敏洲科技有限公司
MINGTEK TECHNOLOGY CORP.

FOR APPROVAL

WE ARE PLEASED IN SUBMITTING YOU HEREWITH OUR SPECIFICATION, DRAWING TOGETHER WITH SAMPLES FOR YOUR APPROVAL. PLEASE RETURN TO US ONE COPY WITH YOUR AUTHORIZED SIGNATURES AS APPROVED.

CUSTOMER :

DESCRIPTION : **10/100/1000 BASE-T DUAL PORT MAGNETICS MODULES**

PART NUMBER : **HN36201CG**

ISSUE DATE : **2015/05/20**

CUSTOMER'S PART NUMBER	
APPROVED DATE	
APPROVED SIGNATURE	

TEL:886-2-86717511 FAX:886-2-86717611

REGISTERED OFFICE : No.491,Dade Rd.,Sanxia Dist.,New Taipei City 237,Taiwan

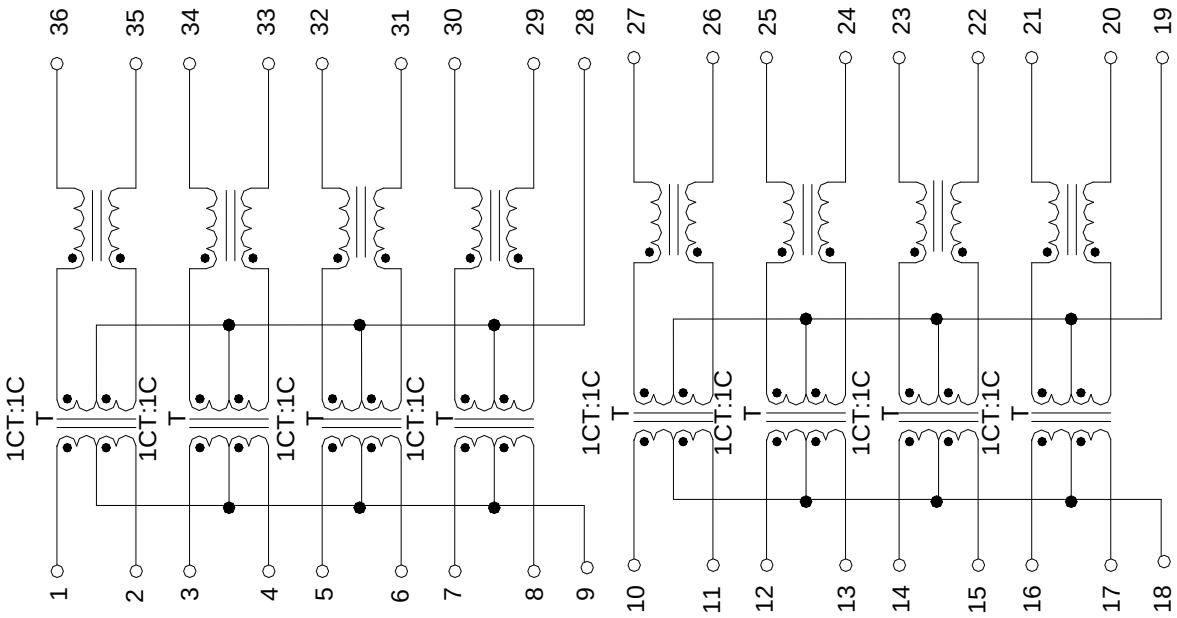
Mingtek Technology Corp.

SAMPLE TEST DATA

A. ELECTRICAL SPECIFICATIONS @25℃

Inductance OCL:	350uH Min @ 100KHz 0.2V 8mA DC BIAS	
Leakage Inductance:	0.50uH Max @ 100KHz 0.2V	
Interwinding Capacitance:	100pF TYP @ 100KHz 0.2V	
Turn Ratio:	1CT:1CT±5%	
Polarity:	1-36,3-34,5-32,7-30,10-27,12-25,14-23,16-21 In-Phase	
Insertion Loss:	1.0-100 MHz	- 1.1dB Max
Return Loss	0.5-30 MHz	- 18dB Min
	40.0MHz	- 14.4 dB Min
	50.0MHz	- 13.1 dB Min
	60-80MHz	- 12.0 dB Min
Cross Talk:	0.5-60MHz	- 40 dB Min
	60-100MHz	- 30 dB Min
DCMR:	0.5-100MHz	- 30 dB Min
Isolation HI-POT:	1500Vrms,10mA 1S	
Product Type:	Green Product	
Operating Temperature:	0℃ TO 70℃	

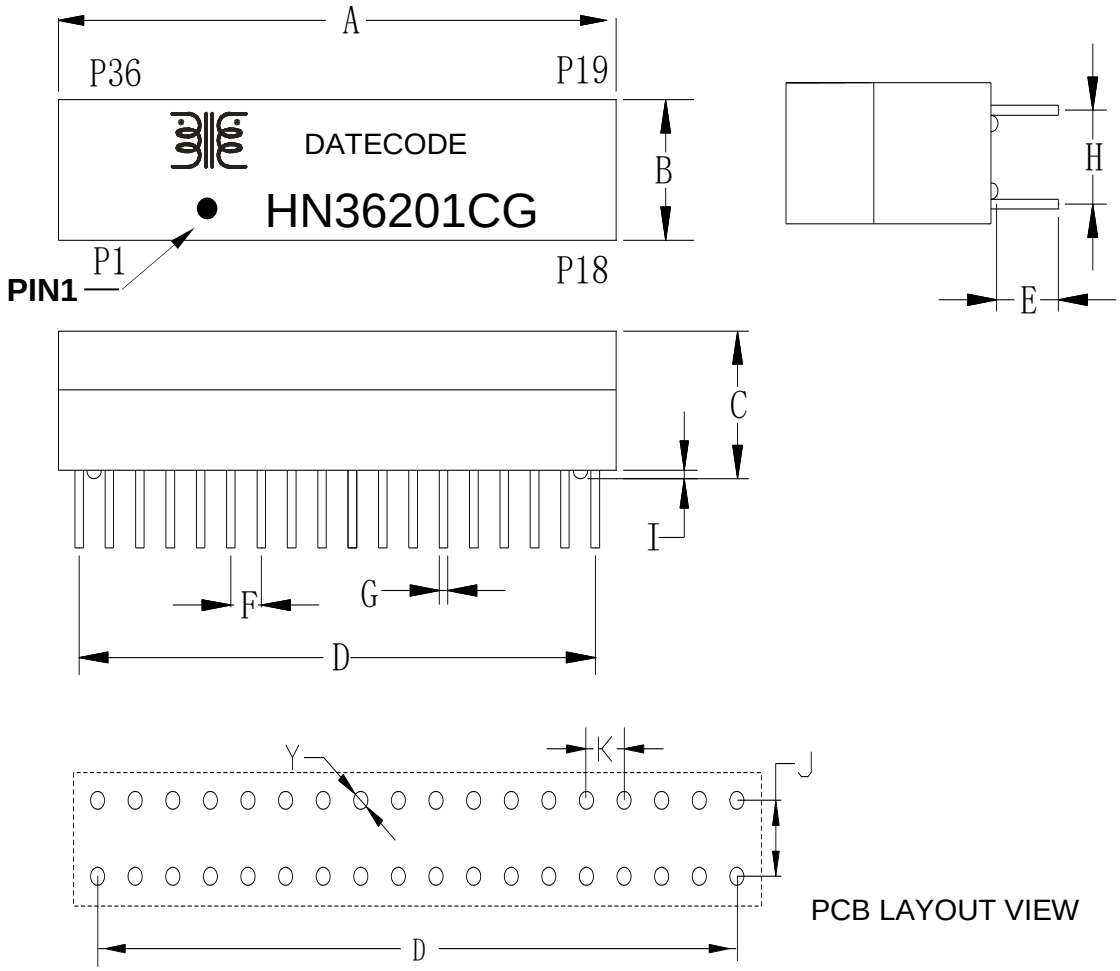
B. SCHEMATIC:



Mingtek Technology Corp.

SAMPLE TEST DATA

C. DIMENSIONS & MARKING:



PCB LAYOUT VIEW

	MILLIMETERS(mm)		INCHES(inch)	
DIM	MIN	MAX	MIN	MAX
A	32.30	34.30	1.272	1.350
B	7.80	8.80	0.307	0.346
C	12.0(max)		0.472(max)	
D	30.26(typical)		1.191(typical)	
E	2.90	3.50	0.114	0.138
F	1.78(typical)		0.070(typical)	
G	0.45(typical)		0.018(typical)	
H	4.80(typical)		0.189(typical)	
I	0.20	0.50	0.008	0.020
J	4.80(typical)		0.189(typical)	
K	1.78(typical)		0.070(typical)	
Y	0.90(typical)		0.035(typical)	

Mingtek Technology Corp.

SAMPLE TEST DATA

D. HAZARDOUS TEST REPORT:

Test Item(s)	Unit	Method	MDL	Result
Chromium VI(Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A	<100	<100
Cadmium(Cd)	ppm	ICP-AES after as per EN1122, method B:2001 or other acid digestion	2	N.D
Mercury(Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion	2	N.D
Lead(Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion	<1000	<1000
PBBs(Polybrominated biphenyls)(CAS NO:67774-32-7)	%	With reference to 83/264/EEC.Analysis Was Performed by GC/MS/ECD or HPLC/DAD/MS	0.0005	N.D
PBBEs(PBDEs) (Polybrominated biphenyl ethers)	%	With reference to 83/264/EEC.Analysis Was Performed by GC/MS/ECD or HPLC/DAD/MS	0.0005	N.D

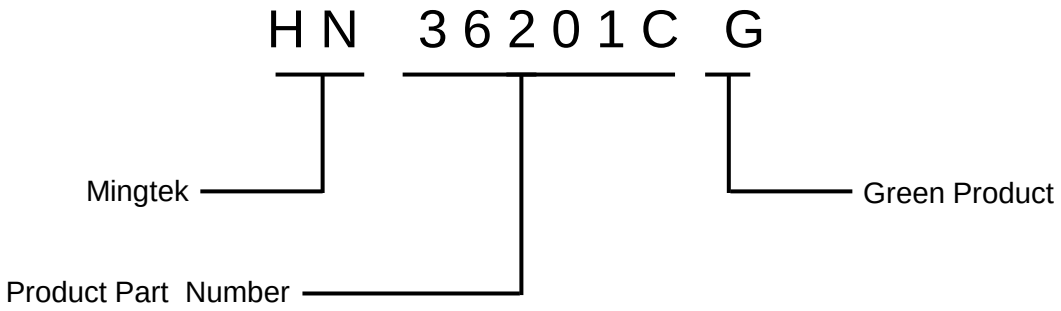
NOTE:

(1) N.D = Not detected(<MDL)

(2) ppm = mg/kg

(3) MDL = Method Detection Limit

E. PART NUMBER LEGEND:



Mingtek Technology Corp.

SAMPLE TEST DATA

SPEC	1	2	3	4	5
L:(AT 100KHz 0.2V 8mA)					
350uH Min					
1-2	542	555	568	545	513
3-4	543	546	513	543	526
5-6	516	526	506	526	543
7-8	513	528	562	506	562
10-11	526	545	543	542	565
12-13	543	555	526	555	565
14-15	562	546	543	546	516
16-17	565	536	526	526	523
Lk:(AT 100KHz 0.2V)					
0.5uH Max					
1-2(36-35 short)	0.33	0.41	0.34	0.38	0.37
3-4(34-33 short)	0.36	0.37	0.36	0.34	0.43
5-6(32-31 short)	0.39	0.33	0.30	0.36	0.36
7-8(30-29 short)	0.34	0.38	0.33	0.36	0.40
10-11(27-26 short)	0.36	0.37	0.35	0.34	0.40
12-13(25-24 short)	0.30	0.43	0.34	0.33	0.41
14-15(23-22 short)	0.36	0.36	0.39	0.36	0.37
16-17(21-20 short)	0.36	0.39	0.36	0.39	0.33
CWW:(AT 100KHz 0.2V)					
100PF TYP					
1-2 TO 36-35	86.3	85.2	84.3	86.5	82.1
3-4 TO 34-33	86.3	85.2	84.3	86.5	82.1
5-6 TO 32-31	87.3	85.2	84.1	83.5	83.9
7-8 TO 30-29	87.3	85.2	84.1	83.5	83.9
10-11 TO 27-26	88.4	87.3	85.2	86.3	87.2
12-13 TO 25-24	88.4	87.3	85.2	86.3	87.2
14-15 TO 23-22	81.3	85.2	86.5	84.2	81.8
16-17 TO 21-20	81.3	85.2	86.5	84.2	81.8

MAIN TEST EQUIPMENT

☐ CHANGCHUANG CC2670 WITHSTANDING VOLTAGE TESTER

☐ JINKAITAI 3250 AUTOMATIC TRANSFORMER TEST SYSTEM

■ TONGHUI TH2818 AUTOMATIC TRANSFORMER TEST SYSTEM

☐ RF NETWORK ANALYZERS 8712ET

Mingtek Technology Corp.

SAMPLE TEST DATA

SPEC	1	2	3	4	5
TURNS RATIO:					
(1-2):(36-35)=1CT:1CT±5%	OK	OK	OK	OK	OK
(3-4):(35-34)=1CT:1CT±5%	OK	OK	OK	OK	OK
(5-6):(33-32)=1CT:1CT±5%	OK	OK	OK	OK	OK
(7-8):(31-30)=1CT:1CT±5%	OK	OK	OK	OK	OK
(10-11):(28-27)=1CT:1CT±5%	OK	OK	OK	OK	OK
(12-13):(26-25)=1CT:1CT±5%	OK	OK	OK	OK	OK
(14-15):(24-23)=1CT:1CT±5%	OK	OK	OK	OK	OK
(16-17):(22-21)=1CT:1CT±5%	OK	OK	OK	OK	OK
HI-POT:					
AT:1500Vrms 10mA 1S					
1-2 TO 36-35	OK	OK	OK	OK	OK
3-4 TO 34-33	OK	OK	OK	OK	OK
5-6 TO 32-31	OK	OK	OK	OK	OK
7-8 TO 30-29	OK	OK	OK	OK	OK
10-11 TO 27-26	OK	OK	OK	OK	OK
12-13 TO 25-24	OK	OK	OK	OK	OK
14-15 TO 23-22	OK	OK	OK	OK	OK
16-17 TO 21-20	OK	OK	OK	OK	OK
Insertion Loss:					
-1.1dB Max(1-100MHz)					
1-2:					
30MHz	0.38	0.38	0.39	0.41	0.42
40MHz	0.38	0.39	0.38	0.41	0.41
50MHz	0.36	0.38	0.38	0.38	0.38
60MHz	0.35	0.36	0.37	0.37	0.38
80MHz	0.28	0.28	0.29	0.31	0.31
100MHz	0.27	0.28	0.28	0.29	0.27
3-4:					
30MHz	0.38	0.39	0.40	0.40	0.41
40MHz	0.38	0.41	0.38	0.41	0.41
50MHz	0.37	0.40	0.38	0.39	0.39
60MHz	0.35	0.37	0.36	0.36	0.38
80MHz	0.30	0.30	0.33	0.33	0.31
100MHz	0.28	0.28	0.28	0.30	0.29

MAIN TEST EQUIPMENT

- ■ CHANGCHUANG CC2670 WITHSTANDING VOLTAGE TESTER
- ☐ JINKAITAI 3250 AUTOMATIC TRANSFORMER TEST SYSTEM
- ■ TONGHUI TH2818 AUTOMATIC TRANSFORMER TEST SYSTEM
- ■ RF NETWORK ANALYZERS 8712ET

Mingtek Technology Corp.

SAMPLE TEST DATA

SPEC	1	2	3	4	5
5-6:					
30MHz	0.39	0.41	0.40	0.41	0.43
40MHz	0.39	0.41	0.42	0.41	0.40
50MHz	0.39	0.40	0.41	0.43	0.40
60MHz	0.36	0.39	0.37	0.37	0.37
80MHz	0.29	0.32	0.30	0.31	0.30
100MHz	0.28	0.30	0.28	0.31	0.30
7-8:					
30MHz	0.39	0.41	0.40	0.43	0.43
40MHz	0.40	0.43	0.41	0.40	0.42
50MHz	0.38	0.41	0.39	0.39	0.40
60MHz	0.36	0.38	0.39	0.37	0.38
80MHz	0.29	0.29	0.29	0.30	0.29
100MHz	0.28	0.29	0.29	0.30	0.29
10-11:					
30MHz	0.38	0.39	0.39	0.41	0.42
40MHz	0.41	0.43	0.45	0.45	0.45
50MHz	0.39	0.39	0.39	0.41	0.39
60MHz	0.37	0.41	0.40	0.41	0.38
80MHz	0.30	0.32	0.30	0.32	0.31
100MHz	0.29	0.30	0.31	0.30	0.30
12-13:					
30MHz	0.42	0.45	0.44	0.42	0.42
40MHz	0.40	0.41	0.43	0.41	0.42
50MHz	0.38	0.40	0.39	0.40	0.39
60MHz	0.36	0.38	0.37	0.39	0.38
80MHz	0.30	0.33	0.31	0.32	0.32
100MHz	0.29	0.32	0.30	0.32	0.32
14-15:					
30MHz	0.40	0.44	0.44	0.42	0.42
40MHz	0.41	0.43	0.44	0.43	0.42
50MHz	0.38	0.40	0.40	0.38	0.40
60MHz	0.36	0.38	0.39	0.39	0.38
80MHz	0.31	0.32	0.33	0.33	0.31
100MHz	0.28	0.29	0.28	0.28	0.29

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SAMPLE TEST DATA

SPEC	1	2	3	4	5
16-17:					
30MHz	0.39	0.42	0.39	0.41	0.40
40MHz	0.41	0.43	0.43	0.41	0.43
50MHz	0.39	0.40	0.39	0.39	0.39
60MHz	0.38	0.39	0.39	0.39	0.39
80MHz	0.30	0.31	0.31	0.32	0.30
100MHz	0.28	0.31	0.30	0.31	0.29
Return Loss:					
-18dB Min (0.5-30MHz)					
-14.4dB Min (40MHz)					
-13.1dB Min (50MHz)					
-12.0dB Min (60-80MHz)					
1-2:					
30MHz	24.6	26.5	26.6	25.0	26.1
40MHz	21.9	22.5	22.2	24.1	22.5
50MHz	19.1	19.9	20.7	20.9	19.9
60MHz	17.6	18.0	19.1	18.3	17.7
80MHz	15.7	16.5	16.9	16.1	16.8
3-4:					
30MHz	25.1	26.8	27.2	26.9	26.0
40MHz	22.3	23.0	23.5	23.4	24.3
50MHz	19.4	20.1	20.3	20.6	20.5
60MHz	17.9	18.6	19.5	18.4	18.6
80MHz	16.2	17.4	16.7	17.7	16.7
5-6:					
30MHz	25.1	27.0	27.0	26.8	27.5
40MHz	21.8	23.3	22.9	22.6	23.2
50MHz	20.1	21.0	21.8	20.4	20.7
60MHz	19.9	20.1	21.2	21.2	20.0
80MHz	17.7	18.2	18.0	19.1	19.1

MAIN TEST EQUIPMENT

☐ CHANGCHUANG CC2670 WITHSTANDING VOLTAGE TESTER

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■ RF NETWORK ANALYZERS 8712ET

Mingtek Technology Corp.

SAMPLE TEST DATA

SPEC	1	2	3	4	5
7-8:					
30MHz	23.8	24.1	25.5	25.6	23.8
40MHz	20.6	22.0	22.4	22.1	20.9
50MHz	18.9	19.9	19.6	20.2	19.2
60MHz	19.7	19.8	21.6	19.9	21.3
80MHz	17.6	18.8	17.8	17.6	18.2
10-11:					
30MHz	23.4	24.4	25.7	25.2	24.4
40MHz	20.8	21.3	21.0	21.3	20.8
50MHz	18.2	18.5	19.2	18.8	18.7
60MHz	17.9	18.0	18.1	19.5	18.4
80MHz	15.3	16.5	16.4	15.7	15.5
12-13:					
30MHz	25.1	26.7	26.2	25.3	26.5
40MHz	22.3	23.6	23.7	22.7	23.3
50MHz	19.4	20.2	20.3	19.7	20.3
60MHz	17.9	18.9	18.7	18.4	18.7
80MHz	16.2	17.8	17.2	17.1	17.7
14-15:					
30MHz	25.1	25.7	27.0	26.4	26.5
40MHz	22.2	22.4	22.7	22.2	23.2
50MHz	19.4	19.7	20.0	19.8	21.1
60MHz	17.8	18.7	19.2	18.2	18.1
80MHz	15.8	16.8	16.1	16.0	17.2
16-17:					
30MHz	23.6	24.6	24.4	25.8	24.9
40MHz	22.7	24.9	24.4	22.9	24.7
50MHz	19.9	20.6	21.6	21.8	20.0
60MHz	17.3	17.4	17.7	18.3	18.3
80MHz	16.8	17.7	17.0	18.4	17.1

MAIN TEST EQUIPMENT

- ☐ CHANGCHUANG CC2670 WITHSTANDING VOLTAGE TESTER
- ☐ JINKAITAI 3250 AUTOMATIC TRANSFORMER TEST SYSTEM
- ☐ TONGHUI TH2818 AUTOMATIC TRANSFORMER TEST SYSTEM
- ■ RF NETWORK ANALYZERS 8712ET

Mingtek Technology Corp.

SAMPLE TEST DATA

SPEC	1	2	3	4	5
Cross Talk:					
-40dB Min (0.5-60MHz)					
-30dB Min (60-100MHz)					
1-2 TO 3-4:					
30MHz	54.8	55.7	55.5	55.7	59.4
60MHz	49.8	51.9	53.4	50.2	50.0
100MHz	42.1	44.7	43.4	43.4	43.8
3-4 TO 5-6:					
30MHz	50.7	55.2	51.3	51.4	55.7
60MHz	45.3	46.0	45.4	45.5	49.5
100MHz	40.8	44.8	41.6	41.2	43.6
5-6 TO 7-8:					
30MHz	55.4	59.8	58.6	58.6	57.7
60MHz	52.3	53.4	57.1	56.4	57.1
100MHz	46.2	50.1	50.4	50.4	47.1
7-8 TO 10-11:					
30MHz	54.6	59.3	56.9	58.6	57.1
60MHz	51.3	55.9	53.3	56.2	55.2
100MHz	47.1	48.6	48.2	51.7	47.5
10-11 TO 12-13:					
30MHz	53.6	58.2	54.5	57.0	55.3
60MHz	51.7	56.3	55.6	52.5	53.9
100MHz	42.6	46.6	46.0	45.3	43.5
12-13 TO 14-15:					
30MHz	54.6	58.3	55.1	58.0	57.9
60MHz	47.6	48.8	50.1	50.8	51.4
100MHz	45.1	49.4	47.4	49.1	48.2
14-15 TO 16-17:					
30MHz	50.7	52.1	52.8	51.7	54.9
60MHz	45.3	47.4	46.6	46.2	48.2
100MHz	40.8	41.2	42.2	42.5	42.2

MAIN TEST EQUIPMENT

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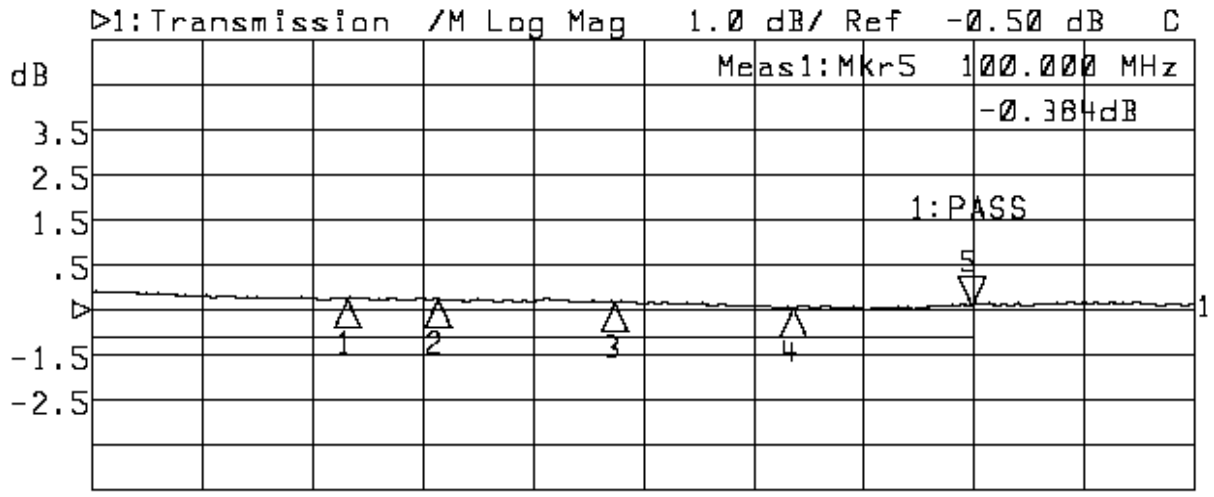
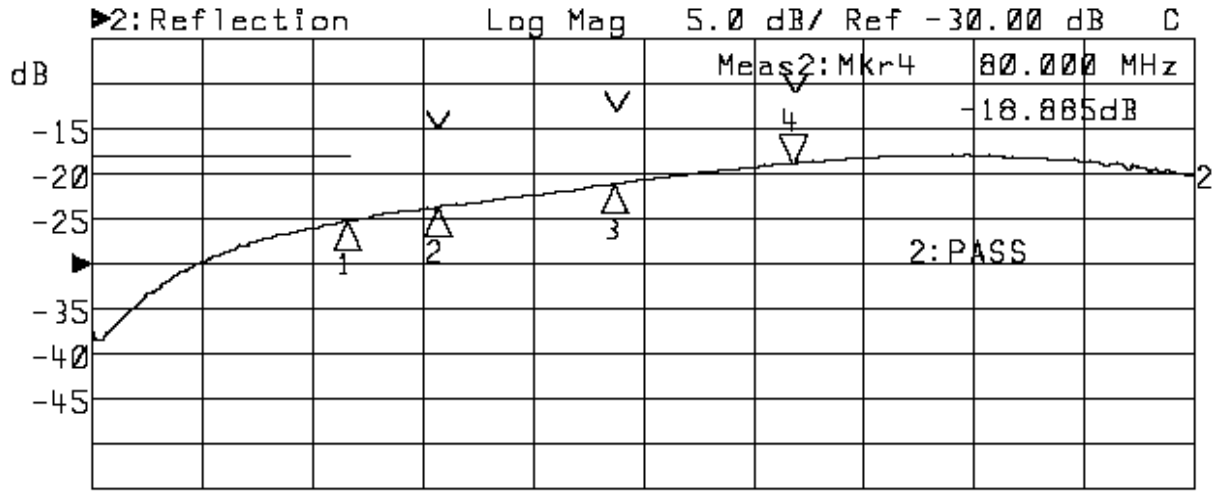
■ RF NETWORK ANALYZERS 8712ET

Mingtek Technology Corp.

SAMPLE TEST DATA

P/N:HN36201CG
NO:01
Insertion Loss and Return Loss





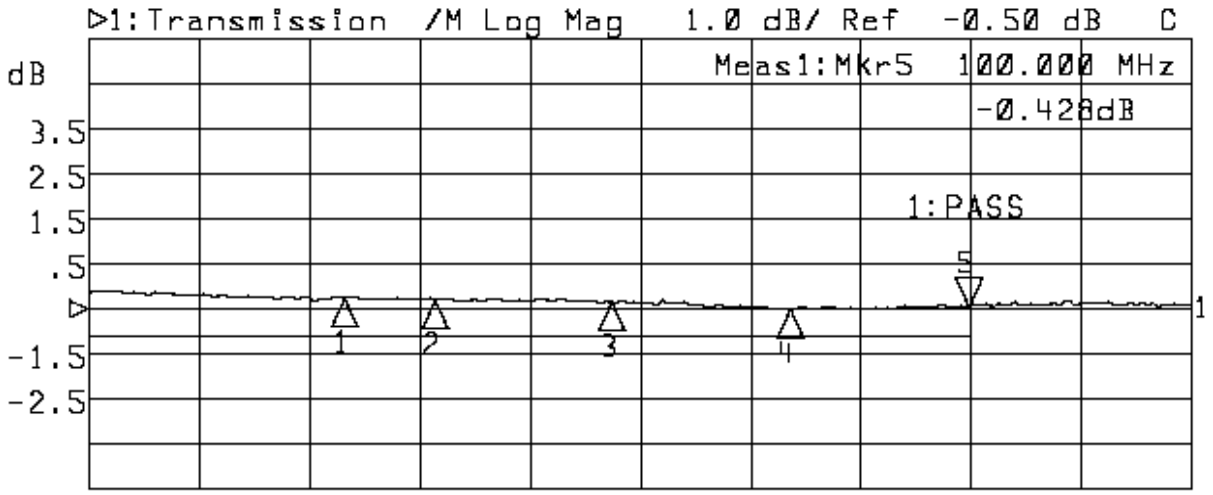
1:Mkr (MHz)		dB
1:	30.0000	-0.226
2:	40.0000	-0.259
3:	60.0000	-0.341
4:	80.0000	-0.444
5>	100.0000	-0.384

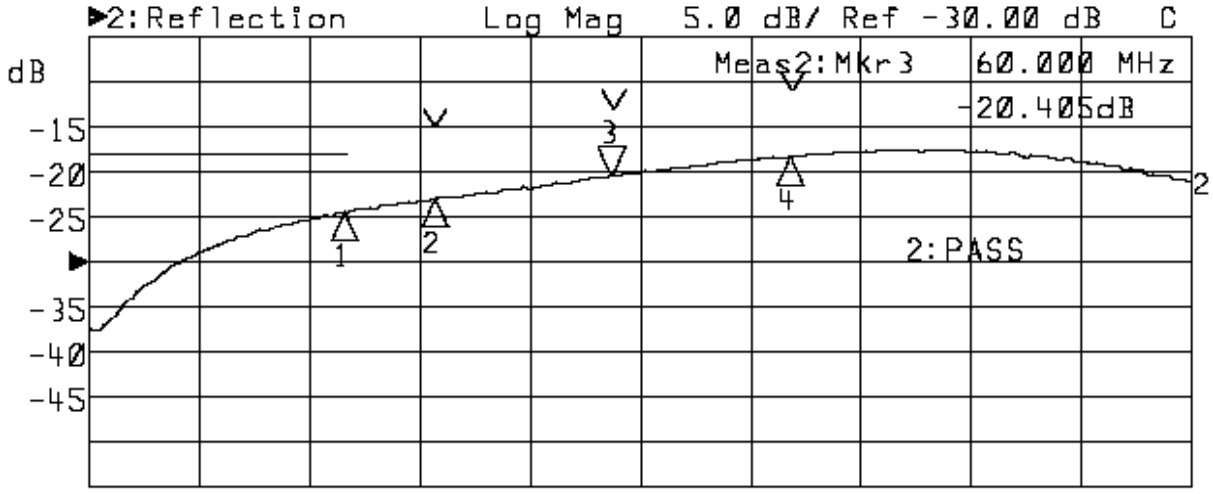
2:Mkr (MHz)		dB
1:	30.0000	-25.262
2:	40.0000	-23.701
3:	60.0000	-21.126
4>	80.0000	-18.885

Mingtek Technology Corp.

SAMPLE TEST DATA

P/N:HN36201CG
NO:01
Insertion Loss and Return Loss



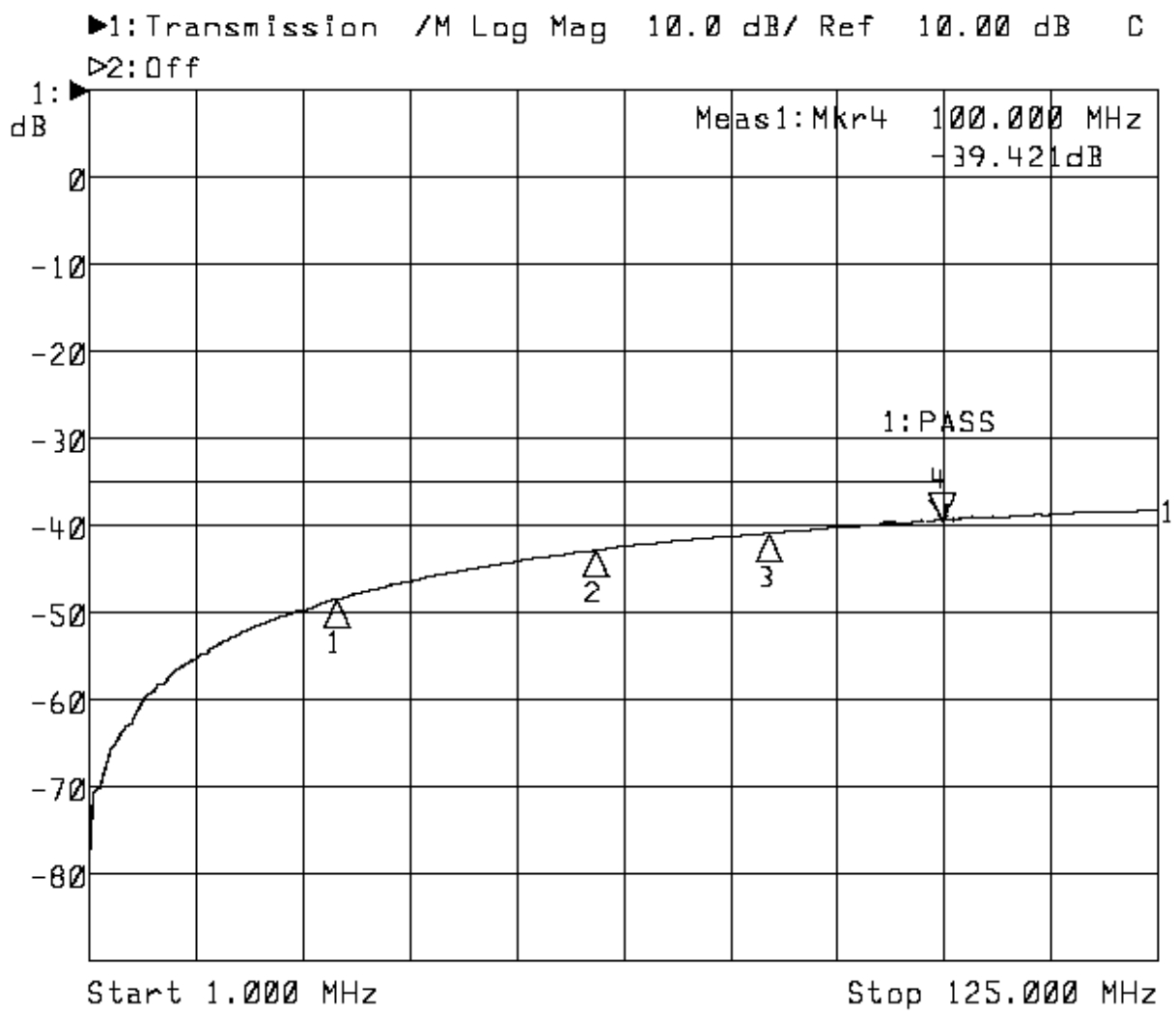


1:Mkr (MHz)		dB	2:Mkr (MHz)		dB
1:	30.0000	-0.254	1:	30.0000	-24.547
2:	40.0000	-0.275	2:	40.0000	-23.045
3:	60.0000	-0.342	3>	60.0000	-20.405
4:	80.0000	-0.497	4:	80.0000	-18.322
5>	100.0000	-0.428			

Mingtek Technology Corp.

SAMPLE TEST DATA

P/N:HN36201CG
NO:01
Cross Talk:



1:Mkr (MHz)	dB	2:Mkr (MHz)	dB
1: 30.0000	-48.428		
2: 60.0000	-42.819		
3: 80.0000	-40.900		
4> 100.0000	-39.421		

敏洲科技有限公司
MINGTEK Technology Corp.

變壓器的絕緣體與耐壓值測試表

項目	內容	規格值	實測值
1.	外　觀 Appearance	依規範	、
2.	導　體　徑　mm Bare Wire Dia	+ 0.008-0.008	0.09
3.	完 成 外 徑　mm Overall Dia	0.117-0.137	0.128
4.	針　孔　（常　態） Pin Hole（Normal State）	03 MAX	0
5.	針 孔（捲 繞，伸 長 5 %） Pin Hole（Elongated）	無龜裂	符　合
6.	絕 緣 破 壞 電 壓　V Dielectric Strength AC	3500 MIN	14000
7.	伸　長　率　% Elongation	15 MIN	44
8.	導 體 電 阻 20℃ Ω / km Condutor Resistance	2959.000 MAX	2721.000
9.	直　焊　性（400 ℃）sec Solderability	2.0 MAX	0.7
10.	耐　軟　性（200 ℃）以上 Thermoplastic Flow	無 短 路	符　合
11.	耐 熱 衝 擊（180 ℃） Heat Shock	無 龜 裂	符　合
12.	密　著　性 Adtierence	無 龜 裂	符　合
13.	耐　溶　性 Resistance to Solvent	無 龜 裂	符　合
14.	接　著　力　g Bonding Strength Test	----------	----------
15.	溶　解　性　% Solution Test	----------	----------

*針腳.腳面之上錫功能測試

1 . 上錫條件
　錫材： **Sn99.3/cu 0.7**
　助焊劑： **R Type Flux**
　錫爐溫度 ： 245 ± 5℃
　上錫時間 ： **5** 秒
2 . 在每批產品中隨機抽取**5**只做上錫功能測試
3 . 用顯微鏡檢查每只產品的任一針腳必須有 **95 %** 以上的面積上錫良好
4 . 每個經上錫測試後的產品都要測試通過後才能出貨

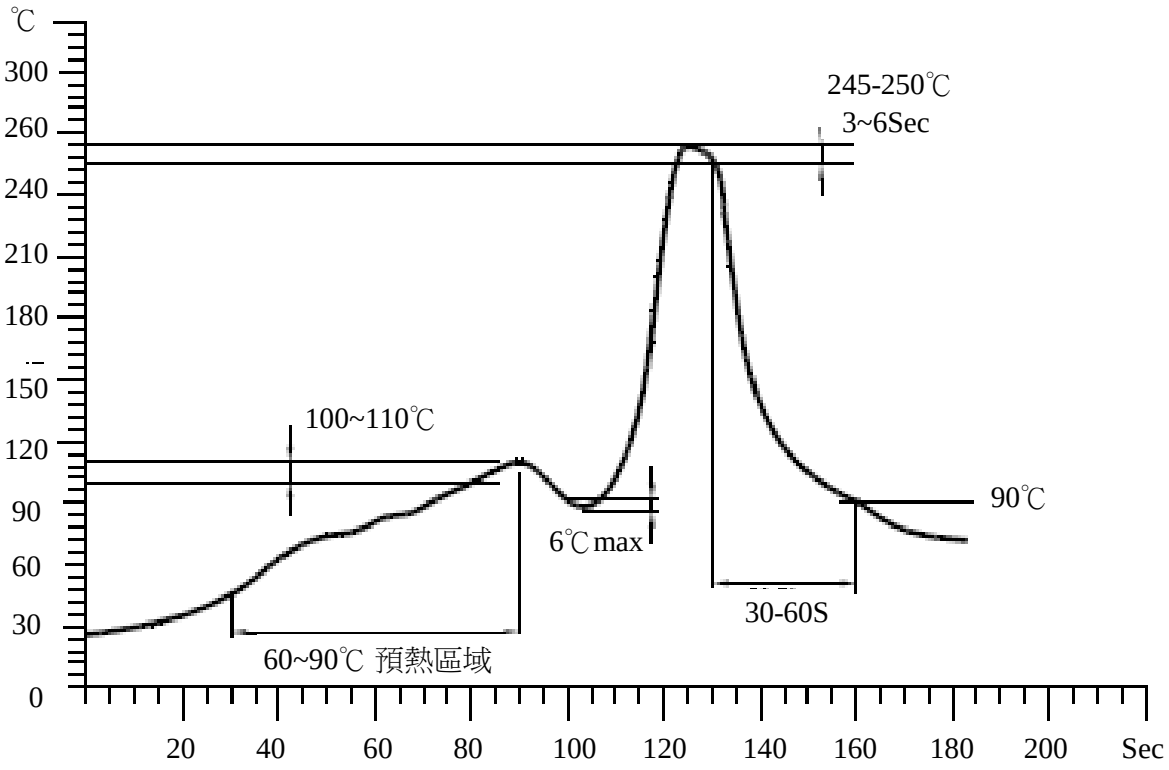
Mingtek Technology Corp.

SAMPLE TEST DATA

F: DIP無鉛產品波峰焊溫度曲線圖:

一.無鉛制程焊接條件:

1. 適用產品型號 : 所有DIP類產品
2. 焊接方式: 波峰焊接
3.焊接温度曲线(如下):



注:以上溫度曲線僅供參考

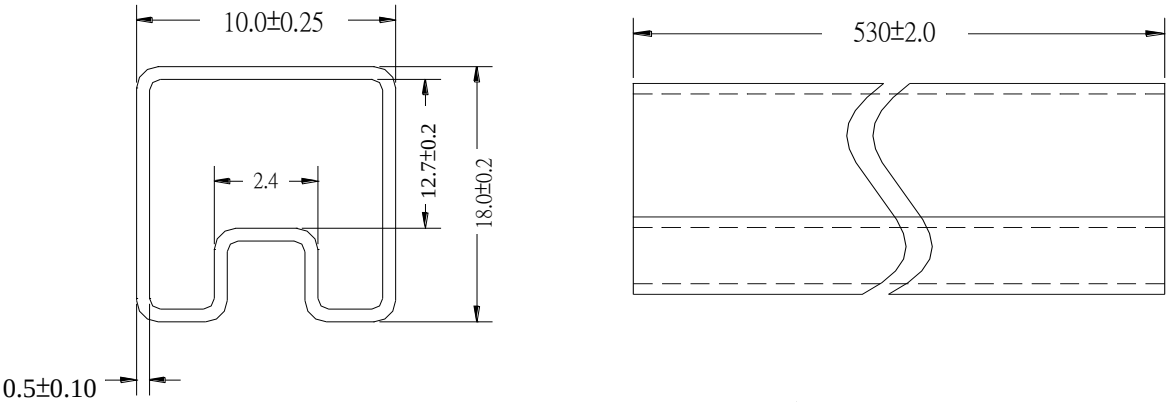
Mingtek Technology Corp.

SAMPLE TEST DATA

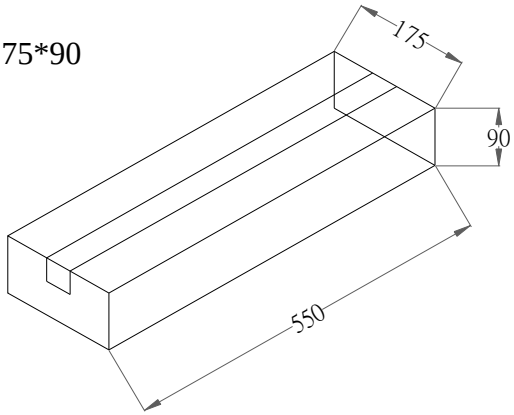
G. PACKAGE CRITERION:

1.PACKAGE MATERIAL:

1.1 Tube: 530*10.0*18.0 units: m/m

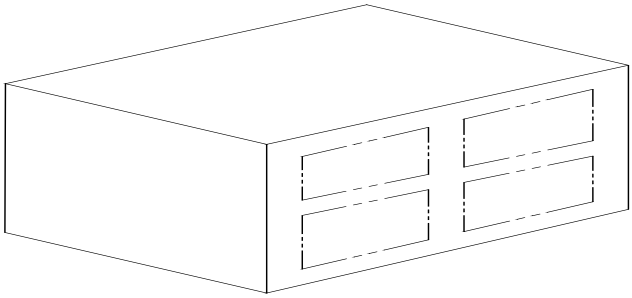


1.2.Inner Carton: 550*175*90



units: m/m

1.3.Export Carton: 560*375*205



2.PACKAGE QUANTITY

One Tube=15 Pcs

One Inner carton =720 Pcs

One Export carton =2880 Pcs