

WAHSONIC[®]

承認書

APPROVAL SHEET

客戶

CUSTOMER : 友勁科技

料號

ITEM NO. HST-2051DR

品名

DESCRIPTION TRANSFORMER

客戶對應料號

ITEM NO. 216208HN2034D00 對應：(HN2034CG)

華馳精密股份有限公司		客戶公司名稱	
板本 REV	A1	APPROVAL NO	
檢測 TESTED BY	彭艷	客戶承認簽章 APPROVAL SIGNATURE	
審查 CHECKED BY	彭艷		
品管 Q.A.DEPT			
核准 APPROVED BY	友勁		
日期 DATE:	2011/07	日期 DATE:	2011

華馳精密股份有限公司

WAHSONIC CORPORATION

<http://www.wahsonic.com.tw>

地址:台灣新竹市自由路 113 號 7F 之 2 TEL:03-5358977

7F-2, No.113, Zihyou Rd., HsinChu 30041, Taiwan FAX:03-5322132

10/100BASE-TX TRANSFORMER MODULES

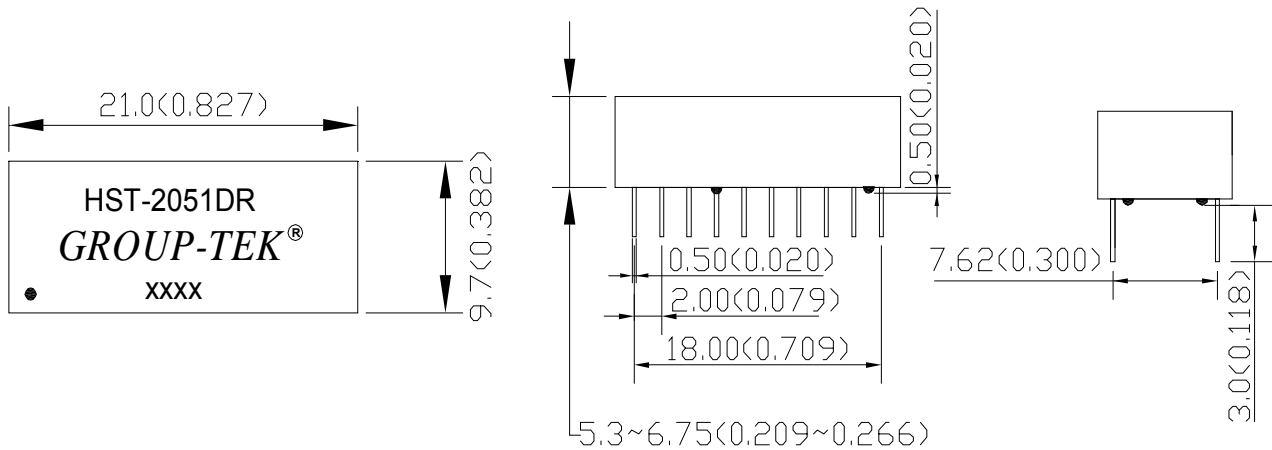
Features:

- Designed to meet IEEE 802.3 requirements.
- Designed for multiport repeater & ethernet switching hub application.
- Primary inductance (LP):350uH,min.@100KHz,0.1Vrms, 8 mA .
- Storage Temperature -25°C to +125°C.
- RoHS compliance.

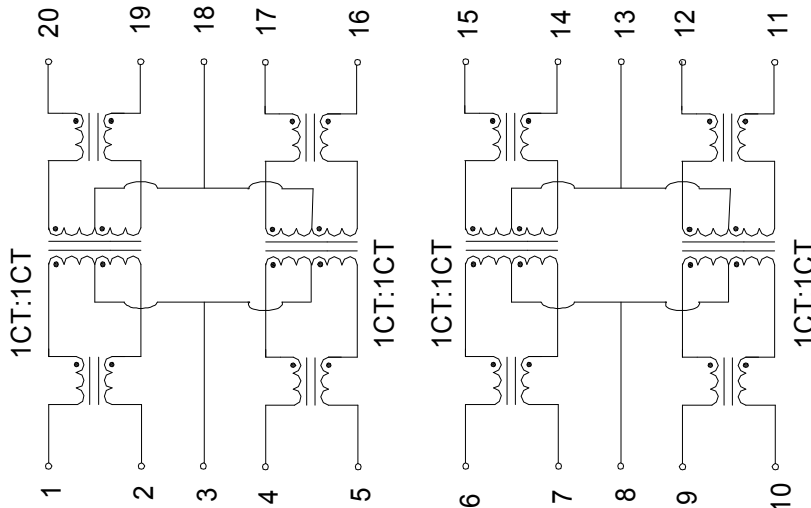
Specifications at 25°C. Operating temperature 0-70°C

Part NO	Turn Ratio RX.TX	Insertion Loss (dB max) 0.1-100MHz	Return Loss(dB min .) MHz				CMRR (dB typ.) MHz	Crosstalk (dB min .) MHz				Isolation Voltage (Vrms)
			1-30	40	50	60-80		0.1	30	60	100	
HST-2051DR	1CT:1CT 1CT:1CT	-1.1	-18	-15	-13	-12	-30	-55	-45	-40	-33	1500

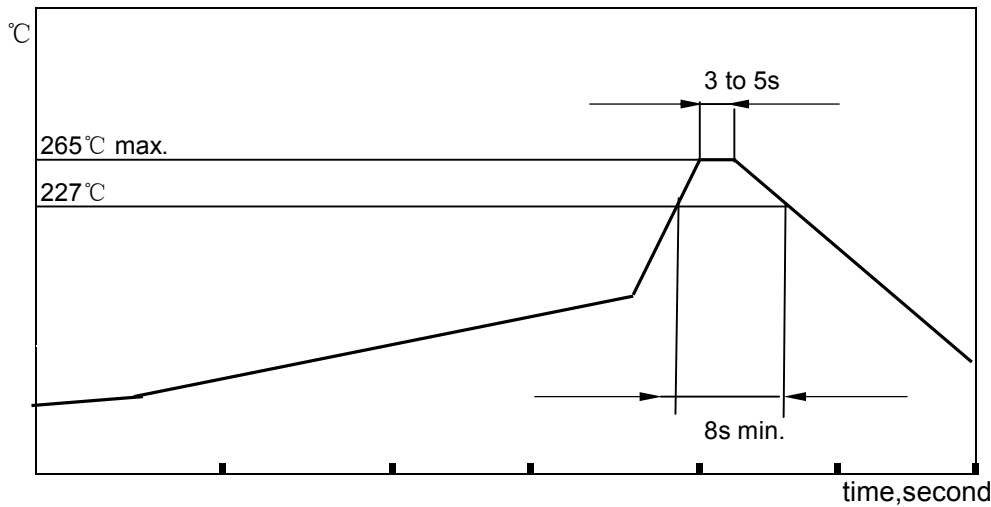
Dimension:mm(inch),Unless otherwise specified , all tolerance are+/-0.25(0.01)



Schematic:



1. Recommended Lead Free Wave Soldering Curve



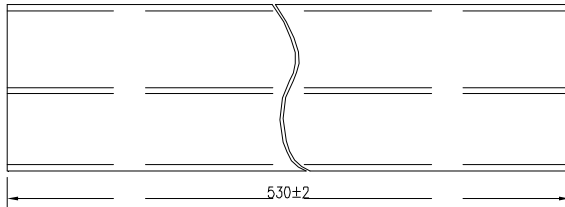
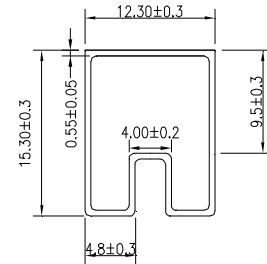
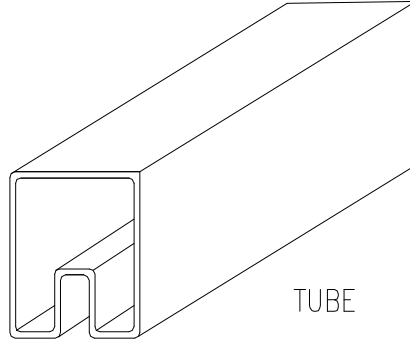
Item	Solder technique simulation	Temperature (°C)	Time (s)	Temperature ramp/immersion and emersion rate
1	Solder iron	350±10 (solder irno temp)	4~5	
2	DIP	260±5 (solder temp)	10±1	25mm/s±6mm/s
3	Wave:Topside Board-mount product	260±5 (solder temp)	20±1	
4	Wave:Bottomside Board-mount product	260±5 (solder temp)	10±1	Preheat 1°C/s~4°C/s to within 100°C of solder temp 25mm/s±6mm/s
5	Vapor phase reflow	215±5 (vapor temp)	60±5	

2. Reliability Test Criteria.

- 2.1 Operating temperature range: 0°C to 70°C
- 2.2 Terminal strength: Pull test withstand 9.8N 60+/-0.5S no looseness or movement.
- 2.3 Solderbility: Dipped in 245°C+/-5°C molten solder for 3+/-0.5 seconds,95% min shall be smooth any and bright
- 2.4 Resistance to soldering heat : Dip in 260°C+/- 5°C molten solder for 5+/- 0.5 seconds. Shall not be any abnormality.
- 2.5 Vibration: 1.5mm amplitude total excursion 10-55-10 Hz traversed in 1minute, x.y.z, axis for 2 hours. Shall not be any abnormality.
- 2.6 Random drop (Packing condition): Height 60cm, 3 times on the wood floorboard ,shall not be any abnormality.
- 2.7 Dry heat: 100+/-2°C 96 hours.
- 2.8 Cold: -20+/-2°C 96 hours.
- 2.9 Damp Heat: 60+/-2°C, 93+/-3% RH 96 hours.
- 2.10 Change of temperature: exposed 5 cycle; each consisting of 30 minutes at -20+/-2°C,2-3 minutes at 20+/-2°C,30 minutes at 85+/-2°C, 2-3 minutes at 20+/-2°C.

Remarks: After reliability test per item 7,8,9,10 in prior to the test as specified, the transformer / coil would be exposed to the room temperature for 1-2 hours,the component meets all requirements according to this specification.

Package Information:



Export Carton Box

1. Quantity per tube: 25pcs.
2. Quantity per carton: 5000pcs.
3. Carton size: 56.3*27.3*18CM³.
4. Unit weight: 2.4g.
5. Carton weight: approx. 15.5kg.



UL Online Certifications Directory

Item	Part Name	Material Description	Supplier	UL Certification No.
1	Core	Soft ferrite Mn-Zn and Ni-Zn	FuJing	N/A
2	Wire	Magnet Wire0.1mm OUEW155°C	Suntek	OBMW2. E234867
3	Case	Plastics WH-9100	WAH HONG	E150608
4	Epoxy	3300-A/B	Li Duo	E218090
5	Varnish	F-1053-2	DongFangLi ang	N/A
6	Solder	Sn99.3/Cu0.7	GaoXi n	N/A
7	Ink	VIC120	Sei Ko	N/A

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SHEN ZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO.,LTD
4-5/F, 1 BLOCK,WEITAI ROAD,YINGRENSHI INDUSTRY PARK,SHI YAN,BAO'AN SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :
LAN TRANSFORMER(DIP)

SGS Job No. : 12613105 - SZ
Tested Sample Information : CE/2009/72245
Date of Sample Received : 07 Jul 2010
Testing Period : 07 Jul 2010 - 14 Jul 2010

Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Ltd.



Annie Liang
Approved Signatory

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Test Results:

ID for specimen 1 : CAN10-029028.002
 Description for specimen 1 : "Lan transformer(dip)"(1)+"Lan transformer(dip)"(2)+"Lan transformer(dip)"(3)

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	mg/kg	IEC 62321:2008, UV-Vis	N.D.	2	1000
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit
4. "-" = Not regulated

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PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Perfluorooctanoic acid (PFOA)	mg/kg	EPA 3550C: 2007, LC-MS	N.D.	10
Perfluorooctane sulfonates (PFOS)	mg/kg	EPA 3550C: 2007, LC-MS	N.D.	10
PFOS Acid				
PFOS Metal Salt				
PFOS Amide				

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

For reference: Entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/122/EC):

- (1) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,005 % by mass.
- (2) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0,1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg /m² of the coated material.

PAHs (Polynuclear Aromatic Hydrocarbons)

Test Item(s)	Unit	Test Method	Result	MDL
Naphthalene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Acenaphthylene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Acenaphthene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Fluorene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Phenanthrene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Anthracene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Fluoranthene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Pyrene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Benz(a)anthracene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Chrysene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Benzo(b)fluoranthene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Benzo(k)fluoranthene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Benzo(a)pyrene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Dibenzo(a,h)anthracene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Benzo(g,h,i)perylene	mg/kg	ZEK 01.2-08, GC-MS	N.D.	0.2
Sum of 16 PAHs acc. US EPA	mg/kg	-	N.D.	-

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Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

ZEK 01.2-08 : Restraining maximum values for products

Parameter	Category 1 Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Category 2 Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Category 3 Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo[a]pyrene (mg/kg)	<MDL (<0.2)***	1	20
Sum 16 PAH (US EPA) (mg/kg)**	<MDL (<0.2)***	10	200

Remark : ** = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs
 *** = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

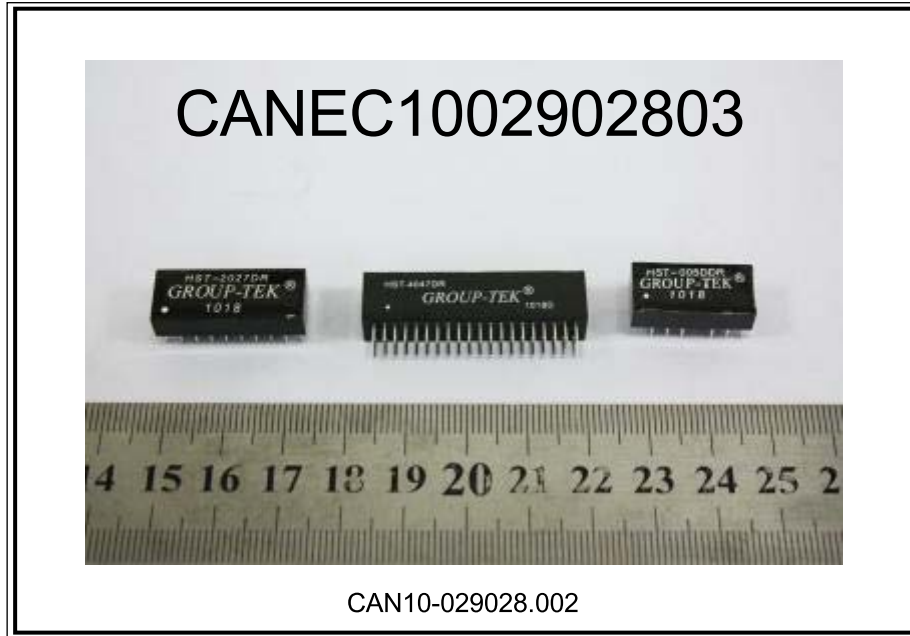
Remark 1: Result(s) of specimen shown is/are of the total weight of mixed samples

Remark 2: The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.

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Sample photo:



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*** End of Report ***

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