③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR.	×	—
HYDROGEN SULPHIDE [JIS C 0092]	EXPOSED AT 40°C, RELATIVE HUMIDITY 80%, 10 ~ 15 PPM FOR 96h.		×	—
SURPHUR DIOXIDE [JIS C 0090]	EXPOSED AT 40 °C , RELATIVE HUMIDITY 80%, 25 PPM FOR 96 h.		×	—
RESISTANCE TO SOLDERING HEAT	1) REFLOW SOLDERING : PEAK TMP. 250°C MAX. REFLOW TMP. 230°C MIN FOR 60 sec. 2) SOLDERING IRONS : TMP. 350±5°C FOR 5 sec .	NO DEFORMATION OF CASE OF EXCESSIVE LOOSENESS OF THE TERMINALS.	×	—
SOLDERABILITY	SOLDERED AT SOLDER TEMPERATURE, 235°C FOR IMMERSION DURATION, 2 sec.	A NEW UNIFORM COATING OF SOLDER SHALL COVER A MINIMUM OF 95 % OF THE SURFACE BEING IMMERSED.	×	—

REMARKS	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
Unless otherwise specified, refer to JIS C 5402.	S. Okamura 03.04.04	T. Murai 02.04.04	R. Tokuyama 02.04.04	M. Ishida 02.04.04	

TO
NC

Note QT:Qualification Test AT:Assurance Test ×:Applicable Test

HRS HIROSE ELECTRIC CO., LTD.	SPECIFICATION SHEET	PART NO. FH23 – 39S – 0.3SHW	
CODE NO.(OLD) CL	DRAWING NO. ELC4 – 153577	CODE NO. CL 586 – 1306 – 3	2

COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
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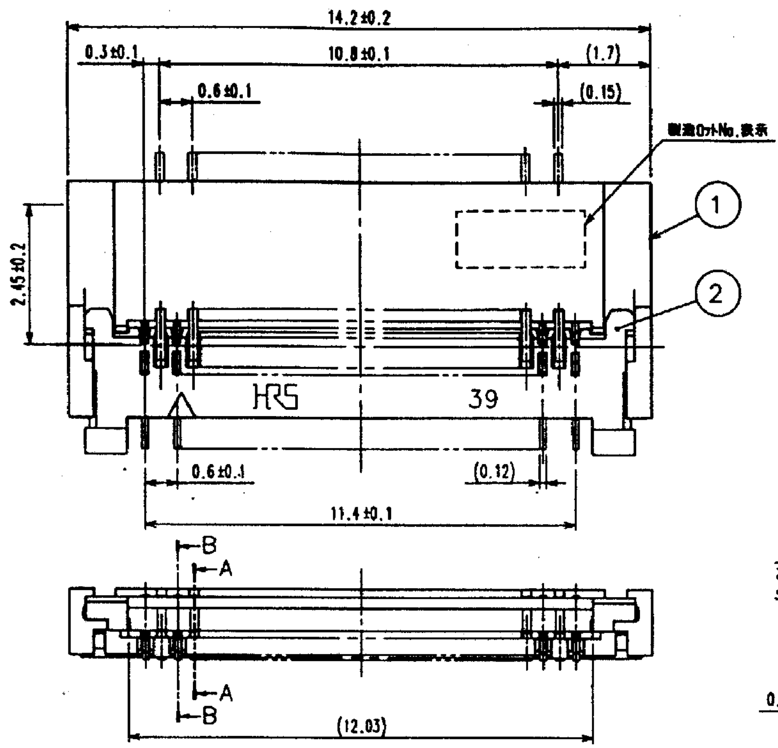
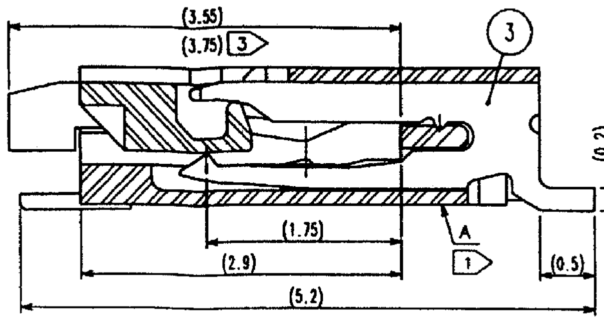
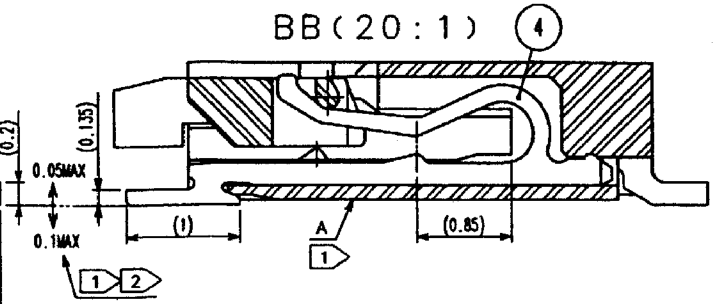
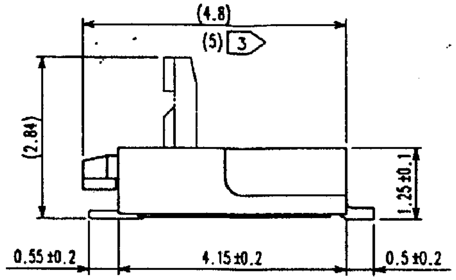


AA(20:1)

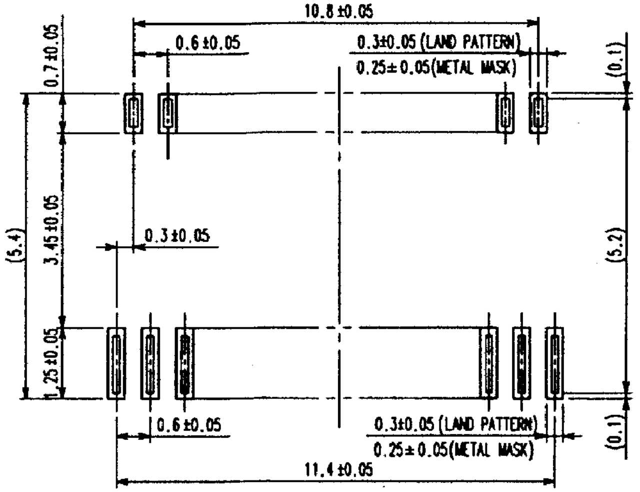


BB(20:1)





RECOMMENDED LAND PATTERN, METAL MASK(FREE)



RECOMMENDED METAL MASK THICKNESS : t=0.10

注 1 DIMENTIONS FROM REFERENCE SURFACE A (BOTTOM SURFACE OF HOUSING).

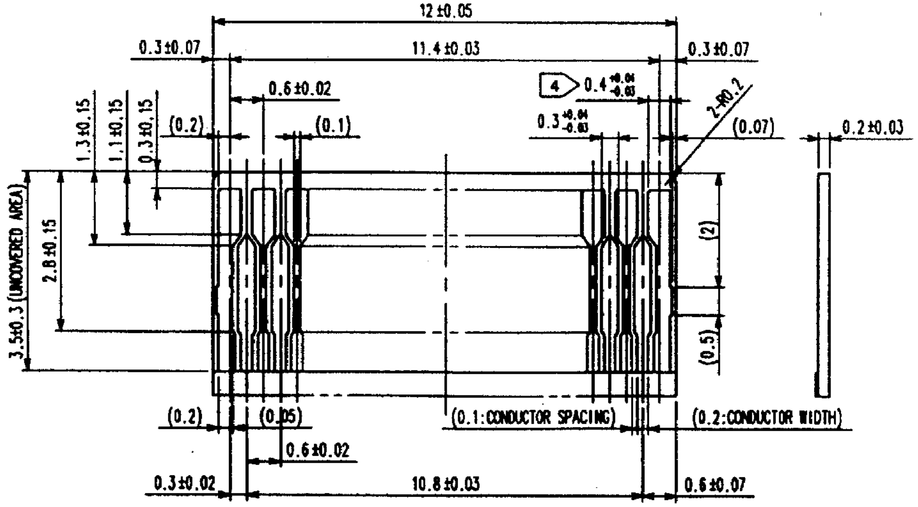
2 LEAD CO-PLANARITY SHALL BE 0.1 MAX.

3 LENGTH AFTER FPC IS INSERTED.

4 $0.3^{+0.04}_{-0.03}$ CAN BE APPLIED WITH LEAD PLATED.

5 NOTE THAT PREVENTIVE HOLE FOR SINK MARK COULD BE ADDED FOR IMPROVEMENT.
THE QUALITY REMAINS GOOD, EVEN WITH THE DARK SPOTS, WHICH COULD OCCASIONALLY OCCUR ON MOLDED PLASTIC.

RECOMMENDED FPC(FREE)



RECOMMENDED STIFFENER MATERIAL:POLYIMIDE, HEAT CURED ADHESIVE.

NO.	MATERIAL	FINISH, REMARKS		NO.	MATERIAL	FINISH, REMARKS
3	PHOSPHOR BRONZE	TIN PLATING				
2	LCP	BLACK	UL94V-0			
1	LCP	BEIGE	UL94V-0	4	PHOSPHOR BRONZE	TIN PLATING

CODE NO.(OLD)	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
	K. Kesmura 02.04.03	T. Murai 02.04.04	R. Takayama 02.04.04	M. Ikeda 02.04.04	. .

SCALE	DRAWING NO.	PART NO.
10 : 1	EDC3-153577	FH23-39S-0.3SHW
UNITS mm	HRS HIROSE ELECTRIC CO., LTD	CODE NO. CL586-1306-3

1/2

TO
NC

FORM NO.229

	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE		COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
△					. .	△					. .
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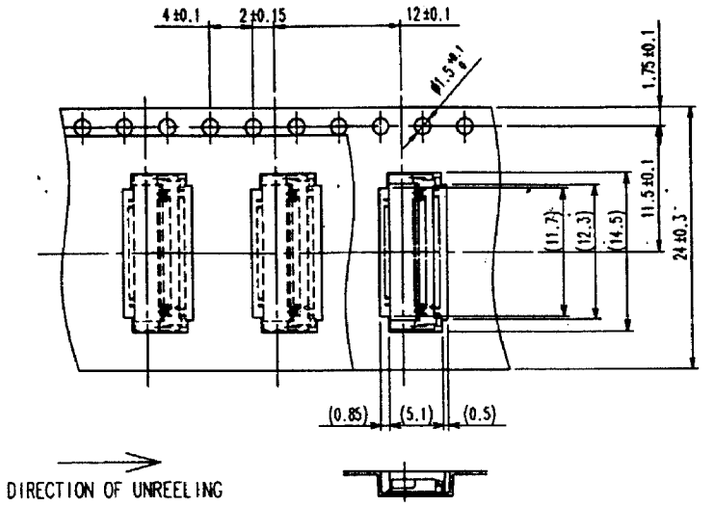
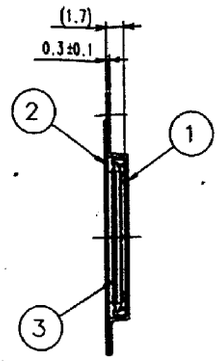
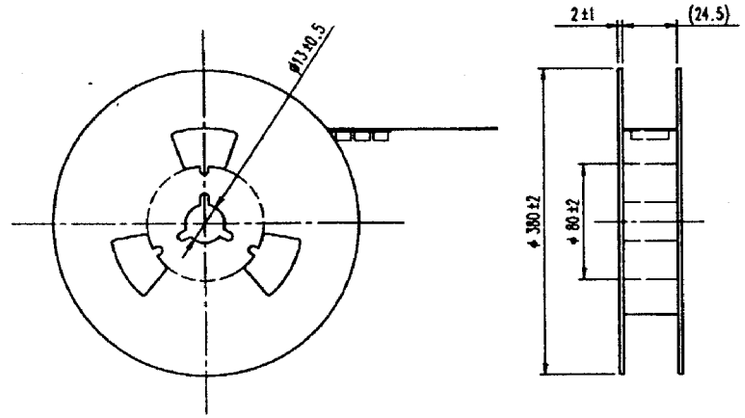
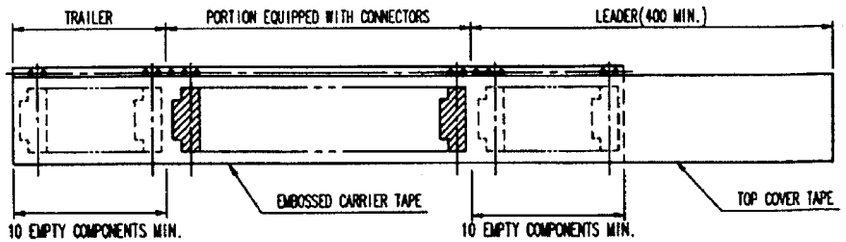




REEL DIMENTION (FREE)



NOTES 1 THE DIMENTIONS IN PARENTHSES ARE FOR REFERENCE.
2 PER REEL : 2500 CONNECTORS.



NO.	MATERIAL	FINISH, REMARKS	NO.	MATERIAL	FINISH, REMARKS
2	POLYESTER		4		
1	POLYSTYRENE		3	(CONNECTOR)	

CODE NO.(OLD)	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
	A.Okamoto 02.04.04	Y.Murai 02.04.04	R.Takagaw '02.04.04	M.Ishida 02.04.04	

SCALE	DRAWING NO.	PART NO.
2 : 1	EDC3-153577	FH23-39S-0.3SHW
UNITS: (mm)	HRS HIROSE ELECTRIC CO., LTD	CODE NO. CL586-1306-3 / 2

TO
NC

材　料　証　明　書
(CERTIFICATE FOR MATERIAL OF PLASTIC PART)

発行日　　年　月　日
(DATE)

御 中
(TO:)

品名コード　586
(CODE NO.)

製　品　名　FH23-＊S-0.3SHW(05)
(MODEL NO.)

上記の製品には、下記の材料が使用されていることを証明いたします。
(WE HEREBY CERTIFY THAT THE FOLLOWING MATERIAL IS USED FOR THE ABOVE PART.)

この製品への粉砕材(Regrind Material)使用量は、ＵＬ７４６の規定通り、質量比２５％以下である。
(Quantity of the use of regrind material to this product Is less than 25% of the weight percentage as Regulated In UL746.)

No.	部品名 PART NAME	材料 (MATERIAL) 材質名 GENERIC NAME	型名 CAT. NO.	材料メーカー MANUFACTURER	難燃性／ファイル番号 FLAME CLASS FILE NO.
1	絶縁ケース INSERT	ＬＣＰ樹脂 LCP	2140GM	上野製薬株式会社 UENO FINE CHEMICALS INDUSTRY LTD	V-0 E122152
2	可動片 LOCK LEVER	ＬＣＰ樹脂 LCP	E6008	住友化学工業株式会社 SUMITOMO CHEMICAL CO LTD	V-0 E54705

東北ヒロセ電機株式会社
TOHOKU HIROSE ELECTRIC CO., LTD.

品質管理課　課長　石野　和明
KAZUAKI ISHINO, MANAGER
QUALITY CONTROL SEC.

石野

QMFZ2 Component - Plastics Friday, October 24, 2003 E122152

UENO FINE CHEMICALS INDUSTRY LTD
1-127 HIGASHIARIOKA ITAMI-SHI HYOGO-KEN 664-0845 JAPAN

Material Designation: **2140GM(f)(r)**

Product Description: Liquid Crystal Polymer (LCP), furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
NC, BK	0.75	V-0	-	-	130	130	130	-	-
NC, BK	1.5	V-0	-	-	130	130	130	-	-
NC, BK	3.0	V-0	-	-	130	130	130	-	-

CTI: - **HVTR:** - **D495:** - **IEC Ball Pressure** (°C): -

Dielectric Strength (kV/mm): -
ISO Tensile Strength (MPa): -
ISO Tensile Impact (kJ/m^2): -

Volume Resistivity (10^{X}ohm-cm): -
ISO Flexural Strength (MPa): -
ISO Izod Impact (kJ/m^2): -

Dimensional Stability(%): -
ISO Heat Deflection (°C): -
ISO Charpy Impact (kJ/m^2): -

(f) May be suffixed by one, two, or three letters except F

(r) Virgin and regrind material up to 50% by weight has the same V-0 rating. No other properties for regrind between 25% - 50% have been evaluated.

Report Date: 11/6/1998 Underwriters Laboratories Inc®

QMFZ2 Component - Plastics | Friday, October 24, 2003 | E54705

SUMITOMO CHEMICAL CO LTD
5-33 KITAHAWA 4-CHOME CHUO-KU OSAKA 541-8550 JAPAN

Material Designation: **E6008**

Product Description: Liquid Crystal Polymer (LCP), designated "SUMIKASUPER" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
ALL	0.54	V-0	-	-	130	130	130	-	-
	0.75	V-0	-	-	220	180	220	-	-
	1.5	V-0	2	4	220	200	240	-	-
	3.0	V-0	1	4	220	200	240	-	-

CTI: 3 **HVTR:** 0 **D495:** 5 **IEC Ball Pressure** (°C): -

Dielectric Strength (kV/mm): -
Volume Resistivity (10^Xohm-cm): -
Dimensional Stability(%): -
ISO Tensile Strength (MPa): -
ISO Flexural Strength (MPa): -
ISO Heat Deflection (°C): -
ISO Tensile Impact (kJ/m^2): -
ISO Izod Impact (kJ/m^2): -
ISO Charpy Impact (kJ/m^2): -

Report Date: 10/31/1990 Underwriters Laboratories Inc®

Test Report

HIROSE ELECTRIC CO., LTD.
5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

Report No. : CE/2006/51366
Date : 2006/05/11
Page : 1 of 5

The following merchandise was (were) submitted and identified by the client as :

Type of Product	:	CONNECTOR
Style/Item No	:	FH23-*S-0.3SH(A)W(05)
Sample Received	:	2006/05/04
Testing Date	:	2006/05/04 TO 2006/05/11

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Test Result : - Please see the next page -

Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

HIROSE ELECTRIC CO., LTD.
5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

Report No. : CE/2006/51366
Date : 2006/05/11

Test Result

PART NAME NO.1 : BEIGE PLASTIC
PART NAME NO.2 : BALCK PLASTIC
PART NAME NO.3 : GOLDEN COLORED METAL TERMINAL

Test Item (s):	Unit	Method	MDL	Result		
				No.1	No.2	No.3
Monobromobiphenyl	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	N.D.	---
Dibromobiphenyl	%		0.0005	N.D.	N.D.	---
Tribromobiphenyl	%		0.0005	N.D.	N.D.	---
Tetrabromobiphenyl	%		0.0005	N.D.	N.D.	---
Pentabromobiphenyl	%		0.0005	N.D.	N.D.	---
Hexabromobiphenyl	%		0.0005	N.D.	N.D.	---
Heptabromobiphenyl	%		0.0005	N.D.	N.D.	---
Octabromobiphenyl	%		0.0005	N.D.	N.D.	---
Nonabromobiphenyl	%		0.0005	N.D.	N.D.	---
Decabromobiphenyl	%		0.0005	N.D.	N.D.	---
Total PBBs (Polybrominated biphenyls)/Sum of above	%		-	N.D.	N.D.	---
Monobromobiphenyl ether	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	N.D.	---
Dibromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Tribromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Tetrabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Pentabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Hexabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Heptabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Octabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Nonabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Decabromobiphenyl ether	%		0.0005	N.D.	N.D.	---
Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above	%		-	N.D.	N.D.	---
Total of Mono to Nona-brominated biphenyl ether. (Note 4)	%		-	N.D.	N.D.	---

Test Report

HIROSE ELECTRIC CO., LTD.
5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

Report No. : CE/2006/51366
Date : 2006/05/11

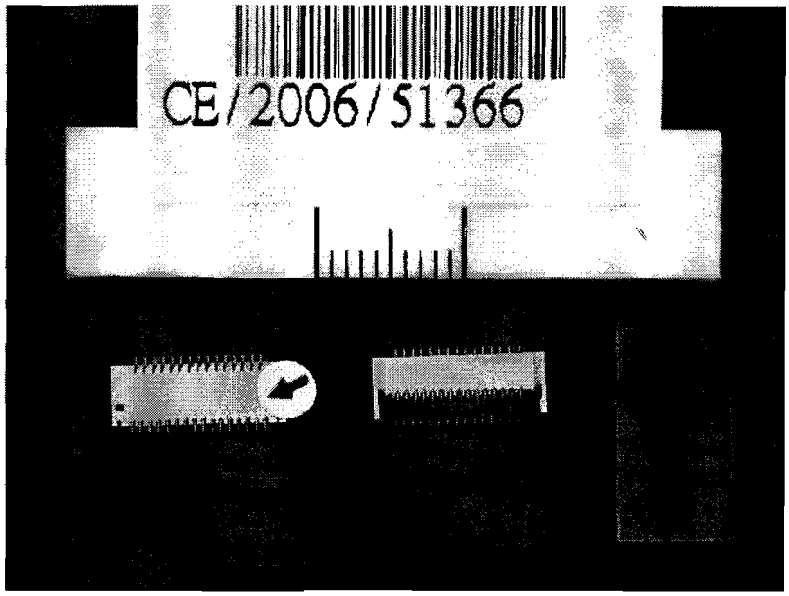
Test Item (s):	Unit	Method	MDL	Result		
				No.1	No.2	No.3
Chromium VI (Cr+6)	ppm	UV-VIS(US EPA 7196A) after reference to US EPA 3060A.	2	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.	N.D.	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.	N.D.	11.2

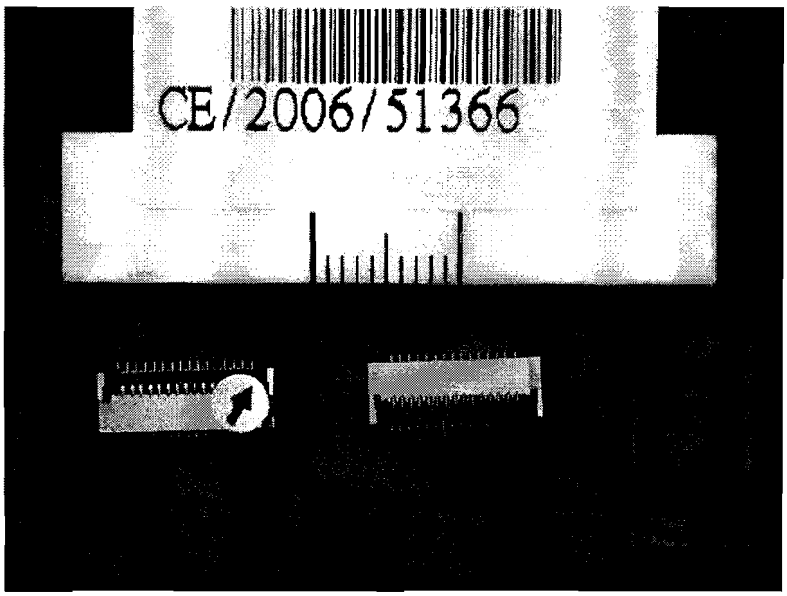
NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) Decabromodiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
(5) PBBEs=PBDEs=Polybrominated Diphenyl Ethers=PBDOs=PBBOs.
(6) " - " = Not Regulation
(7) " --- " = Not Applicable

Test Report

HIROSE ELECTRIC CO., LTD.
5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

Report No. : CE/2006/51366
Date : 2006/05/11





Test Report

HIROSE ELECTRIC CO., LTD.
5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

Report No. : CE/2006/51366
Date : 2006/05/11