

Scanning	LIB.

RoHS

SPECIFICATION FOR APPROVAL

• CUSTOMER	: LG Electronics inc.
• ITEM	: Power Supply Unit.
• DESCRIPTION	: 32" LCD TV
• CUSTOMER P/NO	: TOP - EAY41970901 BOTTOM - EAY41971101
• SUPPLIER P/NO	: LGP32-ATN
• DATE	: 2008. 02. 05

CUSTOMER'S APPROVED * REV NO: 1.1

APPROVED		
2008 . 02 . 05 .		
LG Electronics INC. Display ENG'G DIV.		
MODEL	LGP32-ATN	
DESC	POWER BOARD	
PART NO	TOP - EAY41970901 BOTTOM - EAY41971101	
EN'GR	CHKD	APPD

	CUIT	MECH	SAFETY	EMI
CHKD				
APPD				
REMARK				

★ Safety Standard Parts [안전규격부품 List]

Power Cord, Power Plug, X/Y-Capacitor, Power Switch, Fuse, SMPS Trans, Stand-By Trans, Photo coupler, Insulation(절연) Resistor, Discharge(방전) Resistor, Fusing Resistor, FBT.CPT, CPT Socket, DY, D-Coil, Line Filter, PCB Material, Front / Back-cover Material Relay(1-2차간), Varistor, Adapter

★ EMC Standard Parts [전자규격 부품 List]

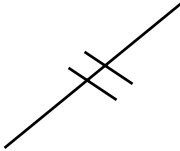
Power Plug, Line Filter, X-Capacitor, Y-Capacitor, SMPS Trans, Tuner, Saw-Filter, Shield Case, Oscillator, Pattern Change

★ Green [유해물질 확인사항]

This item must meet the standards of LG Electronics for six major substances as designated by RoHS for control.
(Cd: 10ppm under, Pb/Hg/Cr+6/PBB/PBDE: 100 ppm under)

DOCUMENTATION FOR APPROVAL

Product	LCD POWER SUPPLY UNIT
Model Name	LGP32-ATN
LG P/No.	TOP - EAY41970901 BOTTOM - EAY41971101

Written	Checked	Approved
		

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Revision history

Rev No.	Contents	Date of approval	Checked	Remark
0.1	초도 작성. Apply to PV	07.11.01	KO.Y.G	
0.2	Apply to PV (PCB REV 0.82) 1) 2차측 DIODE(D201, D203) Short시 문제점 개선. R512 : 1W / 22 Ω J → 1W / 68 Ω J 로 변경. R501 : 1 kΩ J (2012) 추가. R502 : 10 kΩ J (2012) 추가. Q505 : SBT2222A (SOT-23) 추가. ZD507 : 1N5256B, 30V (DO-35) 추가. D204 : HER108G 추가. 2) AC OVP 회로 동작 개선. R135 : 100 kΩ J (2012) 추가. 3) AC DETECT 회로 동작 개선. R109 : 4.7kΩ J (2012) 추가. C102 : 470pF K (2012) 추가. R219 : 33 kΩ J (2012) -> 10 kΩ J (2012) 로 변경. 4) 5.2V 출력 부하 감소에 따른 부품 삭제.(6.5A -> 3.5A) D202 : FMEN-210A (100V / 10A, TO-220FP) 삭제. 5) 5.2V 출력 Max Load시 Regulation 보완 . R202 : 470 Ω J (2012) → 1 kΩ J (2012) 로 변경. 6) 2차측 DIODE(D251, D252) Short시 문제점 개선. R126 : 1 kΩ J (2012) → 330 Ω J (2012) 로 변경. R129 : 1W / 47 kΩ J → 1W / 10 kΩ J 로 변경.	07.11.23		
0.3	Apply to PQ (PCB REV 0.85) 1) EMI 문제점 개선. FB110, FB501 : BEAD (BFS3550 R2F) Radial Single Bead 추가. FB201 : BEAD (BFD3565 R2F) Radial Dual Bead 추가. FB111, FB601 : BEAD (BFS3550 A0L) Radial Single Bead 추가. C125, C607, C611 : 1KV 221K 추가. R602 : 22Ω J (2012) -> 33Ω J (2012) 로 변경. 2) 낙뢰 개선. R110 : CRS 1/4W 2R2 ohm J추가. 3) DPM 개선. R111,R112,R113,R114 : 470KΩ J (2012) -> 1MΩ J (2012) 로 변경. R115 : 7.5KΩ J (2012) -> 20KΩ J (2012) 로 변경. R226 : 4.7KΩ J (2012) -> 삭제. 4) Min. Load시 16V, 24V 출력 전압 불안정 개선. R122 : 2.4K J (2012) -> 4.7K J (2012) 로 변경. R123 : 1K J (2012) -> 2.7K J (2012) 로 변경. C125 : 220pF/1kV 삭제. 5) PFC Current 왜곡 개선. C604 :100nF K (2012) -> 1uF K (2012) 로 변경.	07.12.03		

Revision history

Rev No.	Contents	Date of approval	Checked	Remark
1.0	Apply to MP (PCB REV 1.0) 1) 낙뢰 개선. FB201 : BEAD (BFD3565 R2F) Radial Dual Bead 삭제. HS3 : Leg Pattern Floating.	07.12.15		
1.1	Apply to MP (PCB REV 1.1) 1) Varistor(VA101) Lead의 Solder Crack 개선. EL24, EL25 : EYE-LET (DEYP-1630) 추가. 2) 5.2V DC 출력 OCP Point 사양 변경. Min 10.0A → Min 8.5A 로 변경. 3) PFC 400V Pattern과 1차 GND Pattern 사이의 절연거리 개선. 각 홀 4개 추가. 4) 1차측 Heat Sink에 “ Caution High Voltage! ” 문구 삽입. 5) PCB P/N (EAX44036801) Top Silk에 추가 삽입.	08.01.17		

POWER SPECIFICATION

1. INTRODUCTION

1.1 Product Description

This specification defines the input, output, performance characteristics, environment, noise and safety requirements for a LCD power supply.

1.2 Parameter Specification

Unless specification otherwise, all parameters must be met over the limit of temperature Load, and input voltage.

2. ELECTRICAL REQUIREMENTS

2.1 Input Requirements

2.1.1 Input Voltages

- Normal Voltage: 100 ~ 240 Vrms
- Voltage Range : 90 ~ 264 Vrms

2.1.2 Input Frequency

- Normal Frequency: 50 ~ 60Hz
- Frequency range : 47 ~ 63Hz

2.1.3 Input Current

- under 3.0 Arms at 100Vac & load Max

2.1.4 Configuration

- 3 Conductors (Live, Neutral, F.G)

2.1.5 Input Fuse

- The live line side of the input shall have a fuse.

2.1.6 Primary Over Current Protection

- An adequate internal fuse on the AC input line shall be provided.

2.1.7 Inrush Current

The inrush current of power supply shall be less than the rating of its critical components (including bulk rectifiers and surge limiting device) for all condition of line voltage of 2.1.1

- Cold start: under 80Ap-p at AC 220Vac (Wall-Out)

2.1.8 Efficiency

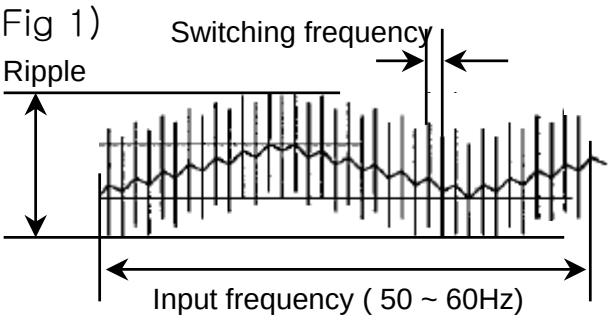
The power supply efficiency shall be more than 80% at Max load as specified in paragraph 2.2.1 with the AC input set at the nominal voltage.

2.1.9 Power Factor

- over than 0.9 at 90 ~ 264Vac & max load condition.

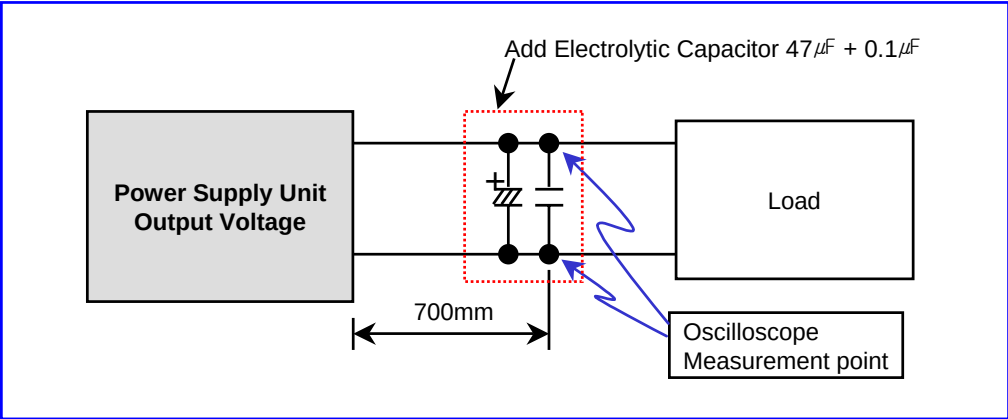
2.2 Output Requirements
2.2.1 Electrical characteristics

NO	ITEM	CONDITION		Specification			
1	Output Voltage	Rating	Load MAX	St/by 5.2V	Vo1 12V	Aod 16.5V	INV 24V
		Tolerance		±5%	±5%	±7%	±5%
		RIPPLE (mV)	Load Max (*1)	400	350	400	480
		Cross reg1	1. Other: Max	±5%	±5%	±7%	±5%
		Cross reg2		±5%	DON'T CARE		
2	Load Current	TOTAL Max.	Test & Aging Standard	3.5A	2.0A	1.3A	4.0A
		Each line Max	Not total power 순시 전류	-	-	-	-
		Min-1	Off Mode	0.06A	-	-	-
		Min-2	ON Mode	0.7A	0.35A	0.04A	0.8A
3	Inrush Current	Inrush	Possible Range Refer (주 2)	TBD	TBD	TBD	TBD
		Duration		TBD	TBD	TBD	TBD
4	OCP	Range [A]	1.Check LINE: Vaiaable 2.Other : Load Max	Min 8.5A	Min 4.0A	Min 6.0A	Min 7.0A
5	OVP	Range [V]		-	-	-	-
6	SCP	Yes,NO	1.Check Line: Short to GND 2.Other : Load Max	Yes	Yes	Yes	Yes



- *1) Ripple Test**
1-1) Test 방법 : Ripple test는 fig 1을 따른다
1-2) Test Point : power output 각 pin
1-3) Probe 양단에 47uF & 0.1uF를 병렬로 연결한다.
1-4) Scope의 Bandwidth는 20MHz로 Setting한다.
- *2) Inrush current**
2-1) power가 cover할 수 있는 range를 의미함.
2-2) spec over시 voltage dip,부품 dead가능성 있으므로
명기된 spec 이상 사용하지 말 것.
- *3) Load current : 업체 Aging / RQA test standard**
- * Power On/Off Voltage : 3V ~ 5V**

주4) Test Point : power output 각 pin



※ Ripple and noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and 47uF electrolytic capacitor. (connected parallel)

2.2.2 Output Voltage Requirement

The total output voltage regulation shall be $\pm 5\%$, including the effects of line voltage variation, load current, ripple and noise, and the AC component of the load Current.
The effect of dynamic load changes is not included in this limit.

2.2.3 Overshoot

The output overshoot at turn –on shall not exceed 10% of normal voltage value with or without the load connected.

2.2.4 Hold up Time

The power supply shall maintain voltage regulation within the specified limits in paragraph 2.2.1 for at least 20ms after lost of input voltage measure at 100Vac and at maximum output load.

2.2.5 Output Rise Time

At turn on the rise time of output voltage shall be less than 20msec.
※ Measured from the 10% point to the 90% point of the normal
(INVERTER Voltage +24V Shall be more than 20ms)

2.2.6 STAND BY POWER CONSUMPTION

Output Voltage	Stby 5.2V	12V	16.5V	24V
Load [A]	0.06A	Don't Care (POWER –OFF)		
Wattage [w]	0.9W Under (230Vac / 50Hz)			

☞ Test condition

- Temperature: 25℃ room temperature
- Test equipment: Electronic load → CR-mode (Continuously resistance)

2.3 Power Output Protection

2.3.1 Over Current Protection(OCP)

The power supply shall not be damaged by over current load.
The OCP function must be operated if current exceed maximum rating.
☞ The OCP point is measured when other output load is a maximum.
At this time, no hardware failure and No fire, when the output voltage decrease to 0V(shutdown)

2.3.2 Over Voltage Protection(OVP)

The voltage will not exceed the upper trip limit.
Noise spikes that exceed the lower trip limit for less than 10µs will not clamp the output voltage to zero.

2.3.3 Short Circuit Protection(SCP)

An output short circuit is defined as output impedance of less than 0.1 ohms.
The power supply shall not be damaged by short between DC output and DC ground.

3. RELIABILITY

3.1 Mean Time Between Failure (MTBF)

The power supply shall be designed and produced to have a mean time between failures (MTBF) Of 40,000 operating hours at 90% confidence – level while operating under the following condition.

- AC input voltage : 100Vac and 240Vac
- Duty cycle : 6hours ON, 2hours OFF
- Ambient Temp. : 25 ± 2℃
- Humidity : prevailing condition

3.2 Life/Power On Hours

The power supply must be designed to operate for 40,000 power on hours.
About 5 years at an ambient temperature of 25℃

3.3 Burn-in Test Condition

More than 4 hours at 40℃(±5℃), Normal input voltage.
AC on/off must be test 1 time after burn-in.

Output Voltage	St/by 5.2V	12V	16.5V	24V
Aging Load [A]	3.5A	2.0A	1.3A	3.2A

☞ Test condition

- Test equipment: Electronic load → CR-mode (Continuously resistance)

4. SAFETY & EMS**4.1 Earth Leakage current**

The power supply leakage current shall be less than 0.7mA at 100Vac ~ 240Vac
(peak치 0.7mA, rms 0.5mA 이하)

4.2 Hi-Pot Test (Dielectric withstand voltage)

- ① Live & Neutral to Secondary touchable metal : 2.5KVac or 3.54KVdc / 3 sec.
- ② Live & Neutral to Secondary GND : 1.5KVac or 2.121KVdc / 3 sec.
→ 1.5KVac for 3 second (mass production)
- ※ Cut-off current : 10mA

4.3 Insulation Resistance

Insulation resistance shall be more than 8MΩ at 500Vdc between primary Live, Neutral line and secondary..

4.4 Input AC Surge

The power supply withstand 300Vrms input for 10 seconds.

4.5 Surge & Impulse Test

- ① Surge Immunity : ±4kV(L1 ~ L2) 3 time, ±4kV(L1 ~ FG, L2 ~ FG) 3 times
- ② Impulse Noise Test : 2kV, Normal/Common mode, Polarity(+,-) / Phase(0° ~ 360°)
- ③ Lightning Test : ±2kA, LG equipment 기준(각line, 각condition당2회, total8회)

4.6 RFI / EMI Standards

The power supply shall comply with a following RFI/EMI standards when tested in a system configuration.

- F.C.C federal rules and regulations part 15, sub parts B computing device.
- CISPR22, class B. "NORDIC/EUROPE"

The limits shall be met with a margin of at least more than 6dB at all applicable frequencies.

4.7 Safety Standards

The Power Supply Unit shall be tested with the following safety standards.

- UL1310, UL1950 (Safety of information technology equipment) listed. "USA"
- CSA C22.2, NO234 level 3 output, class 2 output. "CANADA"
- CB Report : IEC60065, IEC60950

5. ENVIRONMENT REQUIREMENTS**5.1 Temperature**

- Operating Temp. : -10 ~ 40℃ (60℃: No H/W failure, Set condition)
0 ~ 70℃ (Only PSU)
- Storage Temp. : -20 ~ 70℃

5.2 Humidity

- Operation humidity : 30 ~ 85% non-condensing
- Storage humidity : 5 ~ 90% non-condensing

5.3 RoHS : Phase III / Level 5 / Pb-free

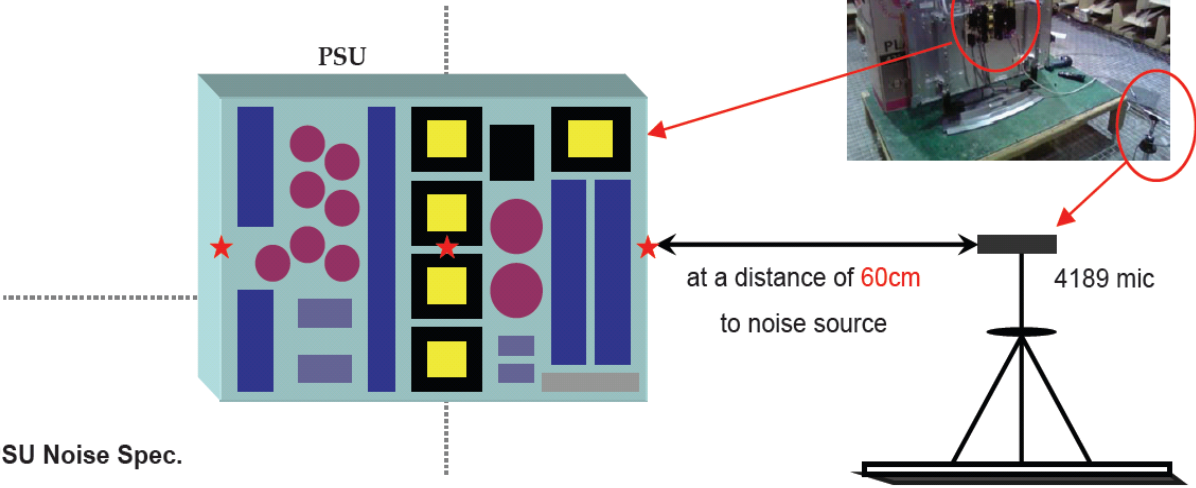
6. Sound noise characteristics

Electrical specification

LGE Confidential

6. Sound noise characteristics

PSU NOISE MEASURE POINT



PSU Noise Spec.

22.5 dB(A)/ 20.0u Pa 2.00E-5 Pa
(1/1 octave, A-weighting, to 1khz ~ 16khz Total overall

Measure Location : Anechoic Room
Measure Condition : at a distance of 60cm mic.
Full white pattern, at AC 110V/ 220V
The max specification (measure 3 points, at PSU center and left & right on the outside)

7. CONNECTORS

7.1 Pin Configuration & Connector

SC100(YW396-03AV)

Pin No.	INPUT name
1	Live
2	Nuetrial

P203(20010WS-14)

Pin No.	Output name
1~5	24V
6~10	GND
11	BRI
12	I-C
13	DIM
14	ERR

P202(20010WS-12)

Pin No.	Output name
1~5	24V
6~10	GND
11	BRI
12	I-C

P201(SMW200-24C)

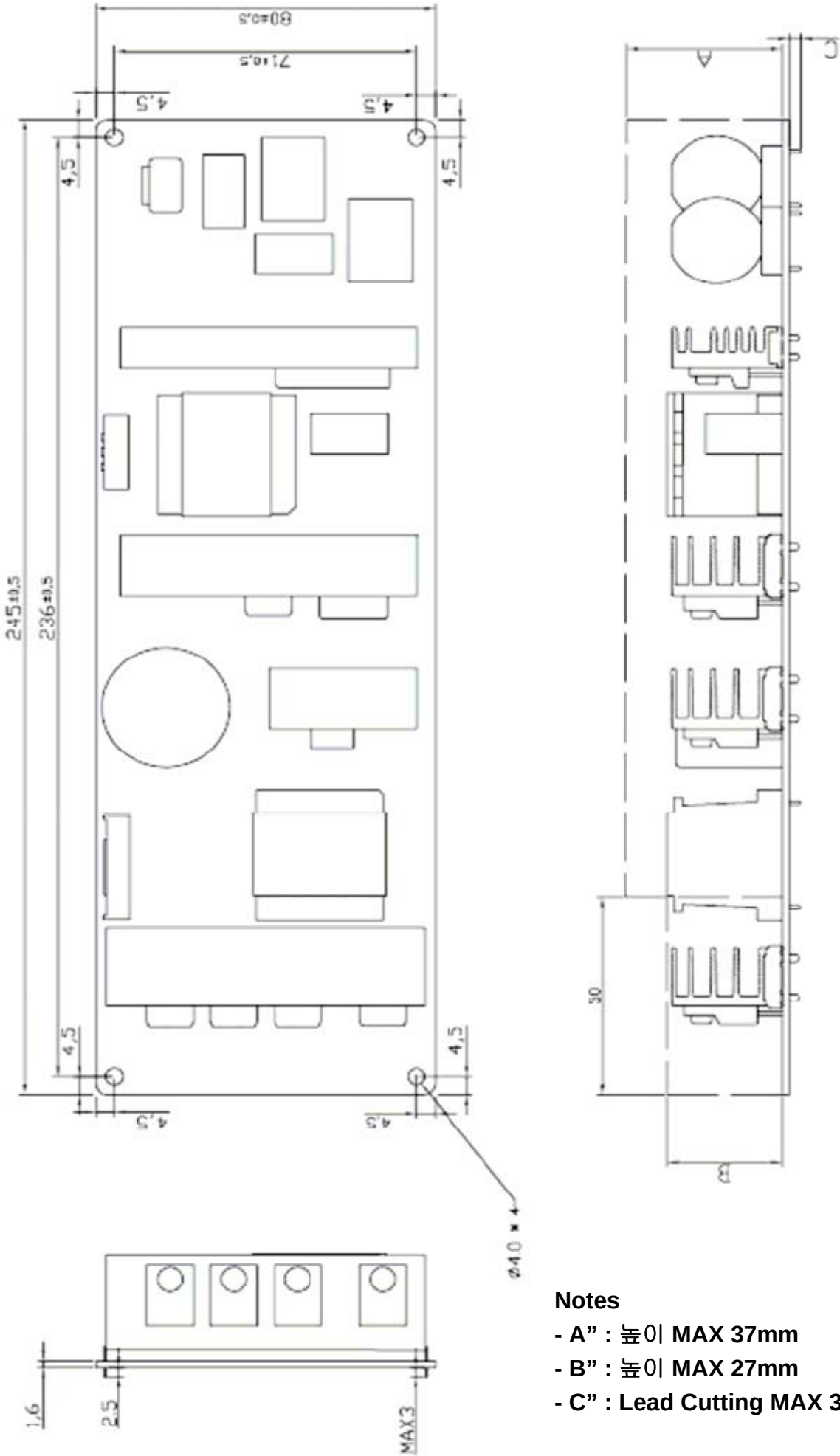
Pin No.	Output name	
1 ~ 2	16.5V	
3 ~ 4	GND	
5 ~ 6	12V	
7 ~ 8	GND	
9 ~ 12	5.2V	
13 ~ 16	GND	
17 , 18	ERROR	ACD
19 , 20	POWER ON/OFF	INV ON ON/OFF
21 , 22	BRI	PWM-D
23 , 24	NC	NC

Technical drawing of a machine tool table. The top view shows a rectangular table with overall dimensions of 1800 ± 0.5 mm by 870 ± 0.5 mm. The width of the table is divided into sections of 4.5 mm, 780 ± 0.5 mm, and 4.5 mm. The depth of the table is divided into sections of 4.5 mm, 1710 ± 0.5 mm, and 4.5 mm. The side view shows the table's profile with a maximum height of 1.6 mm and a maximum width of 2.5 mm. The drawing includes a note: "Notes: - A' : MAX 22mm - B' : Lead Cutting M".

Notes

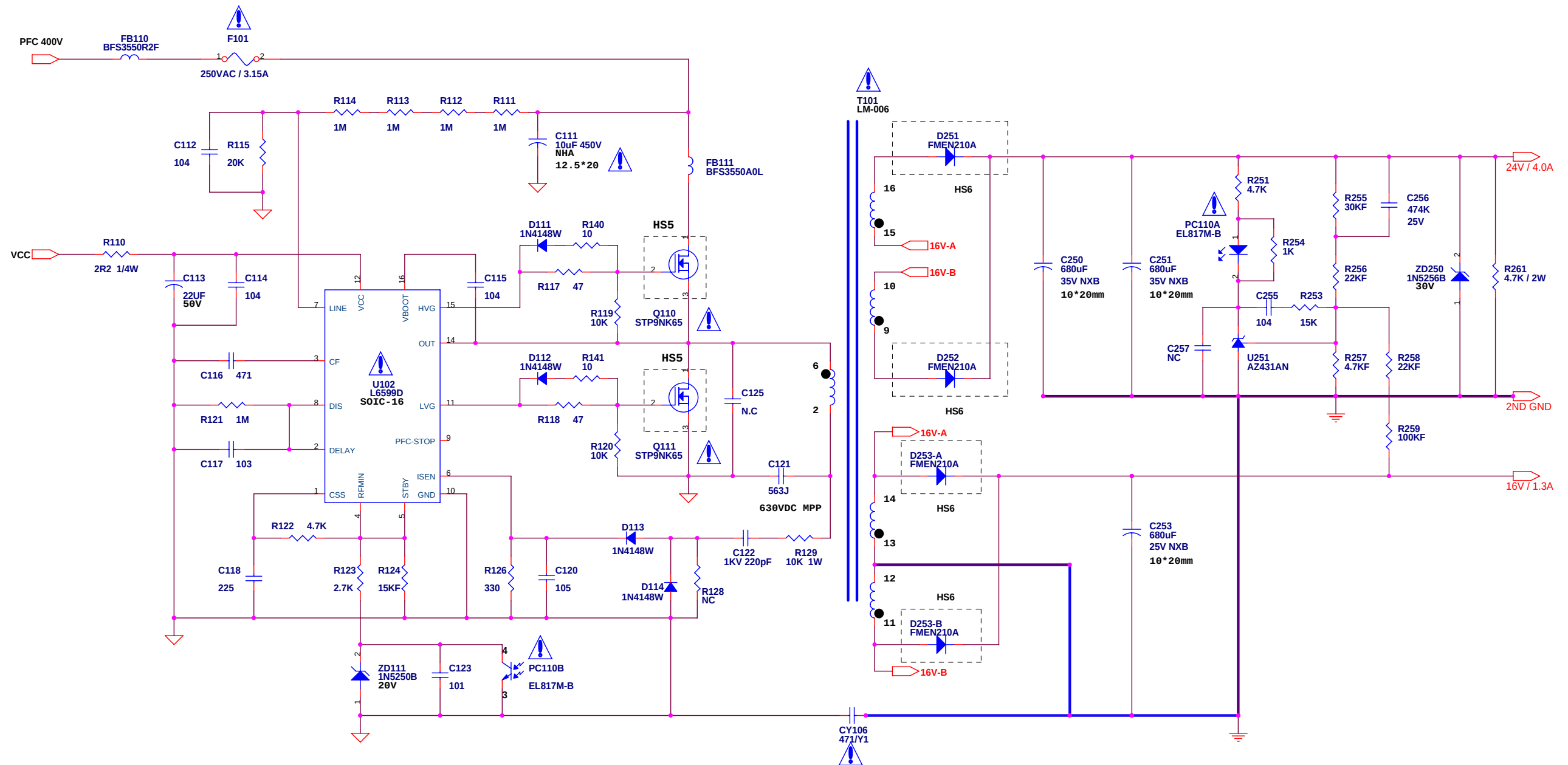
- A" : 높이 MAX 22mm
- B" : Lead Cutting MAX 3mm

8. PCB Dimension – Bottom – EAY41971101



- Notes
- A" : $\phi 0$ MAX 37mm
 - B" : $\phi 0$ MAX 27mm
 - C" : Lead Cutting MAX 3mm

4. SCHEMATIC



YUYANG TELECOM CO.,LTD
LGP32-ATN_TOP
DATE : 2008. 01. 31
MP (REV 1.1)

P201
SMW200-24C

16V	16V
GND	GND
12V	12V
GND	GND
5V	5V
5V	5V
GND	GND
GND	AGND
Error out	ACD
Power On	Inverter On
A_DIM	PWM_DIM
Select	Sync

P203
20010WS-14P

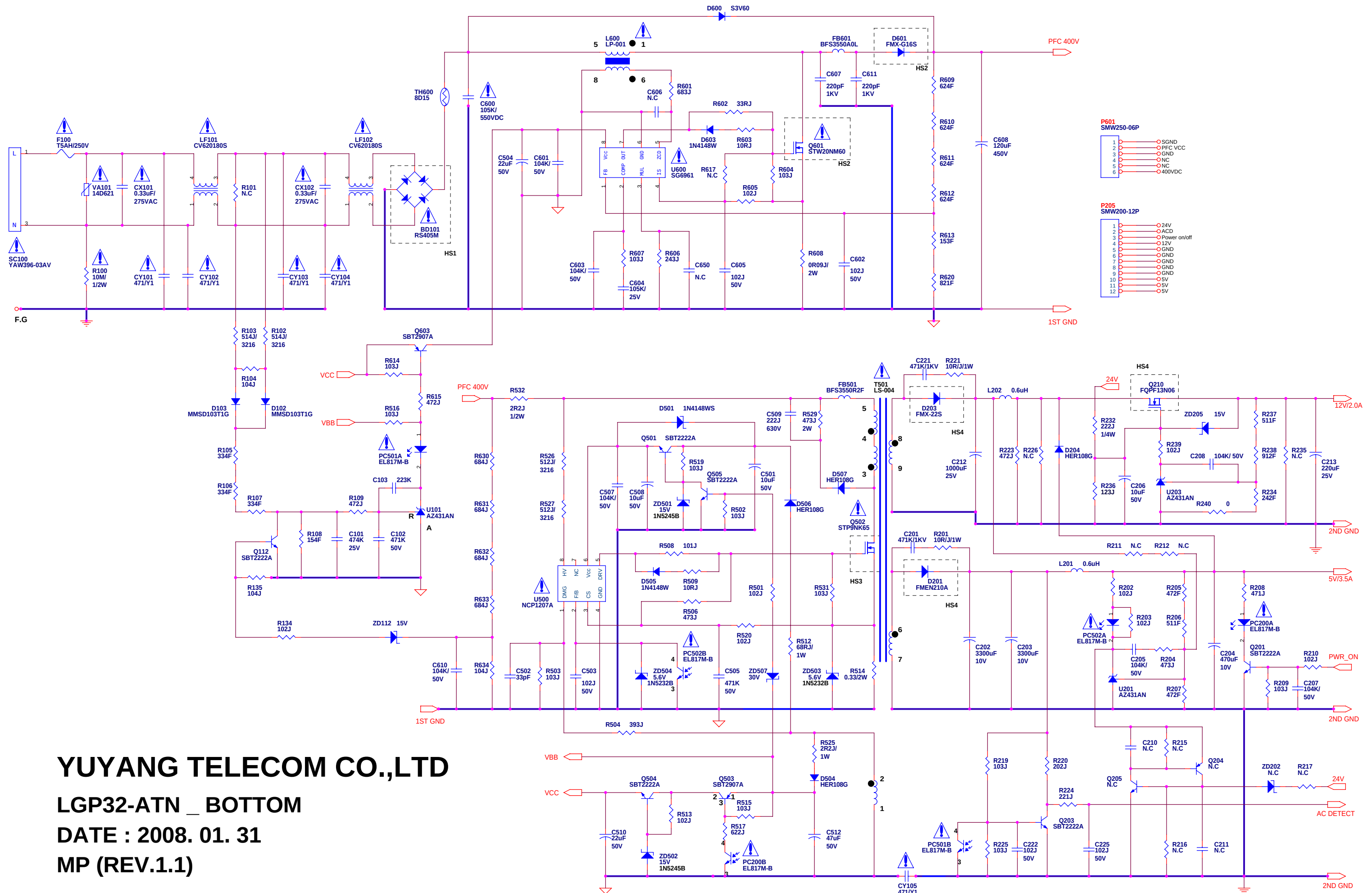
1 24V
2 24V
3 24V
4 24V
5 24V
6 GND
7 GND
8 GND
9 GND
10 GND
11 BRI
12 INV
13 DIM
14 ERR

P101
SMW250-06P

1	SGND
2	PFC VCC
3	GND
4	NC
5	NC
6	400VDC

P206
SMW200-12P

1	24V
2	ACD
3	Power on/off
4	12V
5	GND
6	GND
7	GND
8	GND
9	GND
10	5V
11	5V
12	5V



5. PART LIST

LGP32-ATN _ TOP BOARD PART LIST

NO	공정	품목 코드	품명	DESCRIPTION	Q'ty	단위	VENDOR	RoHs	REFERENCE
1	A	29661 29660	PCB	PCB : LGP32-ATN-Top(180*87mm), FR-1 1.6t, Ver:1.1	1	Pcs	DAEDUCK DUCKSUNG	0 0	
2	A	25788	BEAD	BFS 3550R2F	1	Pcs	SAMWHA	0	FB110
3	A	24956	BEAD	BFS 3550A0L	1	Pcs	SAMWHA	0	FB111
4	A	28449	CAPACITOR-ELEC	NXB 25V 680M TP(10x20mm)	1	Pcs	SAMYOUNG	0	C253
5	A	26924	CAPACITOR-ELEC	NXB 35V 680M TP(10x20mm)	2	Pcs	SAMYOUNG	0	C250,C251
6	A	24818	CAPACITOR-ELEC	KMG 50V 22M TP(5x11mm)	1	Pcs	SAMYOUNG	0	C113
7	A	29458	CAPACITOR-ELEC	NHA 450V 10M TP(12.5x20mm)	1	Pcs	SAMYOUNG	0	C111
8	A	28542	CAPACITOR-CERAMIC	EKR 3A 221K 06FK (5mmPitch)	1	Pcs	SAMWHA	0	C122
9	A	28167	DIODE-ZENER	1N5250B(20V), DO-35	1	Pcs	VISHAY	0	ZD111
10	A	29460	DIODE-ZENER	1N5256B(30V), DO-35	1	Pcs	VISHAY	0	ZD250
11	A	28663	EYELET	DEYP-1630	8	Pcs	삼성JS	0	EL15-16, EL28-29, EL31-32, EL34-35
12	A	29598 27369	FUSE CLIP	AFC-520	2	Pcs	삼성JS DAERIN	0 0	F101A, F101B
13	A	20189	JUMPER	0.6PHI 52MM TAPING(자삽용)	19	Pcs	TPI	0	J4-J12, J15, J17-J18, J21, J28-J29, J32, J39, J44, J45
14	A	29886	RESISTOR-C/R	CRS 1/4W 2R2 ohm J TP	1	Pcs	ABCO	0	R110
15	A	29775	RESISTOR-M/O	MOR 1W 10K ohm J TP, R-FORM	1	Pcs	ABCO	0	R129
16	A	29619	RESISTOR-M/O	MORS 2W 4.7K ohm J TP, Mini	1	Pcs	ABCO	0	R261
17	S	26896	CAPACITOR-SMD	CC 0805 NPO 101J 50V CT,100PF	1	Pcs	PILKOR	0	C123
18	S	26900	CAPACITOR-SMD	CC 0805 X7R 471K 50V CT	1	Pcs	PILKOR	0	C116
19	S	26898	CAPACITOR-SMD	CC 0805 X7R 103K 50V CT	1	Pcs	PILKOR	0	C117
20	S	23587	CAPACITOR-SMD	CC 0805 X7R 104K 50V CT	4	Pcs	PILKOR	0	C112,C114,C115,C255
21	S	26879	CAPACITOR-SMD	CC 0805 X7R 105K 25V CT	1	Pcs	PILKOR	0	C120
22	S	27109	CAPACITOR-SMD	CC 0805 X7R 225K 16V CT	1	Pcs	PILKOR	0	C118
23	S	26894	CAPACITOR-SMD	CC 0805 X7R 474K 25V CT	1	Pcs	PILKOR	0	C256
24	S	24030	DIODE-SMD	1N4148W,SOD123	4	Pcs	DIODES	0	D111,D112,D113,D114
25	S	29177	IC-SMD	L6599D, SO-16	1	Pcs	ST	0	U102
26	S	27339	IC-SMD	AZ431AN,SOT-23	1	Pcs	BCD	0	U251
27	S	26971	RESISTOR-SMD	CR 0805 000JT	1	Pcs	PILKOR	0	RJ101
28	S	26974	RESISTOR-SMD	CR 0805 102JT	1	Pcs	PILKOR	0	R254
29	S	26975	RESISTOR-SMD	CR 0805 103JT	2	Pcs	PILKOR	0	R119,R120
30	S	27127	RESISTOR-SMD	CR 0805 105JT	5	Pcs	PILKOR	0	R111,R112,R113,R114,R121
31	S	26977	RESISTOR-SMD	CR 0805 10RJT	2	Pcs	PILKOR	0	R140,R141
32	S	27240	RESISTOR-SMD	CR 0805 153JT	1	Pcs	PILKOR	0	R253
33	S	26991	RESISTOR-SMD	CR 0805 203JT	1	Pcs	PILKOR	0	R115
34	S	26994	RESISTOR-SMD	CR 0805 272JT	1	Pcs	PILKOR	0	R123
35	S	29776	RESISTOR-SMD	CR 0805 331JT	1	Pcs	PILKOR	0	R126
36	S	27004	RESISTOR-SMD	CR 0805 472JT	2	Pcs	PILKOR	0	R122,R251

LGP32-ATN _ TOP BOARD PART LIST

37	S	27008	RESISTOR-SMD	CR 0805 47RJT	2	Pcs	PILKOR	0	R117,R118
38	S	27126	RESISTOR-SMD	CR 0805 104FT	1	Pcs	PILKOR	0	R259
39	S	27130	RESISTOR-SMD	CR 0805 153FT	1	Pcs	PILKOR	0	R124
40	S	27134	RESISTOR-SMD	CR 0805 223FT	2	Pcs	PILKOR	0	R256,R258
41	S	27111	RESISTOR-SMD	CR 0805 303FT	1	Pcs	PILKOR	0	R255
42	S	27003	RESISTOR-SMD	CR 0805 472FT	1	Pcs	PILKOR	0	R257
43	S	26297	BOND-SMD	HT-130A-106	0.025	ml	HI-TECH KOREA	0	
44	M	29463	CAPACITOR-M/F	MP 630V 563J 15mmPitch	1	Pcs	SEUNG WOO	0	C121
45	M	26929	CAPACITOR-Y	SD B 2G 471K 08 BW,Y1(10mmPitch)	1	Pcs	SAMWHA	0	CY106
46	M	28636	CONNECTOR	SMW250-06	1	Pcs	YEONHO	0	P101
47	M	21505	CONNECTOR	20010WS-14	1	Pcs	YEONHO	0	P203
48	M	28837	CONNECTOR	SMW200-24C	1	Pcs	YEONHO	0	P201
49	M	20119	CONNECTOR	SMW200-12	1	Pcs	YEONHO	0	P206
50	M	29662	CABLE Ass'y	SMH250-06 + SMH250-06 (160mm)	1	Set	행정사	0	FOR P101
51	M	29663	CABLE Ass'y	SMH200-12 + SMH200-12 (350mm)	1	Set	행정사	0	FOR P206
52	M	29313	FLUX	EF-9301(g)	2	g	ALPHA METALS	0	
53	M	29529	FUSE	T3.15A H 250V, 215, NO LEAD	1	Pcs	Littel Fuse	0	F101
54	M	28662 29574	GND PIN	302-987A	2	PCS	삼성JS DOSUNG	0 0	PG3,PG4
55	M	29604	PHOTO COUPLER	EL817M(DT) B TYPE(10mm)	1	Pcs	EVERLIGHT	0	PC110
56	M	29467	TRANSFORMER	LM-006, EPC5050	1	Pcs	SOOJUNG	0	T101
57	M	28738	SOLDER BAR	HSE-11 B20 BAR	0.018	kg	희성금속	0	
58	M	28739	SOLDER WIRE	HSE-11 B20 WIRE	0.0012	kg	희성금속	0	
59	C	26647	DIODE	FMEN-210A(100V / 10A), TO-220FP	3	Pcs	SANKEN	0	D251,D252,D253
60	C	28240	FET	STP9NK65ZFP, TO-220FP	2	Pcs	ST	0	Q110,Q111
61	C	29715	HEAT SINK	LGP32-ATN-HS5 (15X40X20(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS5(FOR Q110,Q111)
62	C	29716	HEAT SINK	LGP32-ATN-HS6 (15X80X20(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS6(FOR D251,D252,,D253)
63	C	20436	LOCKING PAINT	HCC-7800	0.2	ml	HI-TECH KOREA	0	FOR Q110,Q111,D251,D252,D253
64	C	21839	SCREW	MA PH 3*10 F NI	5	Pcs	아세아	0	FOR Q110,Q111,D251,D252,D253
65	C	21869	SILICONE OIL	HC300	0.2	g	A-TEK	0	FOR Q110,Q111,D251,D252,D253
66	P	29717	BUBBLE SHEET	330 X 200mm	1	Pcs	A-TEK	0	
67	P	26335	LABEL	40*8mm	1	EA	AIT	0	
68	P	24727	OUT BOX	580 x 480 x 220 x 8T	0.0555	Pcs	GREEN	0	
69	P	22428	PAD	575 x 475 x 8T	0.1666	Pcs	GREEN	0	
70	P	29456	PARTITION	PARTITION-A (575x98x8T)	1.1111	Pcs	GREEN	0	
71	P	29457	PARTITION	PARTITION-B (475x98x8T)	0.3333	Pcs	GREEN	0	
72	P	24830	SILICONE	QS9112	1.2	ml	KCC	0	

LGP32-ATN _ BOTTOM BOARD PART LIST

NO	공정	품목 코드	품명	DESCRIPTION	Q'ty	단위	VENDOR	RoHs	REFERENCE
1	A	29647 29646	PCB	PCB : LGP32-ATN-Bottom(245*80mm) FR-1 1.6t, Ver:1.1	1	Pcs	DAEDUCK DUCKSUNG	0 0	
2	A	28343	CAPACITOR-ELEC	NXB 25V 1000M TP(10x20mm)	1	Pcs	SAMYOUNG	0	C212
3	A	28341	CAPACITOR-ELEC	NXB 10V 470M TP(8x11.5mm)	1	Pcs	SAMYOUNG	0	C204
4	A	29449	CAPACITOR-ELEC	NXB 25V 220M TP(8x11.5mm)	1	Pcs	SAMYOUNG	0	C213
5	A	14911	CAPACITOR-ELEC	KMG 50V 10M TP(5x11mm)	3	Pcs	SAMYOUNG	0	C206,C501,C508
6	A	24818	CAPACITOR-ELEC	KMG 50V 22M TP(5x11mm)	2	Pcs	SAMYOUNG	0	C504,C510
7	A	14811	CAPACITOR-ELEC	KMG 50V 47M TP(6.3x11mm)	1	Pcs	SAMYOUNG	0	C512
8	A	26926	CAPACITOR-ELEC	NXB 10V 3300M TP(10x25mm)	2	Pcs	SAMYOUNG	0	C202,C203
9	A	28541	CAPACITOR-CERAMIC	EKR 3A 471K 07FK (5mmPitch)	2	Pcs	SAMWHA	0	C201,C221
10	A	28542	CAPACITOR-CERAMIC	EKR 3A 221K 06FK (5mmPitch)	2	Pcs	SAMWHA	0	C607, C611
11	A	25788	BEAD	BFS3550R2F	1	Pcs	SAMWHA	0	FB501
12	A	24956	BEAD	BFS 3550A0L	1	Pcs	SAMWHA	0	FB601
13	A	28327	DIODE	HER108G	4	Pcs	RECTRON	0	D204,D504,D506,D507
14	A	29149	DIODE-ZENER	1N5232B(5.6V),DO-35	2	Pcs	VISHAY	0	ZD503,ZD504
15	A	27346	DIODE-ZENER	1N5245B(15V),DO-35	2	Pcs	VISHAY	0	ZD501,ZD502
16	A	28663	EYELET	DEYP-1630	27	Pcs	삼성JS	0	EL1-EL3, EL6-EL14, EL19-EL21, EL23-EL27, EL38-44
17	A	28664	EYELET	DEYP-2030	7	Pcs	삼성JS	0	EL4,EL5,EL17,EL18,EL33,EL36,EL37
18	A	28669	GT PIN	GT235-2(11mm)	2	Pcs	삼성JS	0	GT100, GT101
19	A	29598 27369	FUSE CLIP	AFC-520	2	Pcs	삼성JS DAERIN	0 0	F100A,F100B
20	A	20189	JUMPER	0.6PHI 52MM TAPING(자삽용)	23	Pcs	TPI	0	J1,J3, J13-J14, J16, J19-J20, J22, J24-J26, J30-J31, J33-J38, J40-J43
21	A	27258	RESISTOR-FUSING	FR 2R2J 1/2W	1	Pcs	ABCO	0	R532
22	A	29041	RESISTOR-C/R	CRS 1/4W 2.2K ohm J TP	1	Pcs	ABCO	0	R232
23	A	29773	RESISTOR-M/O	MORS 1W 68R ohmJ TP, R-FORM	1	Pcs	ABCO	0	R512
24	A	29579	RESISTOR-M/O	MORS 1W 2R2 ohm J TP, R-FORM	1	Pcs	ABCO	0	R525
25	A	21723	RESISTOR-M/O	MORS 2W 47K ohm J TP, R-FORM	1	Pcs	ABCO	0	R529
26	A	21724	RESISTOR-M/O	MOR 1W 10R ohm J TP, R-FORM	2	Pcs	ABCO	0	R201,R221
27	A	29038	RESISTOR-W/W	WNPS 2N 0.33 ohmJ	1	Pcs	ABCO	0	R514
28	A	29582	RESISTOR-W/W	WNPS 2N 0.09 ohmJ, R-FORM	1	Pcs	ABCO	0	R608
29	A	26478	RESISTOR-SURGE	MSR37 1/2W 10M ohm J TB	1	Pcs	PILKOR	0	R100
30	S	29269	CAPACITOR-SMD	CC 0805 NPO 330J 50V CT, 33PF	1	Pcs	PILKOR	0	C502
31	S	26900	CAPACITOR-SMD	CC 0805 X7R 471K 50V CT	2	Pcs	PILKOR	0	C102,C505
32	S	26967	CAPACITOR-SMD	CC 0805 X7R 102K 50V CT	5	Pcs	PILKOR	0	C222,C225,C503,C602,C605
33	S	23587	CAPACITOR-SMD	CC 0805 X7R 104K 50V CT	7	Pcs	PILKOR	0	C205,C207,C208,C507,C601,C603,C610
34	S	26879	CAPACITOR-SMD	CC 0805 X7R 105K 25V CT	1	Pcs	PILKOR	0	C604
35	S	23591	CAPACITOR-SMD	CC 0805 X7R 223K 50V CT	1	Pcs	PILKOR	0	C103
36	S	26894	CAPACITOR-SMD	CC 0805 X7R 474K 25V CT	1	Pcs	PILKOR	0	C101

LGP32-ATN _ BOTTOM BOARD PART LIST

37	S	29797	DIODE-SMD	MMSD103T1G	2	Pcs	ON SEMI	0	D102,D103
38	S	24030	DIODE-SMD	1N4148W, SOD123	2	Pcs	DIODES	0	D505,D603
39	S	24863	DIODE-ZENER-SMD	BZT52C15S,15V,SOD323	2	Pcs	DIODES	0	ZD112,ZD205
40	S	26858	DIODE-SMD	1N4148WS, SOD323	1	Pcs	DIODES	0	D501
41	S	25493	DIODE-ZENER-SMD	BZT52C30S,30V,SOD323	1	Pcs	DIODES	0	ZD507
42	S	28831	IC-SMD	NCP1207A, SO-8	1	Pcs	ON SEMI	0	U500
43	S	29166	IC-SMD	SG6961SZ,SO-8	1	Pcs	SYSTEM GENERAL	0	U600
44	S	27339	IC-SMD	AZ431AN,SOT-23	3	Pcs	BCD	0	U101,U201,U203
45	S	26971	RESISTOR-SMD	CR 0805 000JT	4	Pcs	PILKOR	0	R240,RJ100,RJ102,RJ103
46	S	26972	RESISTOR-SMD	CR 0805 101JT	1	Pcs	PILKOR	0	R508
47	S	26974	RESISTOR-SMD	CR 0805 102JT	9	Pcs	PILKOR	0	R134,R202,R203,R210,R239,R501,R513,R520,R605
48	S	26975	RESISTOR-SMD	CR 0805 103JT	12	Pcs	PILKOR	0	R209,R219,R225,R502,R503,R515,R516,R519, R531,R604,R607,R614
49	S	27113	RESISTOR-SMD	CR 0805 104JT	3	Pcs	PILKOR	0	R104,R135,R634
50	S	26977	RESISTOR-SMD	CR 0805 10RJT	2	Pcs	PILKOR	0	R509,R603
51	S	27859	RESISTOR-SMD	CR 0805 123JT	1	Pcs	PILKOR	0	R236
52	S	26986	RESISTOR-SMD	CR 0805 202JT	1	Pcs	PILKOR	0	R220
53	S	26990	RESISTOR-SMD	CR 0805 221JT	1	Pcs	PILKOR	0	R224
54	S	28850	RESISTOR-SMD	CR 0805 33RJT	1	Pcs	PILKOR	0	R602
55	S	27241	RESISTOR-SMD	CR 0805 243JT	1	Pcs	PILKOR	0	R606
56	S	27181	RESISTOR-SMD	CR 0805 393JT	1	Pcs	PILKOR	0	R504
57	S	27002	RESISTOR-SMD	CR 0805 471JT	1	Pcs	PILKOR	0	R208
58	S	27004	RESISTOR-SMD	CR 0805 472JT	3	Pcs	PILKOR	0	R109,R223,R615
59	S	27005	RESISTOR-SMD	CR 0805 473JT	2	Pcs	PILKOR	0	R204,R506
60	S	28231	RESISTOR-SMD	CR 0805 622JT	1	Pcs	PILKOR	0	R517
61	S	27014	RESISTOR-SMD	CR 0805 683JT	1	Pcs	PILKOR	0	R601
62	S	28457	RESISTOR-SMD	CR 0805 684JT	4	Pcs	PILKOR	0	R630,R631,R632,R633
63	S	27130	RESISTOR-SMD	CR 0805 153FT	1	Pcs	PILKOR	0	R613
64	S	27850	RESISTOR-SMD	CR 0805 154FT	1	Pcs	PILKOR	0	R108
65	S	27135	RESISTOR-SMD	CR 0805 242FT	1	Pcs	PILKOR	0	R234
66	S	28084	RESISTOR-SMD	CR 0805 334FT	3	Pcs	PILKOR	0	R105,R106,R107
67	S	27003	RESISTOR-SMD	CR 0805 472FT	2	Pcs	PILKOR	0	R205,R207
68	S	28891	RESISTOR-SMD	CR 0805 511FT	2	Pcs	PILKOR	0	R206,R237
69	S	27011	RESISTOR-SMD	CR 0805 624FT	4	Pcs	PILKOR	0	R609,R610,R611,R612
70	S	27629	RESISTOR-SMD	CR 0805 821FT	1	Pcs	PILKOR	0	R620
71	S	27013	RESISTOR-SMD	CR 0805 912FT	1	Pcs	PILKOR	0	R238
72	S	29488	RESISTOR-SMD	CR 1206 514JT	2	Pcs	PILKOR	0	R102,R103
73	S	29504	RESISTOR-SMD	CR 1206 512JT	2	Pcs	PILKOR	0	R526,R527
74	S	21045	TR-SMD	SBT2222A, SOT-23	6	Pcs	AUK	0	Q112,Q201,Q203,Q501,Q504,Q505
75	S	21046	TR-SMD	SBT2907A, SOT-23	2	Pcs	AUK	0	Q503,Q603

LGP32-ATN _ BOTTOM BOARD PART LIST

76	S	26297	BOND-SMD	HT-130A-106	0.025	ml	HI-TECH KOREA	0	
77	M	29648	CAPACITOR-ELEC	TD 450V 120M (30x25mm) / (Made in Korea)	1	Pcs	SAMYOUNG	0	C608
78	M	30043	CAPACITOR-M/F	PCMP 372(MKP) 105 J 550V 15mmPitch	1	Pcs	PILKOR	0	C600
79	M	29937	CAPACITOR-M/F	NP 630V 222J (7.5mmPitch)	1	Pcs	SEUNG WOO	0	C509
80	M	16627	CAPACITOR-X	PCX2 337 334K (275V, 15mmPitch)	2	Pcs	PILKOR	0	CX101,CX102
81	M	26929	CAPACITOR-Y	SD B 2G 471K 08 BW,Y1(10mmPitch)	5	Pcs	SAMWHA	0	CY101,CY102,CY103,CY104,CY105
82	M	21158	CHOKE-BAR	0.6uH BAR CORE(3φx10mm)	2	Pcs	SOOJUNG	0	L201,L202
83	M	20119	CONNECTOR	SMW200-12	1	Pcs	YEONHO	0	P205
84	M	28636	CONNECTOR	SMW250-06	1	Pcs	YEONHO	0	P601
85	M	6345	CONNECTOR	YW396-03AV	1	Pcs	YEONHO	0	SC100
86	M	21144	COVER-VARISTOR	VARISTOR D14 CAP V-0 GRAD 15PHI	1	Pcs	HEANGSUNG DAEILCOATING	0 0	FOR VA101
87	M	29569	DIODE	S3V60-5000,600V 3.5A 15mm	1	Pcs	SHINDENGEN	0	D600
88	M	29313	FLUX	EF-9301(g)	2	g	ALPHA METALS	0	
89	M	24035	FUSE	T5A H 250V,215,NO LEAD	1	Pcs	Littel Fuse	0	F100
90	M	28662 29574	GND PIN	302-987A	2	PCS	삼성JS DOSUNG	0 0	PG1,PG2
91	M	24704	LINE FILTER	CV620180S	2	Pcs	TNC	0	LF101,LF102
92	M	29604	PHOTO COUPLER	EL817M(DT) B TYPE(10mm)	3	Pcs	EVERLIGHT	0	PC200,PC501,PC502
93	M	21393	THERMISTOR	8D15,MSSB	1	Pcs	DSC	0	TH600
94	M	29003	TRANSFORMER	LS-004 EER3124N (395uH)	1	Pcs	SOOJUNG	0	T501
95	M	30007	TRANSFORMER	LP-001 EER3124N (220uH)	1	Pcs	SOOJUNG	0	L600
96	M	20971	VARIATOR	TVR 14 621K(P:7.5mm)	1	Pcs	THINKING	0	VA101
97	M	28738	SOLDER BAR	HSE-11 B20 BAR	0.018	kg	희성금속	0	
98	M	28739	SOLDER WIRE	HSE-11 B20 WIRE	0.0012	kg	희성금속	0	
99	C	29454	DIODE	FMX-G16S(600V / 5A), TO-220FP	1	Pcs	SANKEN	0	D601
100	C	26647	DIODE	FMEN-210A(100V / 10A), TO-220FP	1	Pcs	SANKEN	0	D201
101	C	29326	DIODE	FMX-22S(200V / 10A), TO-220FP	1	Pcs	SANKEN	0	D203
102	C	29444	DIODE-BRIDGE	RS405M 600V 4A	1	Pcs	RECTRON	0	BD101
103	C	29057	FET	FQPF13N06L 60V 10A TO-220FP	1	Pcs	FAIRCHILD	0	Q210
104	C	28240	FET	STP9NK65ZFP, TO-220FP	1	Pcs	ST	0	Q502
105	C	20656	FET	STW20NM60 , TO-247	1	Pcs	ST	0	Q601
106	C	29649	HEAT SINK	LGP32-ATN-HS1 (10X70X27(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS1(FOR BD101)
107	C	29650	HEAT SINK	LGP32-ATN-HS2 (15X70X27(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS2(FOR Q601,D601)
108	C	29651	HEAT SINK	LGP32-ATN-HS3 (15X35X27(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS3(FOR Q502)
109	C	29652	HEAT SINK	LGP32-ATN-HS4 (15X75X27(H)mm)	1	Pcs	YUWON HUAGUANG	0 0	HS4(FOR D201,D203,Q210)

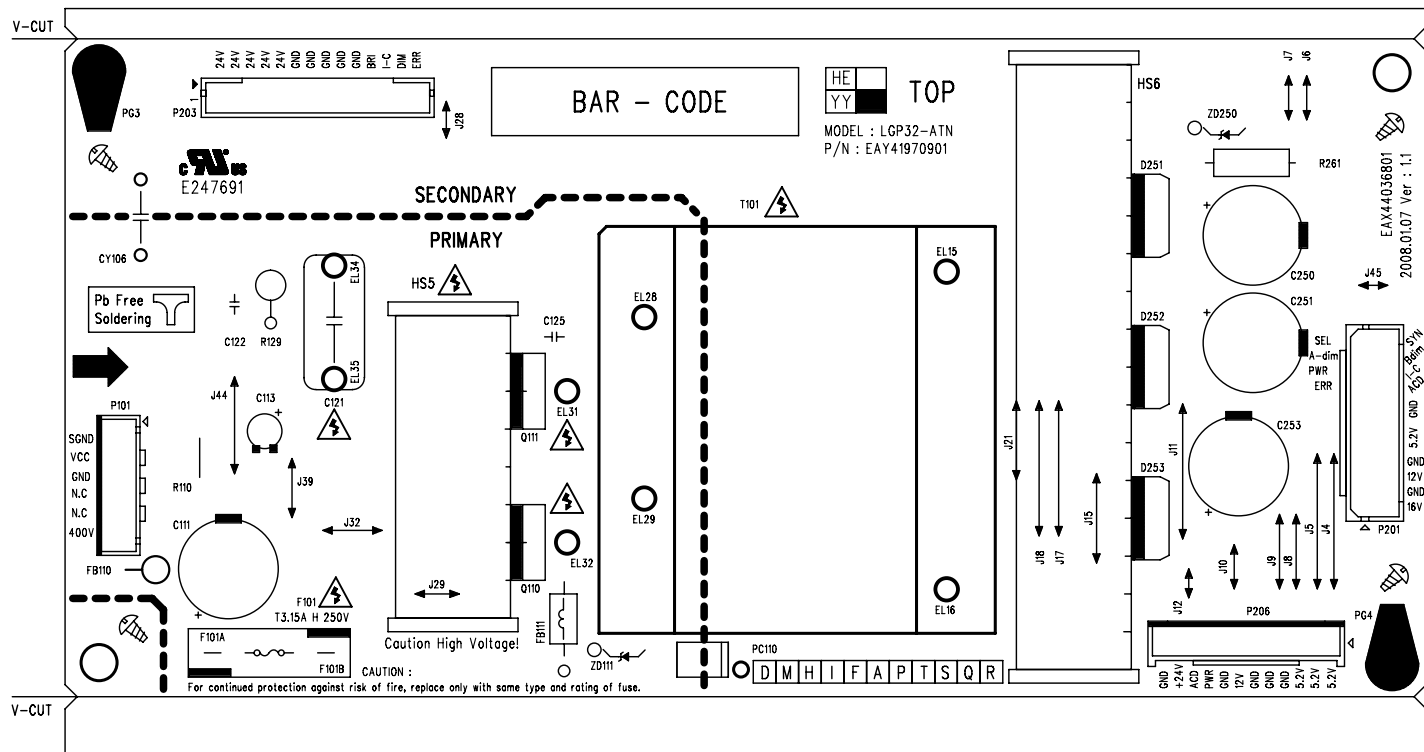
LGP32-ATN _ BOTTOM BOARD PART LIST

110	C	20436	LOCKING PAINT	HCC-7800	0.2	ml	HI-TECH KOREA	0	FOR Q502,Q601,D601,D201,D203, Q210,BD101
111	C	23987	SCREW	MA BH 3*10 F NI	1	Pcs	아세아	0	FOR BD101
112	C	27116	SCREW	MA BH 3*12 F NI	1	Pcs	아세아	0	FOR Q601
113	C	14996	SCREW	MA PH 3*8 F NI	5	Pcs	아세아	0	FOR Q502,D601,D201,D203,Q210
114	C	21869	SILICONE OIL	HC300	0.2	g	A-TEK	0	FOR Q502,D601,D201,D203,Q210,BD101
115	C	20749	SIL PAD	SP 19*24,TO-3P	1	Pcs	A-TEK	0	FOR Q601
116	P	29888	BUBBLE SHEET	330*260mm	1	Pcs	A-TEK	0	
117	P	26335	LABEL	40*8mm	1	EA	AIT	0	
118	P	24830	SILICONE	QS9112	1.2	ml	KCC	0	

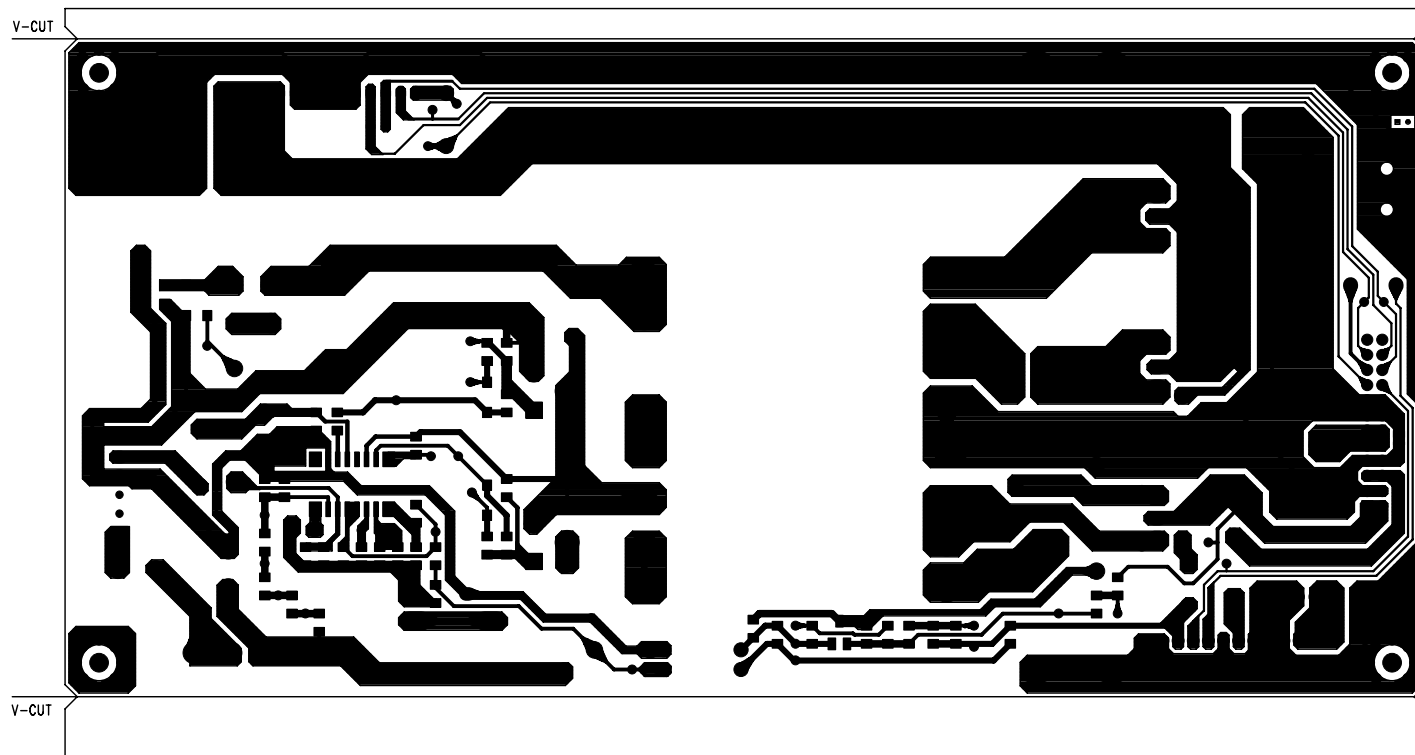
6. PCB Layout

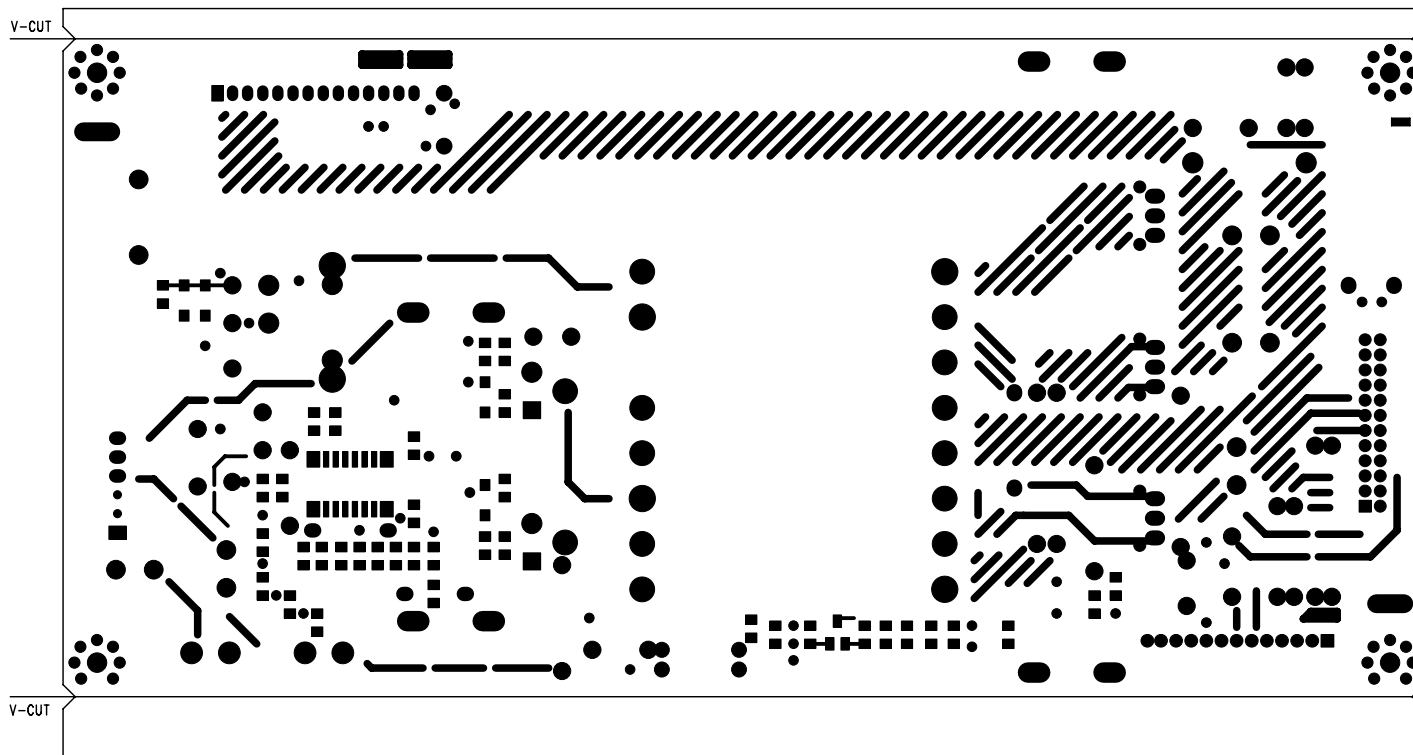
6-1. LGP32ATN-TOP

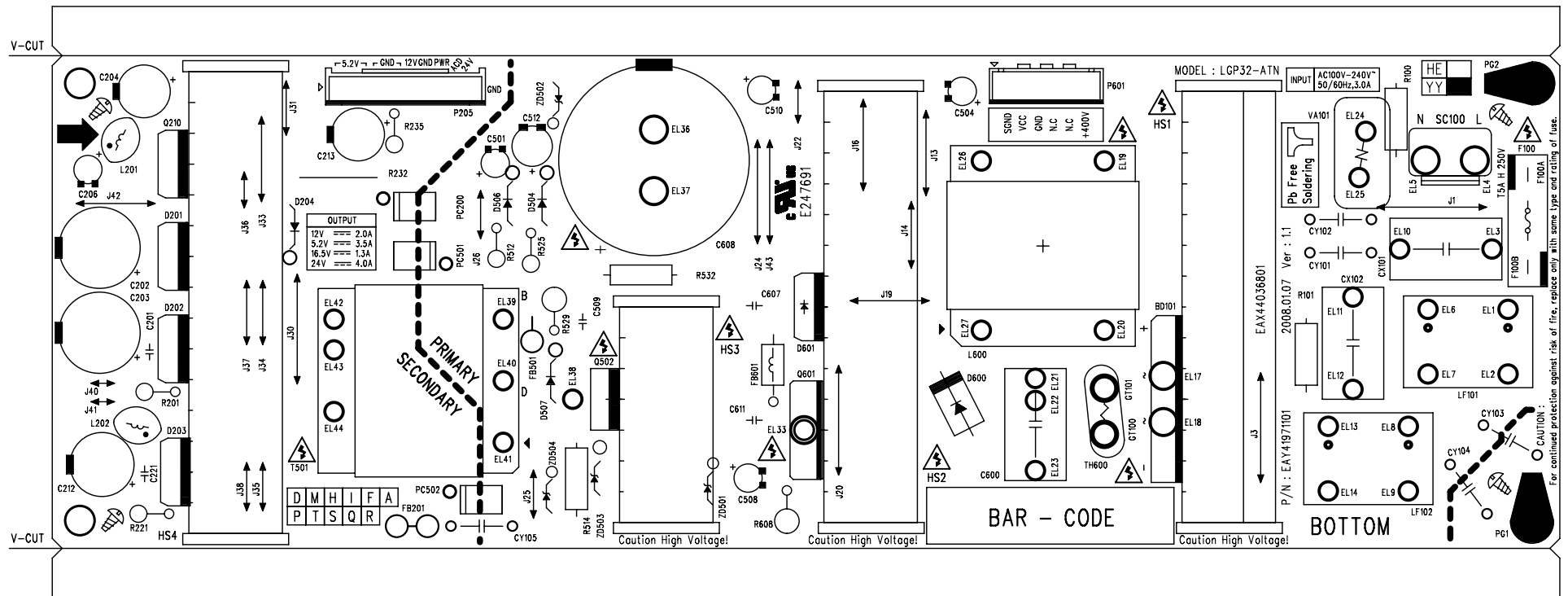
6-2. LGP32ATN-BOTTOM

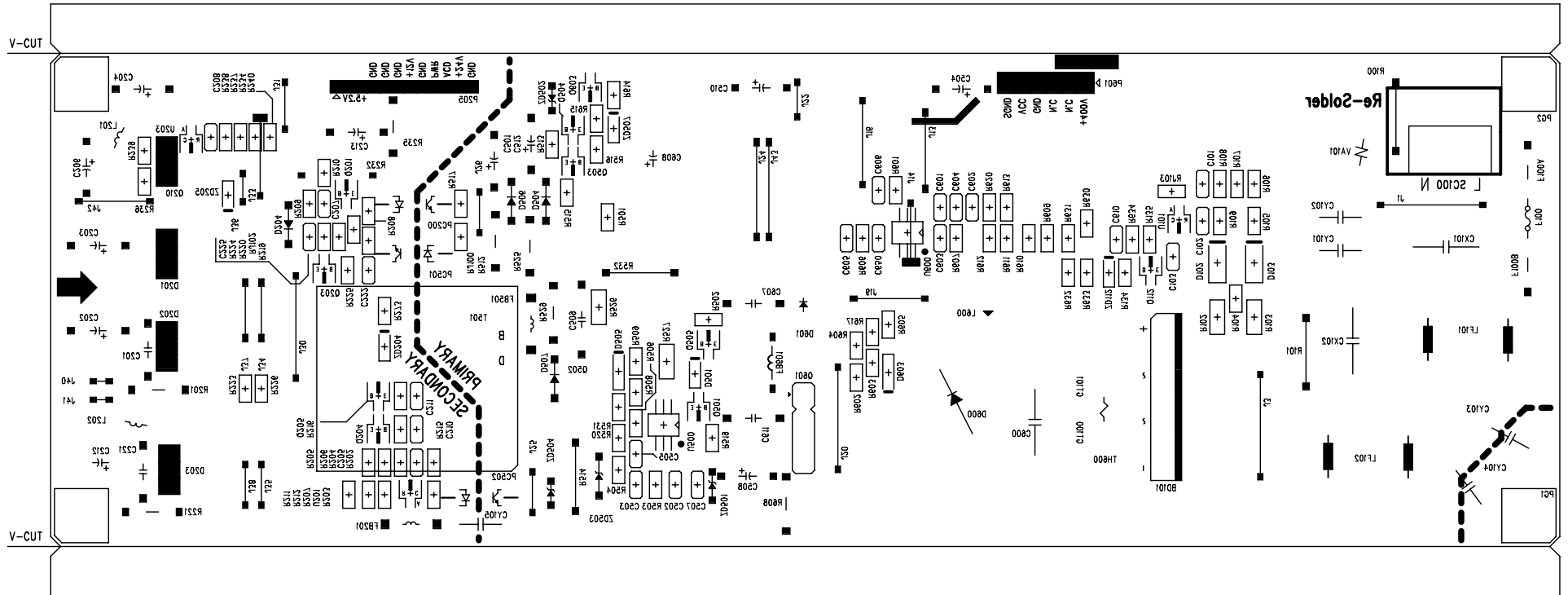


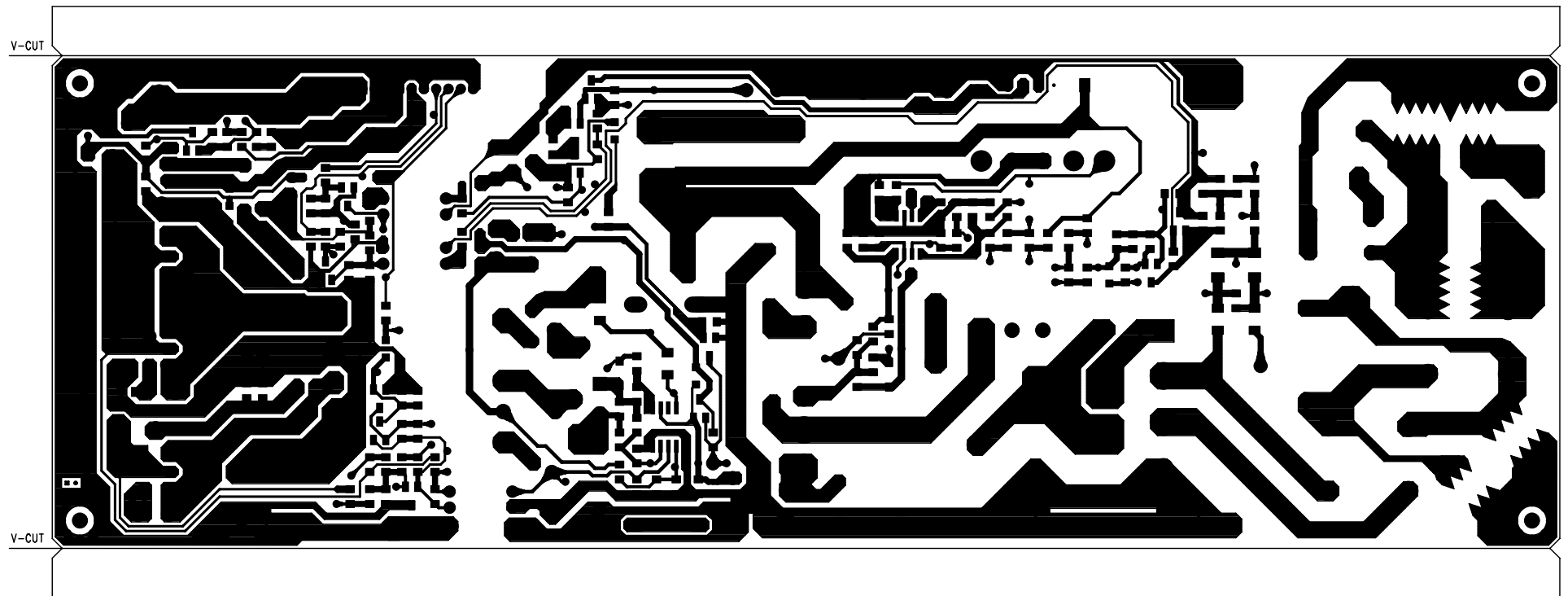


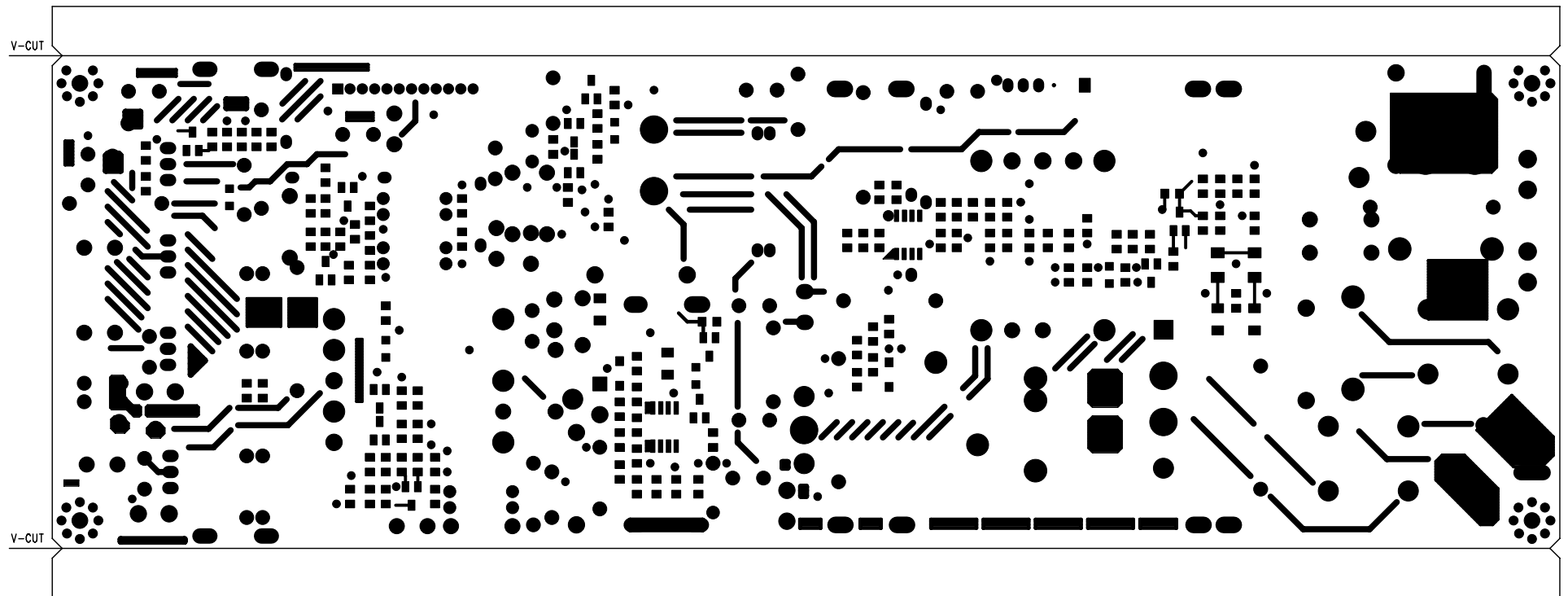












7. SAFETY PART LIST

LGP32-ATN_TOP BOARD

NO	품명	DESCRIPTION	Q'ty	단위	VENDOR	REFERENCE
1	PCB	PCB : LGP32-ATN_TOP(180*87mm), FR-1 1.6t	1	Pcs	DAEDUCK DUCKSUNG	
2	IC-SMD	L6599D, SO-16	1	Pcs	ST	U102
3	CAPACITOR-M/F	MP 630V 563J 15mmPitch	1	Pcs	SEUNG WOO	C121
4	CAPACITOR-Y	SD B 2G 471K 08 BW,Y1(10mmPitch)	1	Pcs	SAMWHA	CY106
5	FUSE	T3.15A H 250V, 215, NO LEAD	1	Pcs	Littel Fuse	F101
6	PHOTO COUPLER	EL817MB-DT(P10mm)	1	Pcs	EVERLIGHT	PC110
7	TRANSFORMER	LM-006, EPC5050	1	Pcs	SOOJUNG	T101
8	FET	STP9NK65ZFP,TO-220FP	2	Pcs	ST	Q110,Q111
9	HEAT SINK	LGP32-ATN-HS5 (15X40X20(H)mm)	1	Pcs	YUWON HUAGUANG	HS5(FOR Q110,Q111)
10	HEAT SINK	LGP32-ATN-HS6 (15X80X20(H)mm)	1	Pcs	YUWON HUAGUANG	HS6(FOR D251,D252,,D253)

LGP32-ATN_BOTTOM BOARD

NO	품명	DESCRIPTION	Q'ty	단위	VENDOR	REFERENCE
1	PCB	PCB : LGP32-ATN_BOTTOM(245*80mm) FR-1 1.6t	1	Pcs	DAEDUCK DUCKSUNG	
2	RESISTOR-SURGE	MSR37 1/2W 10M ohm J TB	1	Pcs	PILKOR	R100
3	IC-SMD	NCP1207A, SO-8	1	Pcs	ON SEMI	U500
4	IC-SMD	SG6961SZ,SO-8	1	Pcs	SG	U600
5	CAPACITOR-M/F	NP 630V 222J (7.5mmPitch)	1	Pcs	SEUNG WOO	C509
6	CAPACITOR-M/F	PCMP 372(MKP) 105 K 550V 15mmPitch	1	Pcs	PILKOR	C600
7	CAPACITOR-X	PCX2 334K (275V, 15mm)	2	Pcs	PILKOR	CX101,CX102
8	CAPACITOR-Y	SD B 2G 471K 08 BW,Y1(10mmPitch)	5	Pcs	SAMWHA	CY101,CY102,CY103,CY104,CY105
9	CONNECTOR	YW396-03AV	1	Pcs	YEONHO	SC100
10	FUSE	T5A H 250V,215,NO LEAD	1	Pcs	Littel Fuse	F100
11	LINE FILTER	CV620180S	2	Pcs	TNC	LF101,LF102
12	PHOTO COUPLER	EL817M(DT)B TYPE(10mm)	3	Pcs	EVERLIGHT	PC200,PC501,PC502
13	THERMISTOR	8D15MSFC	1	Pcs	DSC	TH600
14	TRANSFORMER	LS-004 EER3124N (395uH)	1	Pcs	SOOJUNG	T501
15	TRANSFORMER	LP-001 EER3124N (220uH)	1	Pcs	SOOJUNG	L600
16	VARISTOR	TVR 14 621K(P:7.5mm)	1	Pcs	THINKING	VA101
17	DIODE	FMX-G16S(600V / 5A), TO-220FP	1	Pcs	SANKEN	D601
18	DIODE-BRIDGE	RS405M 600V 4A	1	Pcs	RECTRON	BD101
19	FET	STP9NK65ZFP, TO-220FP	1	Pcs	ST	Q502
20	FET	STW20NM60 , TO-247	1	Pcs	ST	Q601
21	HEAT SINK	LGP32-ATN-HS1 (10X70X27(H)mm)	1	Pcs	YUWON HUAGUANG	HS1(FOR BD101)
22	HEAT SINK	LGP32-ATN-HS2 (15X70X27(H)mm)	1	Pcs	YUWON HUAGUANG	HS2(FOR Q601,D601)
23	HEAT SINK	LGP32-ATN-HS3 (15X35X27(H)mm)	1	Pcs	YUWON HUAGUANG	HS3(FOR Q502)
24	HEAT SINK	LGP32-ATN-HS4 (15X75X27(H)mm)	1	Pcs	YUWON HUAGUANG	HS4(FOR D201,D203,Q210)

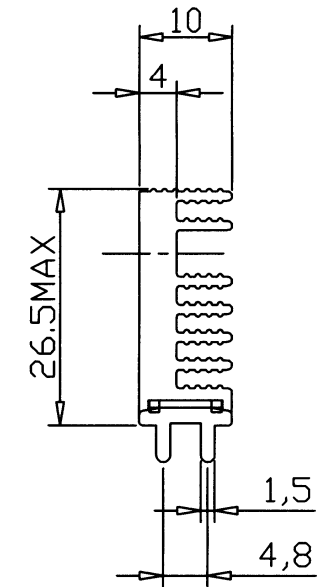
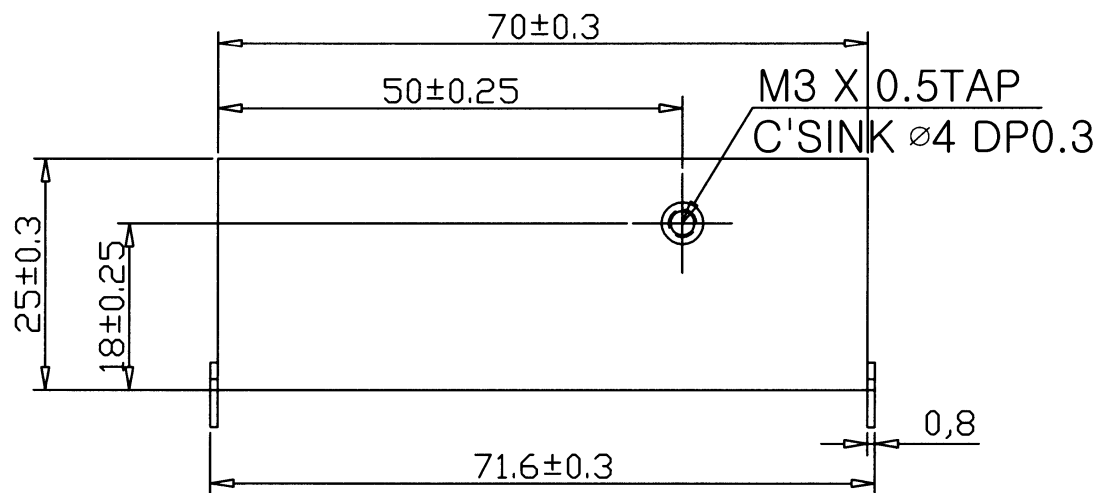
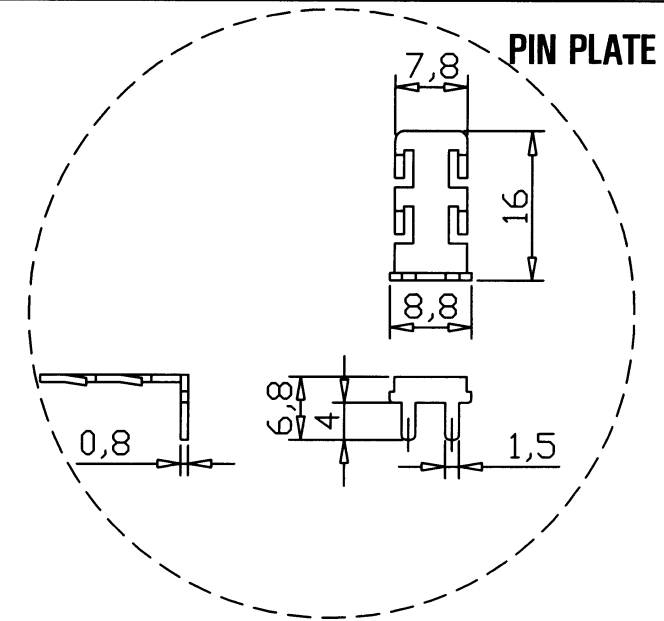
8. Mechanical Drawing

NOTE

1. MATERIAL : ALUMINUM A6063S -T5
2. BURR 방향에 주의하고 높이는 0.05이하 일 것.
3. BENDING부 갈라짐이 없고 각도 공차는 $\pm 1^\circ$ 이하 일 것.
4. 소자 결합부위의 평탄도는 0.05mm 이내일것.
5. 절삭유 등 기타 이물질이 없도록 완전 탈찌할것.
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7. SOLDER PIN 의 압입은 물리적이여야하며 흔들림없이 고정되어있을것.
8. 견본 및 승인원 제출하여 승인 득한후 양산할 것.
9. 기타 의문사항은 반드시 설계자와 협의 할 것.

후가공명		선택
아노다이징 (Anodizing)	단면부 포함	
	단면부 제외	
착색	WHITE	
	BLACK	

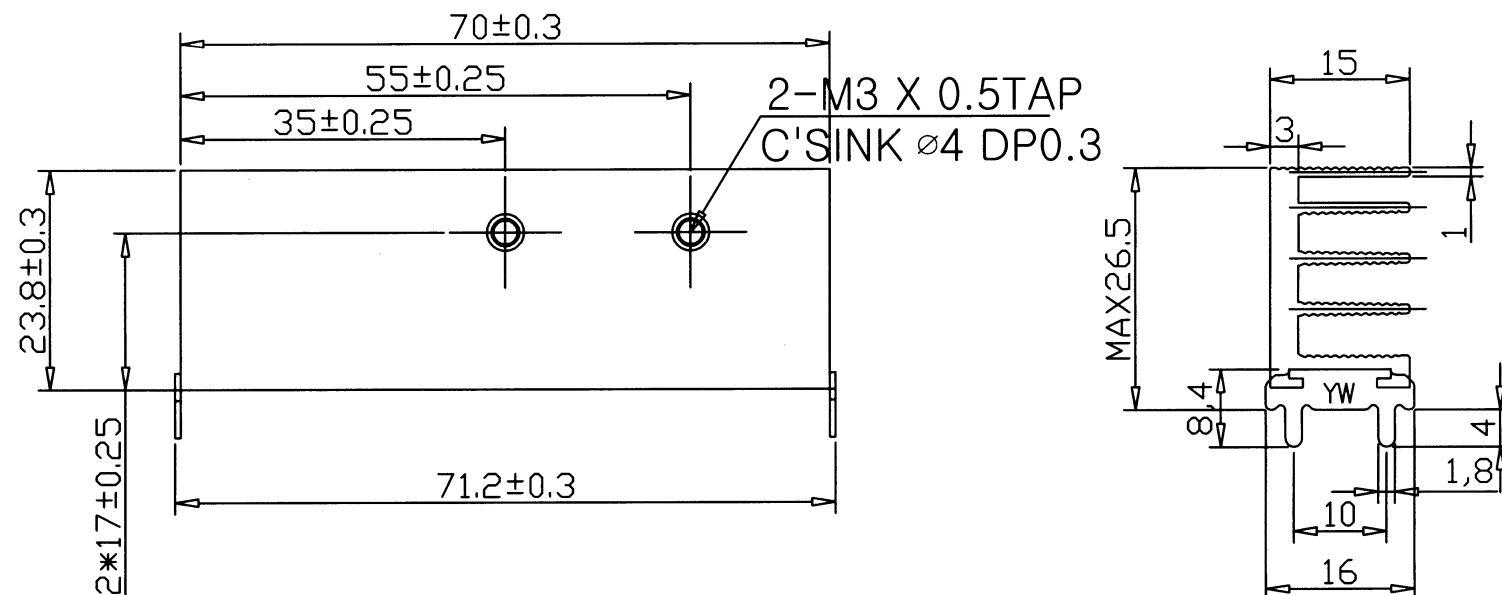
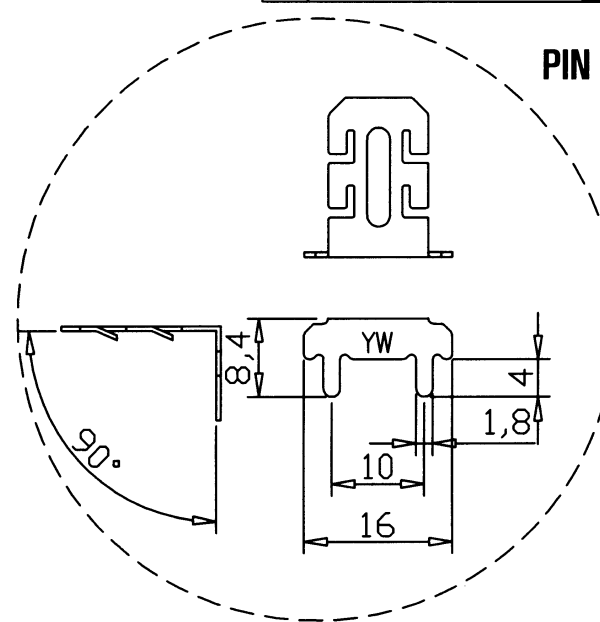
NO	THE NAME OF AN ARTICLE	DWG-NO	MATERIAL	Q'TY	REMARK
1	HEAT SINK - A		AL 6063 (탈지처리)	1	
2	PIN-TERMINAL		SPCC t=0.8, 주석도금	2	



REVISION	NO.													UNIT	SCALE	PLANNED BY	CHECKED BY	APPROVED BY		ATN 32	
													mm	1/1	J.W.KIM		K.R.KANG	HEAT SINK (유양)			
														2007.11.10		2007.11.10					
												GENERAL TOLERANCE		PROJECTION	USER	FILE NAME		YU-WON NRT Co.,Ltd.		DWG NO.	HS1
			LEVEL1	LEVEL2	LEVEL3			3RD ANGLE													
		0 ~ 4	±0.05	±0.10	±0.20																
		4 ~ 16	±0.08	±0.15	±0.30																
	16 ~ 64	±0.12	±0.25	±0.50																	
	64 ~ 250	±0.25	±0.40	±0.80																	

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4. 소자 결합부위의 평탄도는 0.05mm 이내일것.
5. 절삭유 등 기타 이물질이 없도록 완전 탈찌할것.
6. 표면에 얼룩, 이물, 긁힘등 유해한 결함이 없을 것.
7. SOLDER PIN 의 압입은 물리적이여야하며 흔들림없이 고정되어있을것.
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후가공명		선택
아노다이징 (Anodizing)	단면부 포함	/
	단면부 제외	
착색	WHITE	
	BLACK	



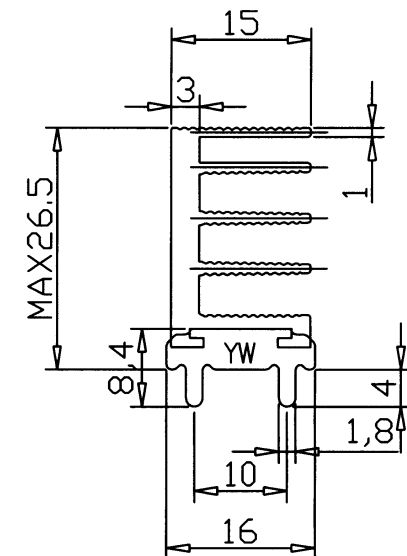
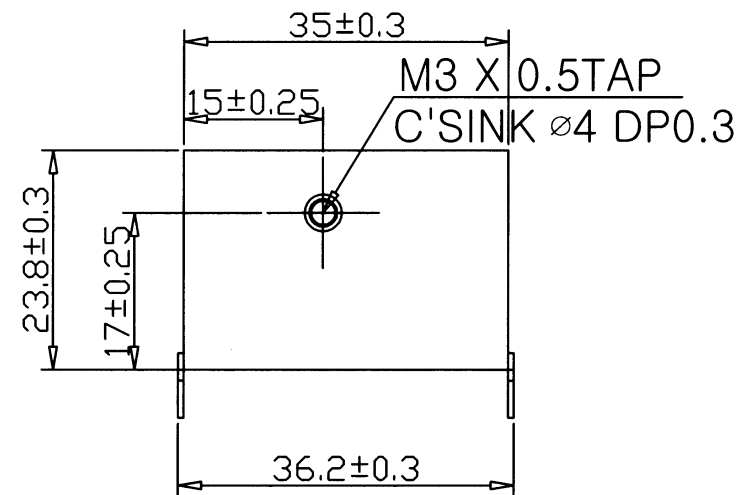
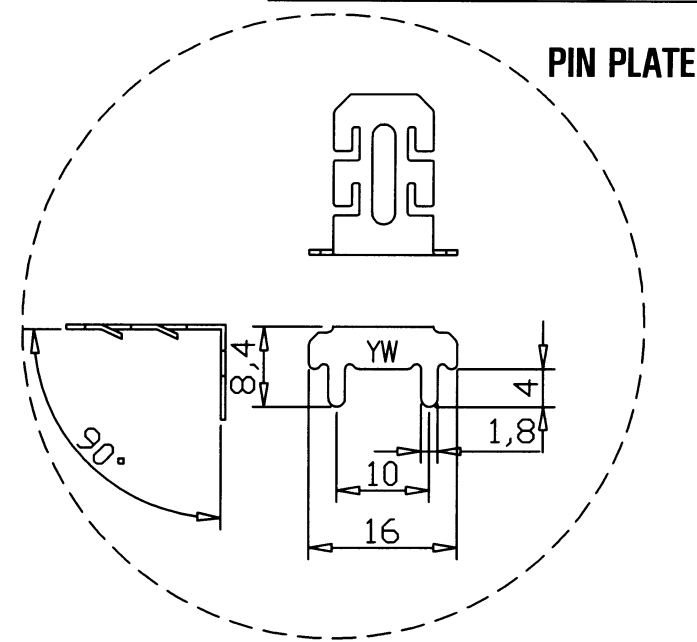
NO.

NOTE

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NO	THE NAME OF AN ARTICLE	DWG-NO	MATERIAL	Q'TY	REMARK
1	HEAT SINK - A		AL 6063 (탈지처리)	1	
2	PIN-TERMINAL		SPCC t=0.8(주석도금)	2	

후가공명		선택
아노다이징 (Anodizing)	단면부 포함	
	단면부 제외	
착색	WHITE	
	BLACK	



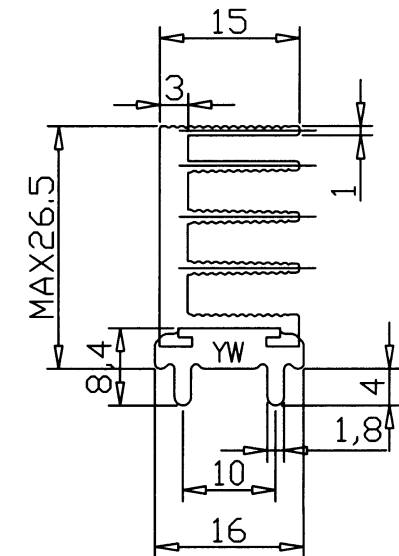
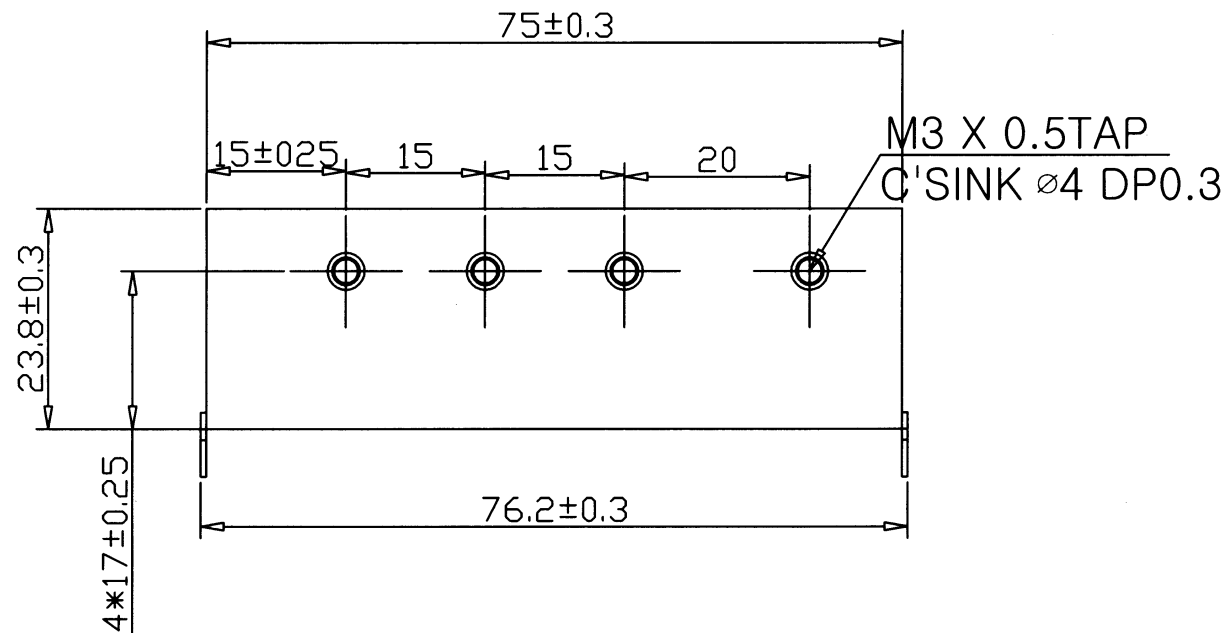
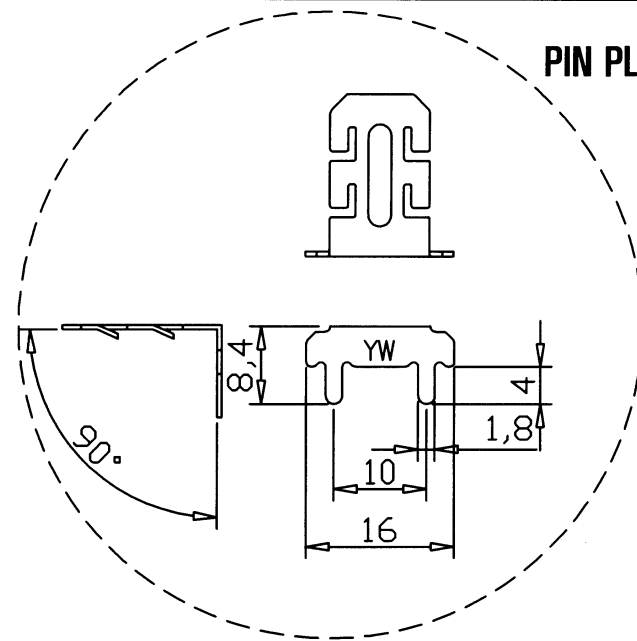
REVISION	NO.				UNIT	SCALE	PLANNED BY	CHECKED BY	APPROVED BY		ATN 32									
							J.W.KIM		K.R.KANG											
							2007.11.10		2007.11.10											
							FILE NAME													
							GENERAL TOLERANCE													
							PROJECTION					USER								
							3RD ANGLE													
							LEVEL1					LEVEL2			LEVEL3					
							0 ~ 4					±0.05			±0.10			±0.20		
							4 ~ 16					±0.08			±0.15			±0.30		
16 ~ 64			±0.12			±0.25			±0.50											
64 ~ 250			±0.25			±0.40			±0.80											
							YU-WON NRT Co.,Ltd.			DWG NO.	HS 3									

NOTE

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NO	THE NAME OF AN ARTICLE	DWG-NO	MATERIAL	Q'TY	REMARK
1	HEAT SINK - A		AL 6063 (탈지처리)	1	
2	PIN-TERMINAL		SPCC t=0.8(주석도금)	2	

후가공명		선택
아노다이징 (Anodizing)	단면부 포함	
	단면부 제외	
착색	WHITE	
	BLACK	



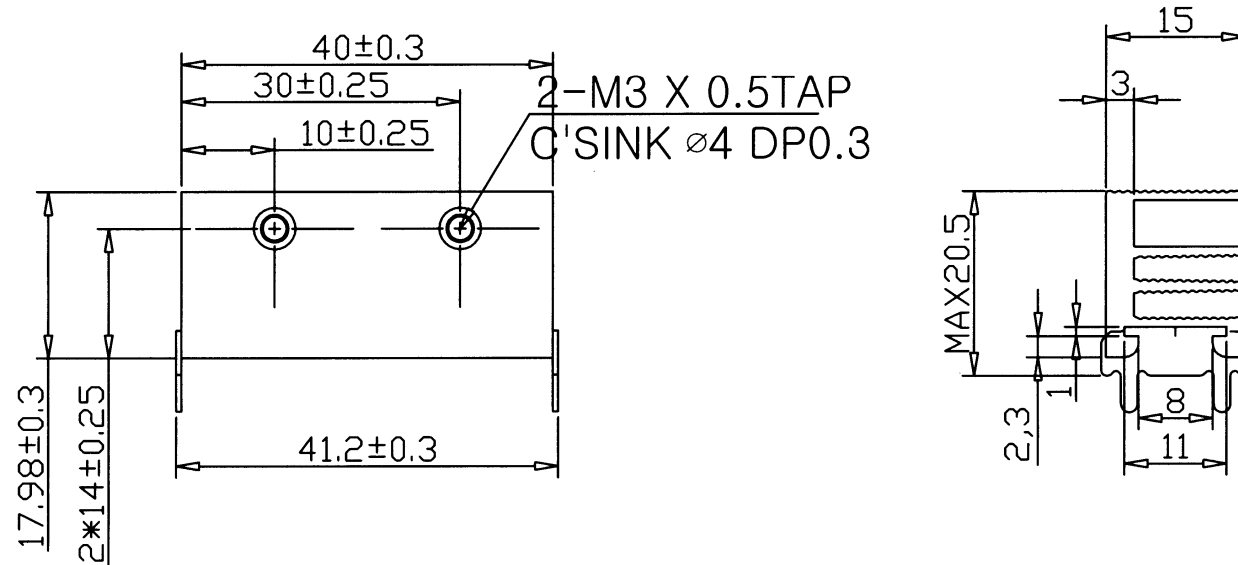
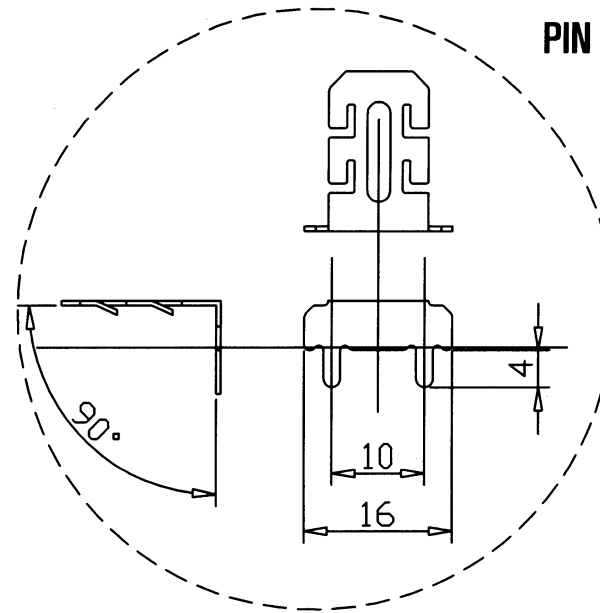
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NO	THE NAME OF AN ARTICLE	DWG-NO	MATERIAL	Q'TY	REMARK
1	HEAT SINK - A		AL 6063 (탈지처리)	1	
2	PIN-TERMINAL		SPCC t=0.8(주석도금)	2	

후가공명		선택
아노다이징 (Anodizing)	단면부 포함	
	단면부 제외	
착색	WHITE	
	BLACK	



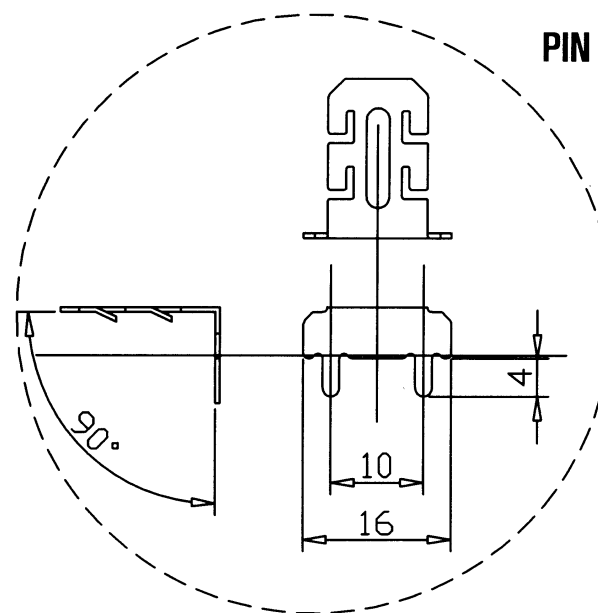
REVISION	NO.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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NOTE

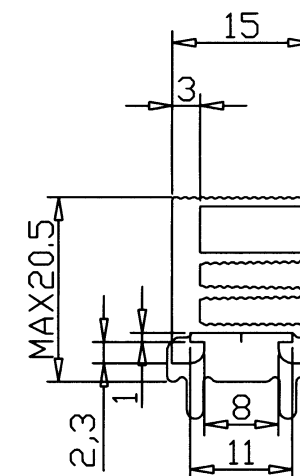
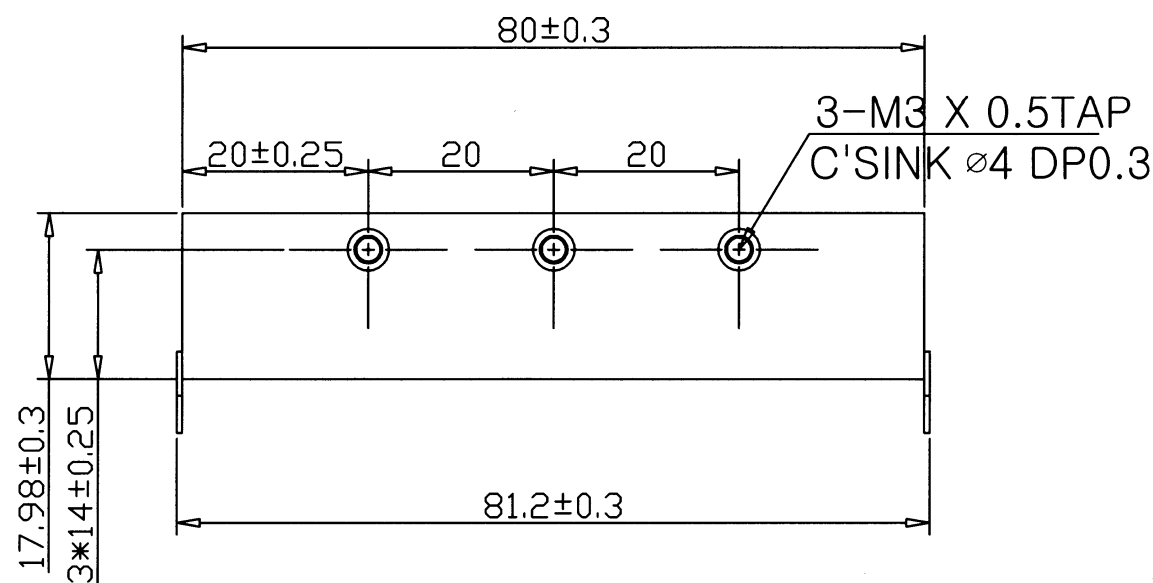
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NO	THE NAME OF AN ARTICLE	DWG-NO	MATERIAL	Q'TY	REMARK
1	HEAT SINK - A		AL 6063 (탈지처리)	1	
2	PIN-TERMINAL		SPCC t=0.8(주석도금)	2	

후가공명		선택
아노다이징 (Anodizing)	단면부 포함	
	단면부 제외	
착색	WHITE	
	BLACK	



PIN PLATE



REVISION	NO.				UNIT	SCALE	PLANNED BY	CHECKED BY	APPROVED BY		ATN 32
							J.W.KIM		K.R.KANG		
					mm	1/1	2007.11.10		2007.11.10		
	GENERAL TOLERANCE				PROJECTION	USER	FILE NAME				
		LEVEL1	LEVEL2	LEVEL3	3RD ANGLE						HEAT SINK (유양)
	0 ~ 4	±0.05	±0.10	±0.20							
	4 ~ 16	±0.08	±0.15	±0.30							
	16 ~ 64	±0.12	±0.25	±0.50							
	64 ~ 250	±0.25	±0.40	±0.80							
		 YU-WON NRT Co.,Ltd.									DWG NO.

9. Wire Ass'y

Scanning	LIB 구축

APPROVAL SHEET

CUSTOMER : LG ELECTRONICS

ITEM : CONNECTOR ASS'Y

MODEL :

P / N : ATN32 SMH250-06-160

DATE : 2007. 11. 22

CUSTOMER'S APPROVED

APPROVED		
. . 20 .		
LG Electronics Inc. GUMI KOREA		
DISPLAY DIVISION		
MODEL		
DESC		
PART No.		
EN'GR	CHKD	APPD

	CUIT.	MECH.	SAFETY	EMI
CHKD				
APPD				

慶北 金泉市 牙浦邑 仁理 1034-17

株式會社

幸星社

代表理事

許



Head Office

169-13 Oncheon 1-Dong, Dongnae-Gu, Pusan, Korea

Tel : 82-51-557-6601~2 Fax : 82-51-554-6604

Gimchon, Korea

1034-17, In-ri, Apo-eup, Gimchon Gyoung Buk, Korea

Tel : 82-54-432-2771

Fax : 82-54-432-6378

APPROVAL SHEET

CUSTOMER	LG ELECTRONICS
ITEM	CONNECTOR ASS'Y
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PART NO.	ATN32 SMH250-06-160
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WEIHAI, CHINA	125, Longshan Rd, Wendeng Weihai City Shandong, China Tel ; 86-631-835-7044 Fax ; 86-631-835-6429
NANJING, CHINA	105 Hao Gaohulu Jiangning Kaifaqu Nanjing, China Tel ; 86-25-444-4664~5 Fax ; 86-25-444-3880
SHENYANG, CHINA	32-2 Hao Hunnan Chanyequ Gaoxinqu Shen Yang, China Tel ; 86-24-2378-4637 Fax ; 86-24-2378-4635
TIANJIN, CHINA	#203 Xing Zhong Rd Beichenqu Hi-Tech Industry Park Tianjin Tel ; 86-22-2662-6038 Fax ; 86-22-2662-7302
PT. HAENG SUNG - RAYA INDONESIA	Jl. Sumbawa Blok F1 - 2 Bekasi Barat Industrial Estate Cikarang Barat - Bekasi 17520. Indonesia Tel ; 62-21-8998-2722~4 Fax ; 62-21-8998-2725

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2. REVISION RECORD	2 PAGE
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4. CONNECTION TABLE	4 PAGE
5. RAW MATERIAL LIST	4 PAGE
6. NOTE	5 PAGE
7. PACKING SPEC	5 PAGE
8. MATERIAL DEMENSION	
* ANNEX : ENVIRONMENT DATA	

INTERNATIONAL INSPECTION

UL/ CSA FILE NO AND CERTIFICATION INFORMATION
ATTACHED COMMON STYLE COPY SHEET.

Other UL Certification of Original copy can be offered by customer request.

SPECIFICATION						PAGE	2
Description ; Connector Ass'y Specification ;							
1. REVISION RECORD							
Customer Part No.		ATN32 SMH250-06-160		Part Name		Connector Ass'y	
Rev.	Reason	Content		Date	Checked	Approval	Remark
Drawn	Yong Hwi Gu		Gu Y.H	Part Name	CONNECTOR ASS'Y		
Checked	Chel Ho Jang		Jang C.H	Part Code	ATN32 SMH250-06-160		
Approval	Gue Cheon Kim		Kim G.C	Date	2007. 11. 22		
Scale	NM	Sheet		Tolerances	± mm	Rev.	0
 HAENG SUNG CO., LTD							

2. SPECIFICATION

2.1 ARTICLE

This document defines for a Connector assembly.

2.2 Related document

Require approvals ; N.A

2.3 Characteristics of complete wire / cable

2.3.1 Appearance ; The body shall be clean and shall not bear any stain, rest or flaw.

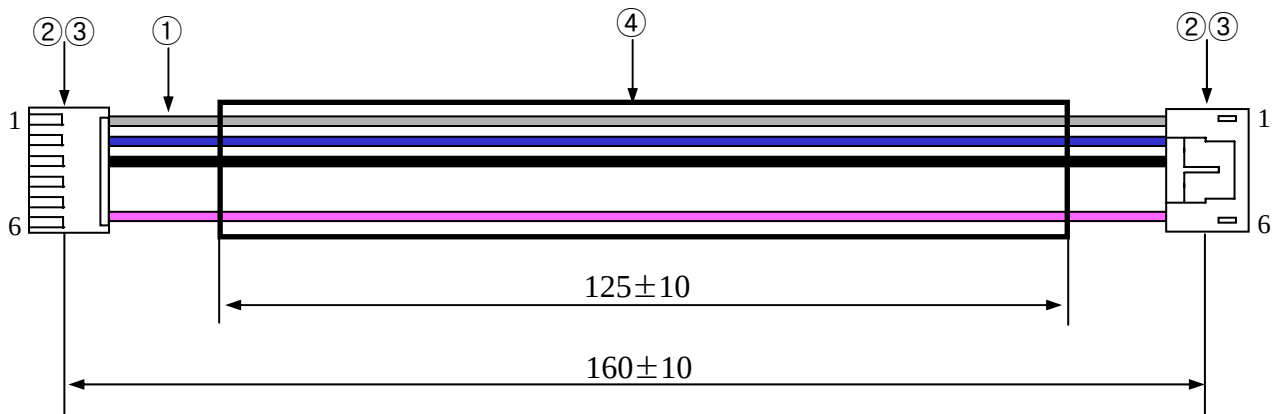
2.3.2 Marking ; Easily visible, and correct

2.3.3 Physical characteristics

A. Connector Assembly

SIDE A

SIDE B



Part Name

CONNECTOR ASS'Y

Part Code

ATN32 SMH250-06-160



HAENG SUNG CO., LTD

2.3.4 Connection table

CONNECTION TABLE					
WIRE AWG	COLOR	A	B	WIRE LENGTH	REMARK
UL 1007 #22	GRAY	1	1	160 ± 10 mm	Side "A" , "B" : 4-5번 NC
UL 1007 #22	BLUE	2	2	160 ± 10 mm	
UL 1007 #22	BLACK	3	3	160 ± 10 mm	
—	—	4	4	—	
—	—	5	5	—	
UL 3239 #24 6KV	PINK	6	6	160 ± 10 mm	

2.3.5 Raw Material List

No.	PARTNAME	SPECIFICATION	MANUFACTURER	App.	File No
①	LEAD WIRE	UL3239 AWG#24 6KV	SUMITOMO	UL/CSA	E41105
		UL1007 AWG#22	LS cable	UL/CSA	E52853
			Dae Young	UL/CSA	E139338
			SHIN HWA	UL/CSA	E97577
			LTK WIRING	UL/CSA	E148000
			SANGNONG	UL/CSA	E83147
			COSMOLINK	UL/CSA	E88237
			XINYA	UL/CSA	E170689
			Kunshan Renkang	UL/CSA	E209969
②③	HOUSING / TERMINAL	SMH250-06	YH	UL/CSA	E108706
		YST025	YH	UL/CSA	E108706
④	PVC TUBE		DAECHANG	UL/CSA	E120268
			Suzhou Zhongtian	UL/CSA	E206666
			SAMHWA KDK	UL/CSA	E58072

Part Name

CONNECTOR ASS'Y

Part Code

ATN32 SMH250-06-160

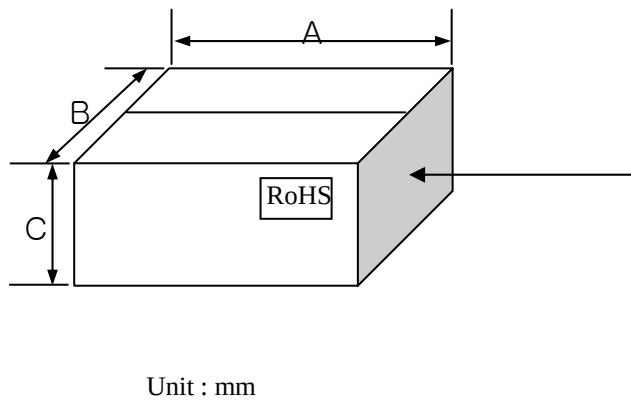


HAENG SUNG CO., LTD

2.3.6 Note

- ① MARKING ; 'H' or 'HS' MARK PRINTED ON THE HOUSING
- ② PAPER TAPE TURNS ; 2.5Ts Min
- ③ THERE SHOULD BE NOT TROUBLE IN THE APPEARANCE OF PRODUCT, AFTER PRODUCTION
- ④ IF EACH COMPONENTS'S DRAWING FOR SPECIFICATION OF DRAWING WAS ANY PROBLEM, IT IS ABLE TO BE CHANGED UPON DELIBERATION (LG ELECTRONIC AND SUPPLIER)
- ⑤ OTHER ITEMS SHOULD MEET THE DIRECTIONS FOR CONNECTOR WORK IN DRAWING 387-890.
- ⑥ THE WIRE LENGTH IS THE WHOLE LENGTH OF THE LEAD WIRE (INCLUDING THE STRIPPED PART)
- ⑦ WE DON'T USE ENVIRONMENTAL MATERIAL OF LEVEL 1

2.3.7 PACKING SPEC



BOX SIZE

Unit : mm

ITEM	A	B	C
TYPE 1	530	350	300
TYPE 2	500	255	300
TYPE 3	480	290	230
TYPE 4	473	234	138
TYPE 5	237	234	208

MAKER	(주) 행 성 사
PART NO	ATN32 SMH250-06-160
SPEC	CON ASS'Y
LOT NO	
QTY	EA
DATE	200 . . .

Part Name

CONNECTOR ASS'Y

Part Code

ATN32 SMH250-06-160



HAENG SUNG CO., LTD

Scanning	LIB 구축

APPROVAL SHEET

CUSTOMER : LG ELECTRONICS

ITEM : CONNECTOR ASS'Y

MODEL :

P / N : ATN32 12P-350(U/T)

DATE : 2007. 12. 20

CUSTOMER'S APPROVED

APPROVED		
. . 20 .		
LG Electronics Inc. GUMI KOREA		
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2.1 ARTICLE

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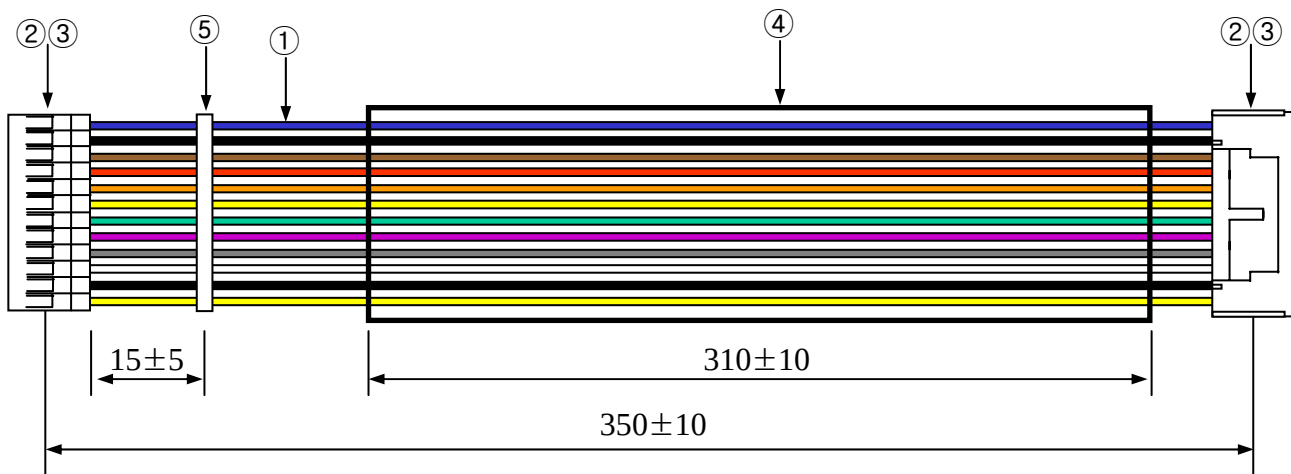
2.3.2 Marking ; Easily visible, and correct

2.3.3 Physical characteristics

A. Connector Assembly

SIDE A

SIDE B



Part Name

CONNECTOR ASS'Y

Part Code

ATN32 12P-350(U/T)

2.3.4 Connection table

CONNECTION TABLE					
WIRE AWG	COLOR	A	B	WIRE LENGTH	REMARK
UL 1007 #24	BLUE	1	1	350 ± 10 mm	
UL 1007 #24	BLACK	2	2	350 ± 10 mm	
UL 1007 #24	BROWN	3	3	350 ± 10 mm	
UL 1007 #24	RED	4	4	350 ± 10 mm	
UL 1007 #24	ORANGE	5	5	350 ± 10 mm	
UL 1007 #24	YELLOW	6	6	350 ± 10 mm	
UL 1007 #24	GREEN	7	7	350 ± 10 mm	
UL 1007 #24	VIOLET	8	8	350 ± 10 mm	
UL 1007 #24	GRAY	9	9	350 ± 10 mm	
UL 1007 #24	WHITE	10	10	350 ± 10 mm	
UL 1007 #24	BLACK	11	11	350 ± 10 mm	
UL 1007 #24	YELLOW	12	12	350 ± 10 mm	

2.3.5 Raw Material List

No.	PARTNAME	SPECIFICATION	MANUFACTURER	App.	File No
①	LEAD WIRE	UL 1007 AWG #24	LS cable	UL/CSA	E52853
			Dae Young	UL/CSA	E139338
			SHIN HWA	UL/CSA	E97577
			LTK WIRING	UL/CSA	E148000
			SANGNONG	UL/CSA	E83147
			COSMOLINK	UL/CSA	E88237
			XINYA	UL/CSA	E170689
			Kunshan Renkang	UL/CSA	E209969
②③	HOUSING / TERMINAL	SMH200-12	YH	UL/CSA	E108706
		YST200	YH	UL/CSA	E108706
④	PVC TUBE		DAECHANG	UL/CSA	E120268
			Suzhou Zhongtian	UL/CSA	E206666
			SAMHWA KDK	UL/CSA	E58072
⑤	TAPE		INTERTAPE POLYMER GROUP	UL/CSA	
			YON WOO	UL/CSA	
			Hong Force Tape	UL/CSA	
			HI-TECH	UL/CSA	

Part Name

CONNECTOR ASS'Y

Part Code

ATN32 12P-350(U/T)

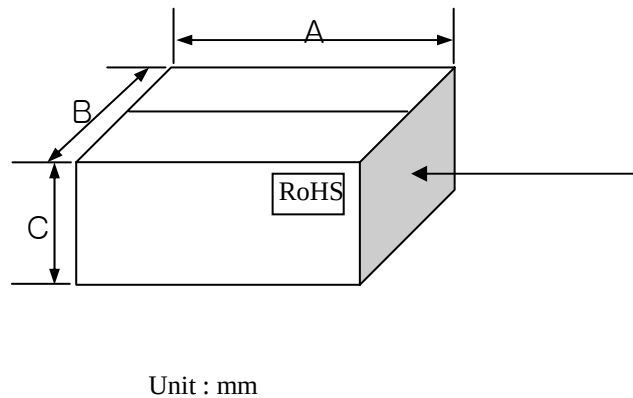


HAENG SUNG CO., LTD

2.3.6 Note

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BOX SIZE

Unit : mm

ITEM	A	B	C
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Part Name

CONNECTOR ASS'Y

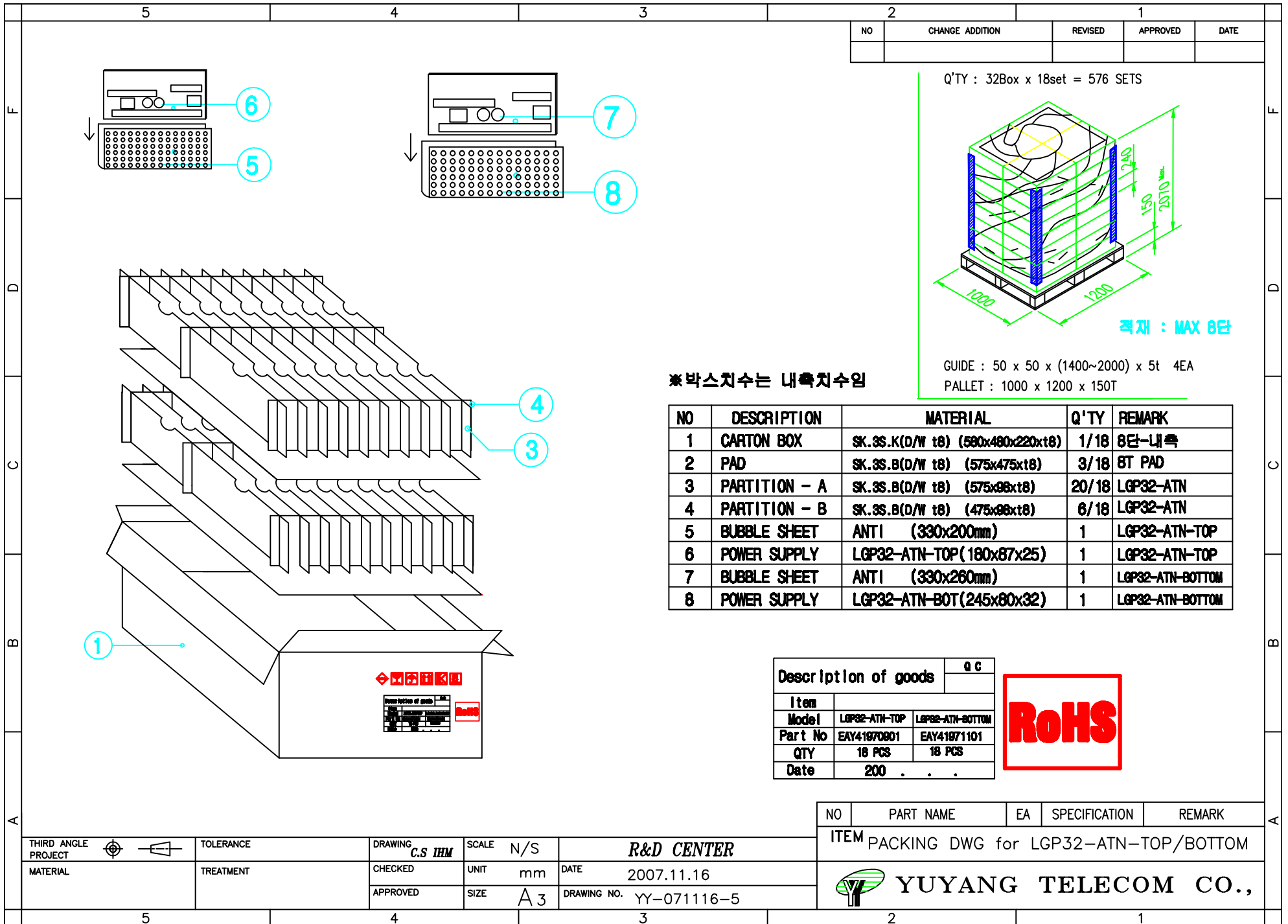
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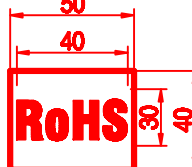
ATN32 12P-350(U/T)

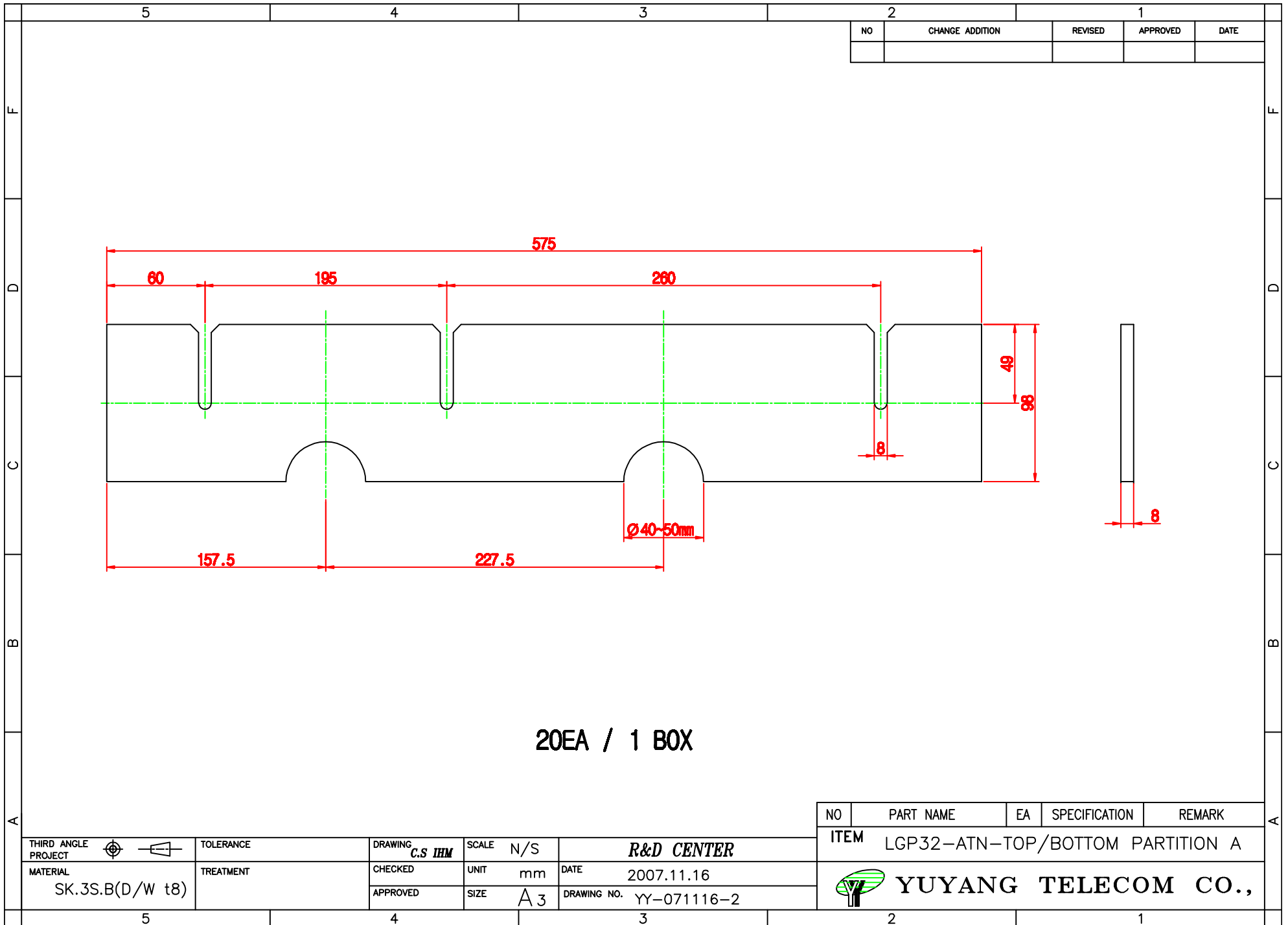


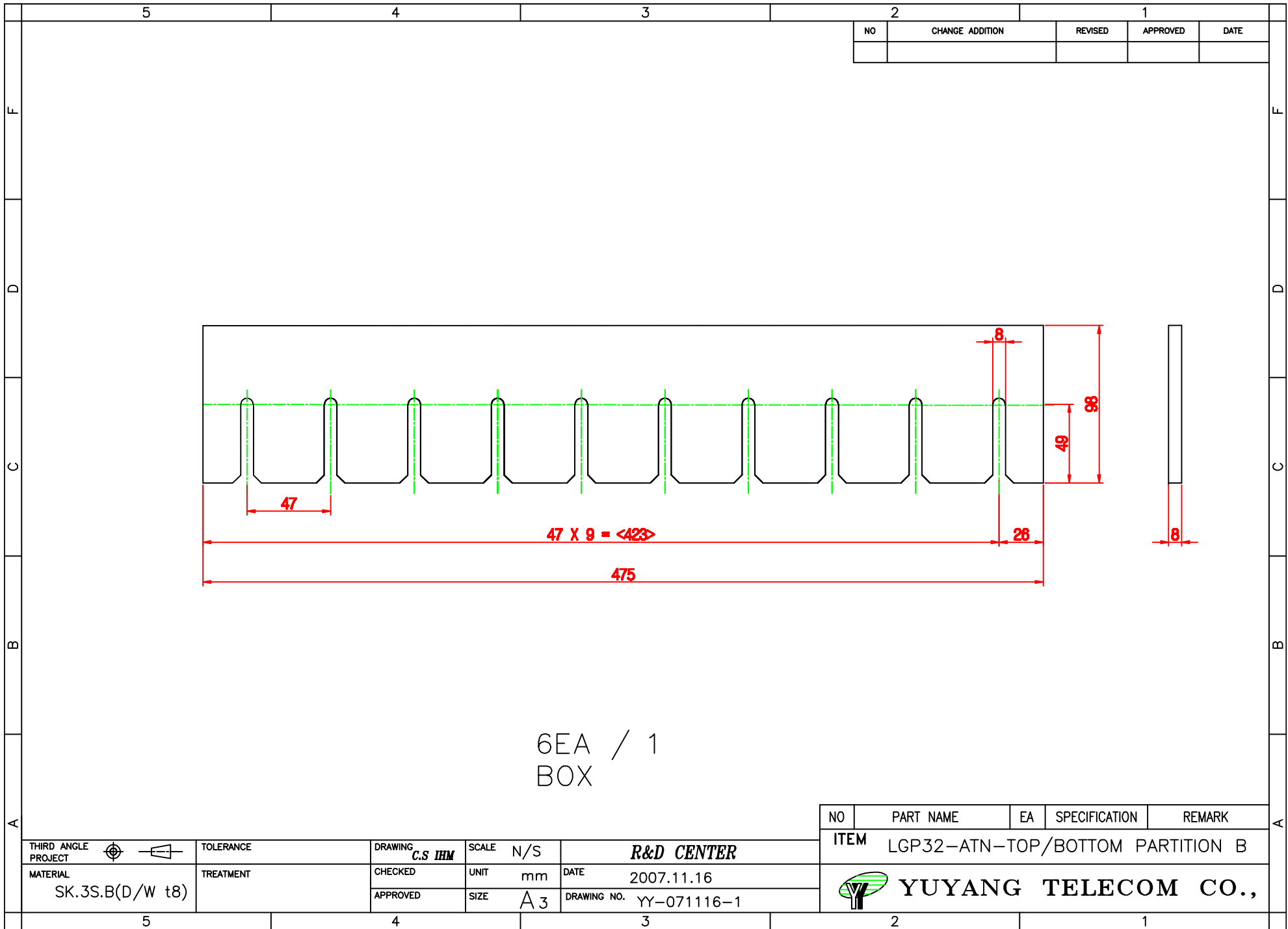
HAENG SUNG CO., LTD

10. Packing Drawing



5		4		3		2		1																																					
						NO		CHANGE	ADDITION	REVISED	APPROVED	DATE																																	
 (주) 유 양 정 보 통 신 주소: 경기도 화성시 팔명면 출암리 488-1 TEL : (대표) 031-850-7400 FAX : 031-852-6987						 Safety																																							
 YUYANG TELECOM CO.,LTD. 488-1, YULAM-RI, PALNAM-MYEON, HWASUNG-SI, KYONGGI-DO, KOREA TEL : (Ref.) +82-31-850-7400 FAX : +82-31-852-6987						<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Description of goods</th> <th>Q C</th> </tr> <tr> <td>Item</td> <td colspan="2"></td> </tr> <tr> <td>Model</td> <td>LGP32-ATN-TOP</td> <td>LGP32-ATN-BOTTOM</td> </tr> <tr> <td>Part No</td> <td>EAY41970601</td> <td>EAY41971101</td> </tr> <tr> <td>QTY</td> <td>18 PCS</td> <td>18 PCS</td> </tr> <tr> <td>Date</td> <td colspan="2">200 . . .</td> </tr> </table>		Description of goods		Q C	Item			Model	LGP32-ATN-TOP	LGP32-ATN-BOTTOM	Part No	EAY41970601	EAY41971101	QTY	18 PCS	18 PCS	Date	200 . . .																					
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※내측치수(외측치수)																																													
NOTE 1. 인쇄 COLOR 1) 문자 COLOR : BLACK 2) 취급주의 MARKING : RED 3) RoHS MARKING 및 외각선 : RED 2. SAMPLE 제시 승인 후 양산할 것 3. 박스 제작시 내측 치수를 기준으로 제작할 것 ※ 치수 : 내측치수(외측치수)																																													
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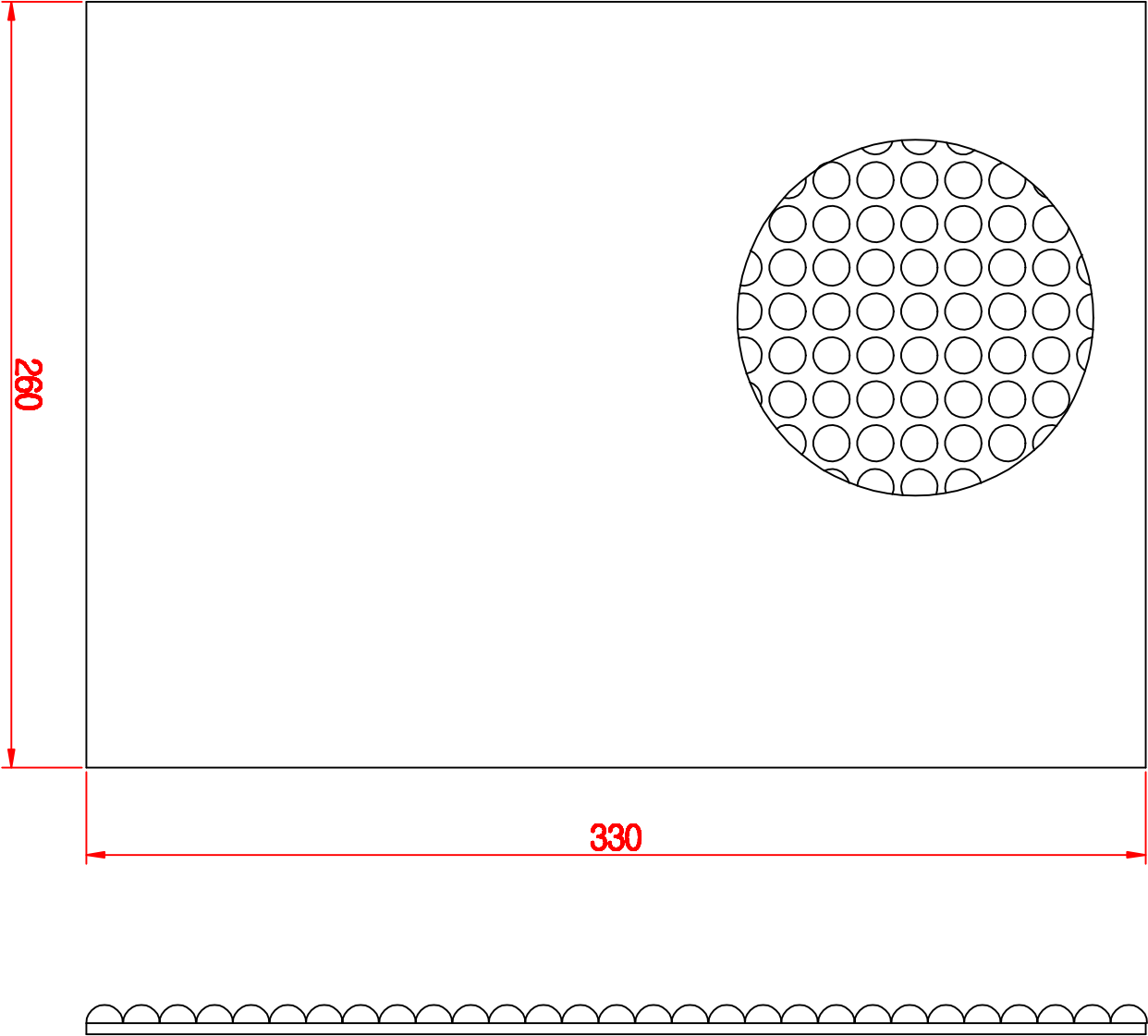




NO	PART NAME	EA	SPECIFICATION	REMARK
ITEM	LGP32-ATN-TOP/BOTTOM PARTITION B			

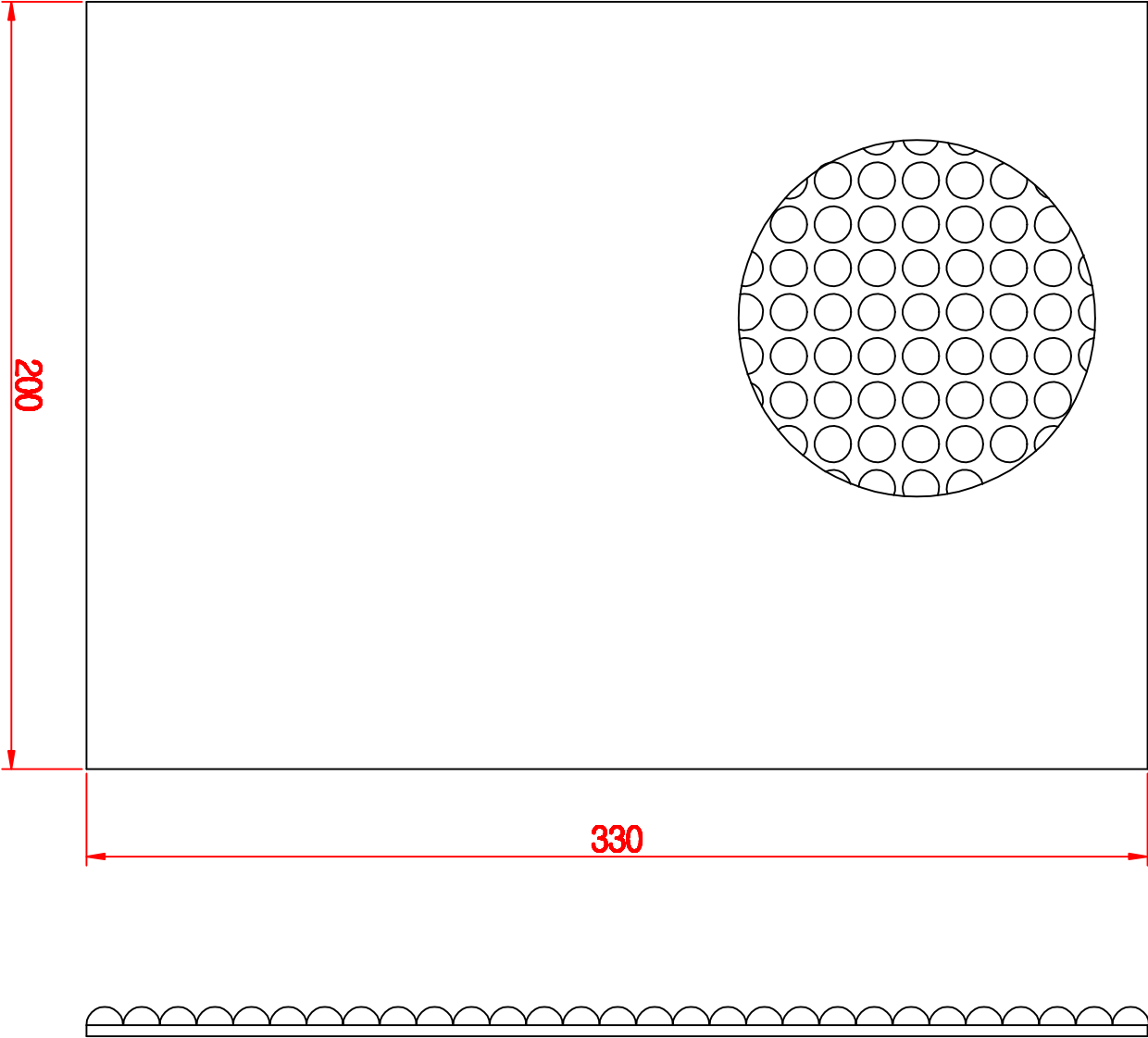
YUYANG TELECOM CO.,

REVISION				
NO	CHANGE ADDITION	REVISED	APPROVED	DATE



MATERIAL PE 10.03 PINK	R&D CENTER		DRAWING C.S IHM	ITEM LCP32-ATN-BOTTOM BUBBLE SHEET
TOLERANCE + 5 - 0	DATE 2007.11.16	CHECKED	DRAWING NO. YY-071116-6	
TREATMENT	SCALE N/S	SIZE A4	APPROVED	YUYANG TELECOM CO.,

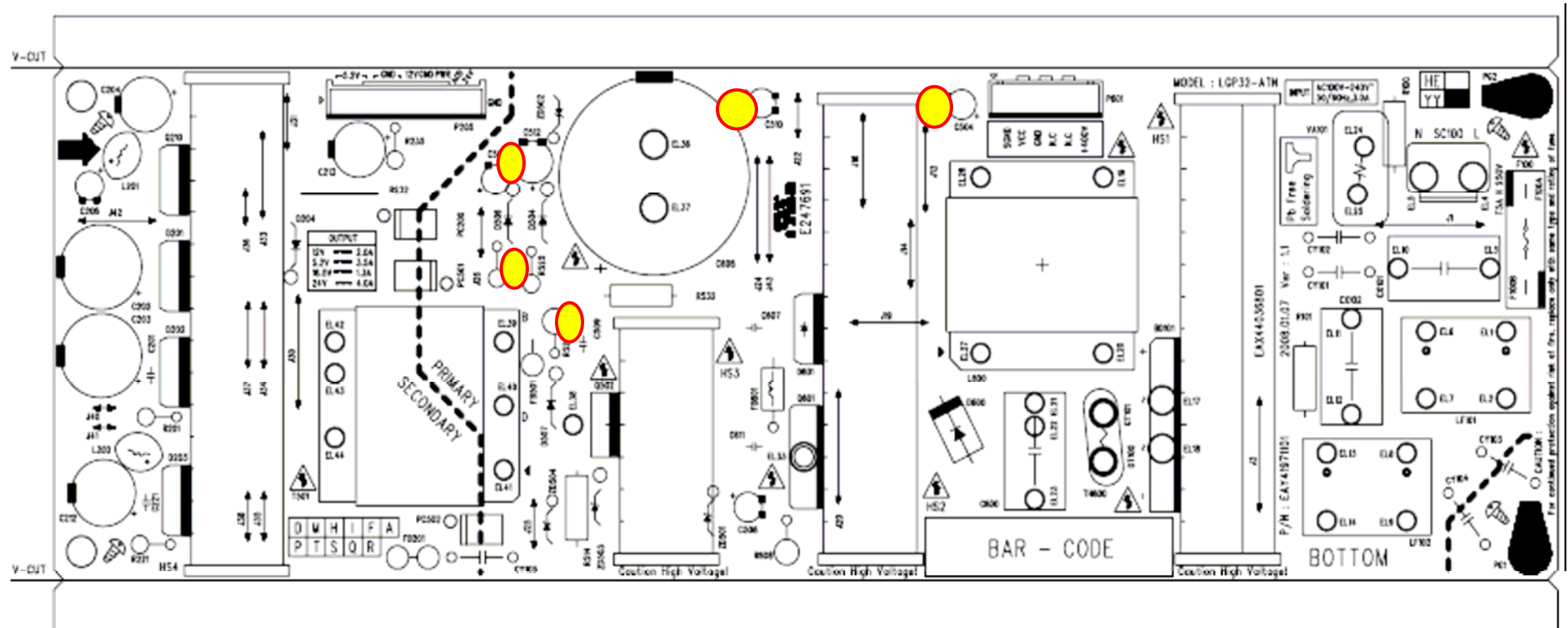
REVISION				
NO	CHANGE ADDITION	REVISED	APPROVED	DATE



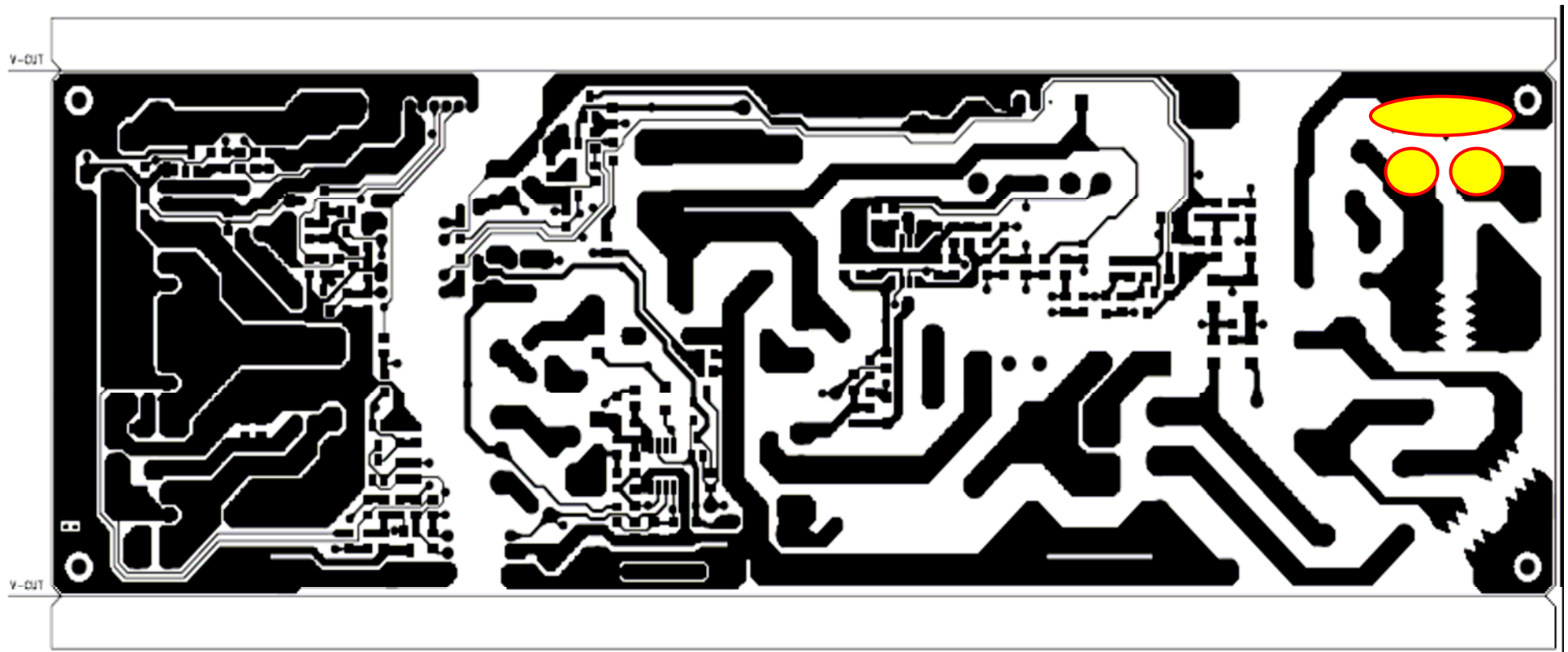
MATERIAL PE 10.03 PINK	R&D CENTER		DRAWING C.S IHM	ITEM LGP32-ATN-TOP BUBBLE SHEET
TOLERANCE $\begin{matrix} + & 5 \\ - & 0 \end{matrix}$	DATE 2007.11.16	CHECKED	DRAWING NO. YY-071116-7	
TREATMENT	SCALE N/S	SIZE A4	APPROVED	 YUYANG TELECOM CO.,

11.1 Bonding Point ()

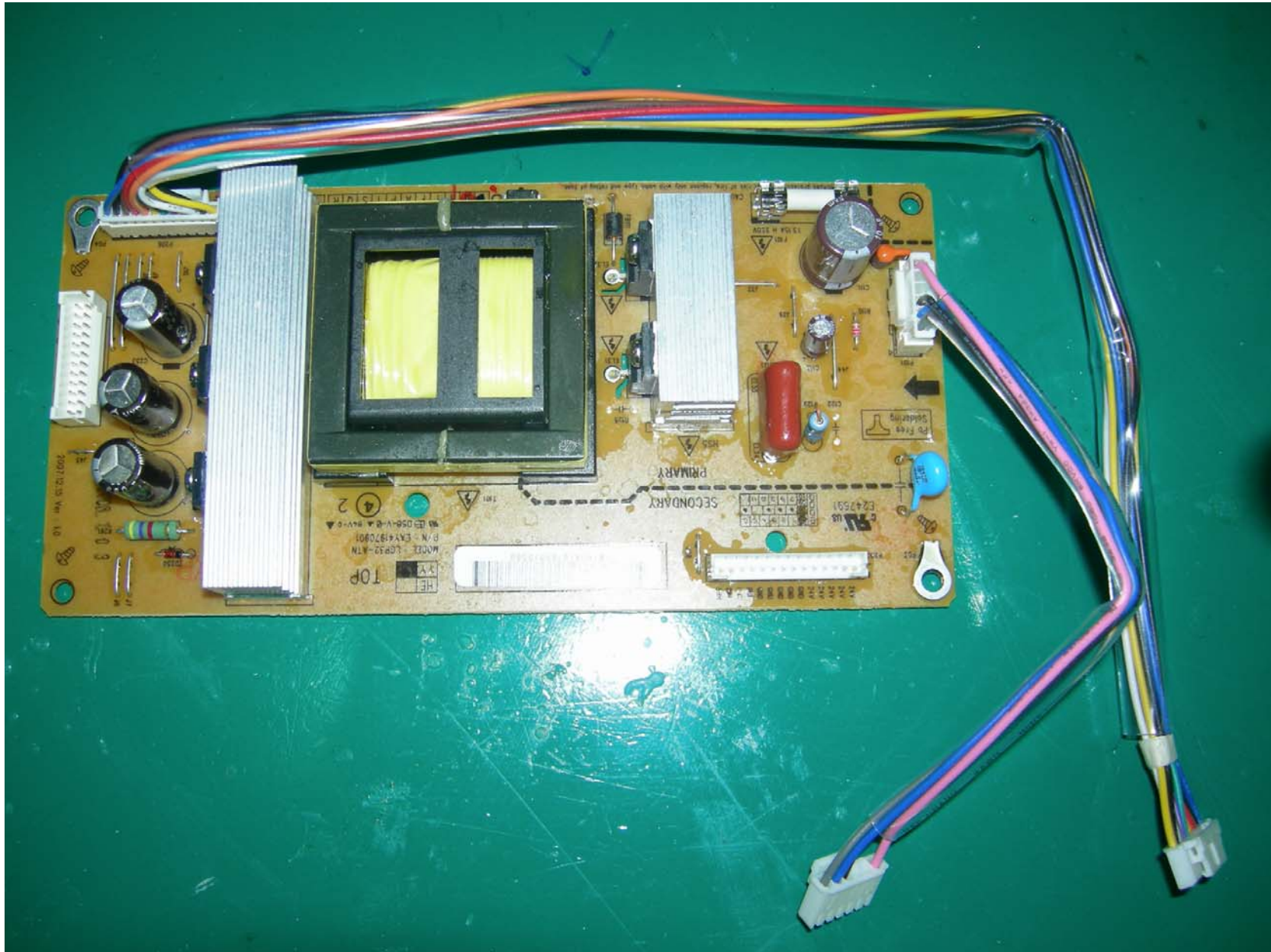
11.1 Bonding Point ()



11.2 Add Soldering Point ()



11.3 Wire Ass'y Connect (TOP B/D)



12. Magnetic Part Specification

NO	DESCRIPTION	VENDOR	REMARKS
1)	LM-006, EPC-5050	SOOJUNG	T101
2)	LS-004, EER-3124N	SOOJUNG	T501
3)	LP-001, EER-3124N	SOOJUNG	L600
4)	CV620180S	TNC	LF101, LF102

APPROVAL SHEET

CUSTOMER: LG ELECTRONICS Inc.

MODEL : LGP3237 ATN

I T E M : **MULTI** TRANS

PART NO : EBJ42805903

S.J SPEC NO : LGTR-07-55



APPROVED

DATE : 2007. 10. 31.



SOOJUNG ELECTRONICS IND. CO., LTD.

ADDRESS	Office & Factory	35-1, HongJae4-Dong, Seodaemoon-Gu, 120-094, Seoul, KOREA	TEL FAX	02-737-2329 02-737-2525
	Factor China 1	Wendong Shezheng Electronics, Beijiao, Wendeng City, shandong, China	TEL FAX	86-631-857-1392 86-631-857-1393
	Factor China 2	Dongguan Shezheng Electronics, Zhonghanqiao Industrial District, Wangniudun town, Dongguan City, Ganding, China	TEL FAX	86-769-8851-3531 86-769-8851-3530

CUSTOMER : LG ELECTRONICS Inc.

NO. 1/17	MULTI TRANSFORMER	P / N	EBJ42805903
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1. RECORD OF REVISION

REV NO.	REASON	CONTENTS	DATA OF APPROVAL	CHECKED	REMARKS

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 2/17	MULTI TRANSFORMER	P / N	EBJ42805903
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2. INDEX

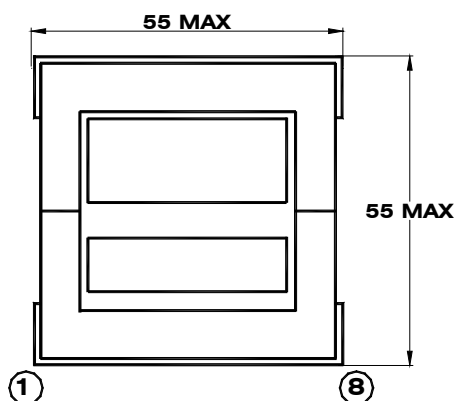
FILE NO	REVISION
1/17	1. RECORD OF REVISION
2/17	2. INDEX
3/17	3. DIMENSION
4/17	4. SCHEMATIC
4/17	5 WINDING SPECIFICATION
5/17	6. ELECTRICAL CHARACTERISTICS
6/17	7. ENVIRONMENTAL CHARACTERISTICS
7/17	8. MECHANICAL CHARACTERISTICS
8/17	9. INTERNAL CONSTRUCTION
9/17	10. MATERIAL LIST
10/17	11. UL CARD
11/17	UL CARD
12/17	12. CORE DIMENSION
13/17	13. PROCESS FLOW
14/17	PROCESS FLOW
15/17	14. PACKING METHOD
16/17	15. INSPECTION DATA
17/17	16. ASSIGNMENT

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

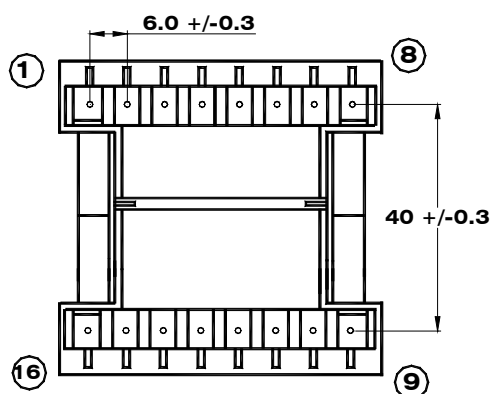
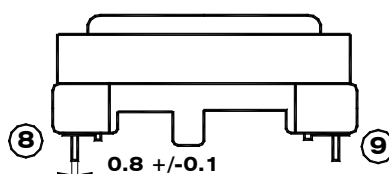
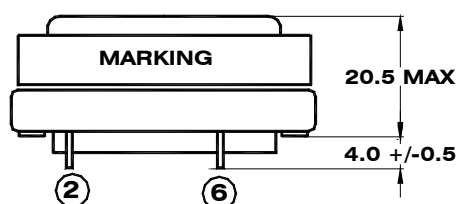
NO. 3/17	MULTI TRANSFORMER	P / N	EBJ42805903
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3. DIMENSION (UNIT:mm)



* MARKING *

PART NO
LM-006 SJB-004 SJ — INSULATION SYSTEM
SJ XXXX EBJ42805903 — LG PART NO
 WEEK
 YEAR
 MAKER



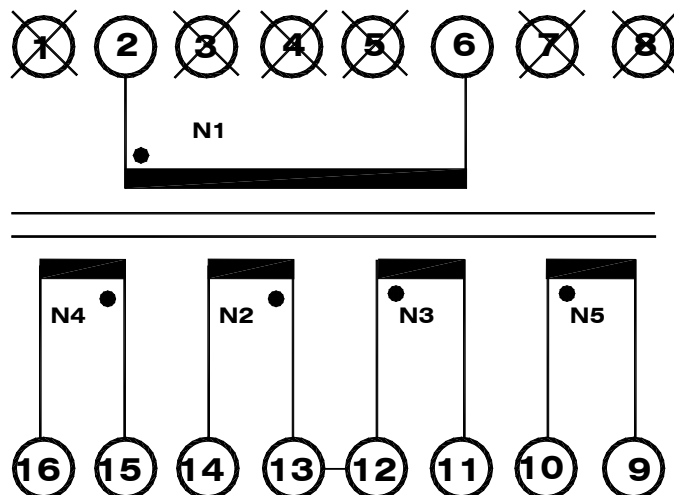
※ OMIT PIN NO :#1,#3,#4,#5,#7,#8

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.							
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-
									5	5	

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NO. 4/17	MULTI TRANSFORMER	P / N	EBJ42805903
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4. SCHEMATIC



5. WINDING SPECIFICATION.

No.	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION TAPE	
	S	F				TURNS (MIN)	MATERIAL
N1	2	6	USTC 0.12 ϕ ×30	44 Ts	SOLENOID	3 Ts	POLYESTER TAPE t:0.025mm. W:13.0mm
N2	13	14	USTC 0.10 ϕ ×90	4 Ts	BIFILAR SOLENOID	2 Ts	POLYESTER TAPE t:0.025mm. W:17.0mm
N3	11	12	USTC 0.10 ϕ ×90	4 Ts			
N4	15	16	USTC 0.10 ϕ ×90	2 Ts	BIFILAR SOLENOID	3 Ts	POLYESTER TAPE t:0.025mm. W:17.0mm
N5	9	10	USTC 0.10 ϕ ×90	2 Ts			
* CORE ROUND TAPE						3 Ts	POLYESTER TAPE t:0.025mm. W:7.5mm

※ PIN NO #12,13 OPEN or SHORT

※ PIN NO #14,15 OPEN or SHORT

※ PIN NO #10,11 OPEN or SHORT

※ NOMEX TAPE PIN NO : #2

※ P/S TAPE PIN NO : #9,#11,#13,#15

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5

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NO. 5/17	MULTI TRANSFORMER	P / N	EBJ42805903
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6. ELECTRICAL CHARACTERISTICS

No.	ITEM	TERMINAL	SPECIFICATION	REMARKS
6-1	INDUCTANCE	2 — 6 13 — 14 11 — 12 15 — 16 9 — 10	900 μ H $\pm$ 10% 7.20 μ H $\pm$ 30% 7.30 μ H $\pm$ 30% 2.00 μ H $\pm$ 30% 2.02 μ H $\pm$ 30%	LCR METER HP-4284A (AT 100KHz/ 1.0V)
6-2	LEAKAGE INDUCTANCE	2 — 6 (SECONDARY ALL SHORT)	200 μ H $\pm$ 15%	
6-3	D. C. RESISTANCE	2 — 6	0.25 Ohm MAX	WHEATSTONE BRIDGE (YEW-2755)
6-4	WITHSTANDING VOLTAGE	P COIL — S COIL	AC 3.0KV (rms) 1MINUTE.	TOS-8850 (CUT OFF CURRENT 5mA)
		P COIL — CORE S COIL — CORE	AC 1.50KV (rms) 1MINUTE.	
6-5	INSULATION RESISTANCE	P COIL — S COIL	100(M) Ohm MIN. (AT DC 500V)	TOS-8850
6-6	DC SUPERIMPOSE	2 — 6	90% MIN. WITH RESPECT TO ORIGINAL INDUCTANCE VALUE WHEN 1.4A DC IS SUPERIMPOSED.	

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NO. 6/17	MULTI TRANSFORMER	P / N	EBJ42805903
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7. ENVIRONMENTAL.

* STANDARD TEST CONDITION : TEMP. 20℃±15℃, HUMIDITY 65%±20%.

IF WHEN ANY OBJECTION IS SUGGESTED, THE TEST CAN BE OPERATED AT $20\pm 2^{\circ}\text{C}$, $65\pm 5\%\text{RH}$.

NO	ARTICLE	SPECIFICATION	TEST CONDITION														
7-1	USED TEMPERATURE RANGE	-25℃ - +105℃															
7-2	KEEPING TEMPERATURE	-25℃ - +105℃															
7-3	LOW TEMPERATURE RESISTANT	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE.	-25±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-4	HIGH TEMPERATURE RESISTANT		+105±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-5	HUMIDITY RESISTANT		95%RH ±5% (40℃±5℃) 96Hr MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-6	TEMPERATURE CYCLE		<table><tr><th>STEP</th><th>TEMP.</th><th>TIME</th></tr><tr><td>1</td><td>-25±2℃</td><td>30 MIN.</td></tr><tr><td>2</td><td>+20±2℃</td><td>10 MIN.</td></tr><tr><td>3</td><td>+105±2℃</td><td>30 MIN.</td></tr><tr><td>4</td><td>+20±2℃</td><td>10 MIN.</td></tr></table> REPEAT 5 TIME FROM STEP 1AND TEST AFTER 2 Hr. AT ROOM TEMP.	STEP	TEMP.	TIME	1	-25±2℃	30 MIN.	2	+20±2℃	10 MIN.	3	+105±2℃	30 MIN.	4	+20±2℃
STEP	TEMP.	TIME															
1	-25±2℃	30 MIN.															
2	+20±2℃	10 MIN.															
3	+105±2℃	30 MIN.															
4	+20±2℃	10 MIN.															
7-7	환경성 시험 (유해물질)	XRF 장비로 시험시료를 120초간 SCAN하여 Cd 측정결과 함유량이 50 ppm 미만이며, Std Dev (표준편차) 값이 17미만, Pb 200ppm, Hg 200 ppm, pbb 100 ppm, pbde 100 ppm, 미만일 것. ICP로 측정은 Cd 10 ppm, Pb 100 ppm, Hg 100 ppm, Cr6 100 ppm, Pbb 100 ppM, Pbde 100 ppm 미만일것.															

[illegible]

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8. MECHANICAL CHARACTERISTICS.

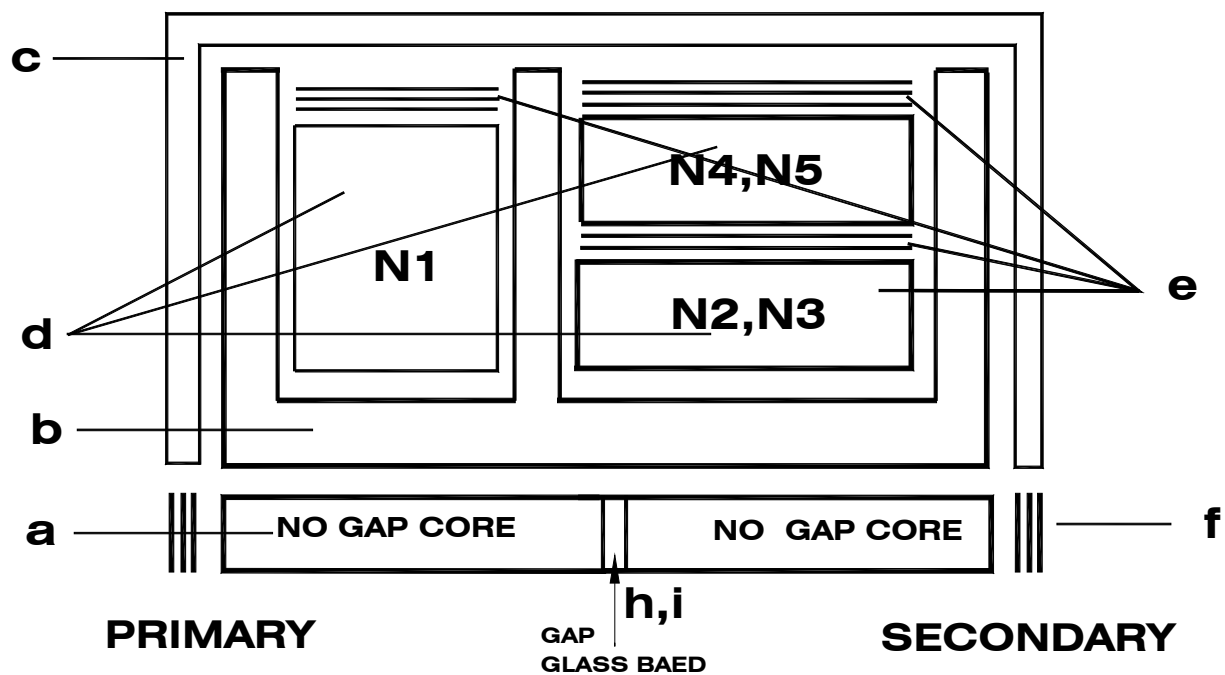
NO.	ARTICLE	SPECIFICATION	TEST CONDITION
8-1	LAYER SHORT TEST	THERE IS NO DEFECT ON THE WIRE INSULATION COMPARE WITH STANDARD SAMPLE	SUPPLY SURGE VOLTAGE (AC 1.5KV) BETWEEN WIRE AND MEASURE THE WIRE INSULATION.
8-2	SOLDER HEAT TEST	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 10 ± 0.5 SECONDS. MEASURE AFTER 2 Hr. AT ROOM TEMP.
8-3	SOLDER ABILITY	95% MIN OF THE PIN OUT-DIA BE COVERED BY NEW SOLDER	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 3 ± 0.5 SECONDS.
8-4	VIBRATION	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	1) TOTAL EXCURSION MAX. : 1.5mm 2) VIBRATION FREQUENCY : 10-55 Hz 3) TRAVERSED TIME : 1 MINUTE. 4) TEST AFTER 2 HRs. IN EACH OF 3 MUTUALLY PERPENDICULAR DIRECTION.
8-5	TERMINAL PULL STRENGTH	THE PRODUCT HAS NOT ANY ABNORMALITY AND OPERATE PROPERLY SATISFIED TO INITIAL VALUE.	PULL THE PIN WITH 2.5 Kg.f DURING 30 ± 5 SEC.

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9. INTERNAL CONSTRUCTION



DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5
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CUSTOMER : LG ELECTRONICS Inc.

NO. 9/17	MULTI TRANSFORMER	P / N	EBJ42805903
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10. MATERIAL LIST.

NO	PART	MATERIAL	UL FILE NO.	REMARKS
a	CORE	EPC-5050 PM-7, DMR -40,		ISU CERAMICS CO., LTD. or DONG YANG MAGNETICS CO., LTD. or JFE FERRITE CORP.
b	BOBBIN	EPC-5050 PHENOL (94V-0) PF-2736 (16PIN)	E41429 (M)	SUMITOMO BAKELITE CO., LTD.
c	CAP	EER-3944 PBT (94V-0) SK-655FR	E41938 (S)	EI DUPONT DE NEMOURS & CO INC.
d	WIRE	(MW-75) USTC 0.12 ϕ ×30 USTC 0.10 ϕ ×90	E102761(S) E141925 (S)	DONGYANG ELECTRONICS CO., LTD. or YOUNG WHA SA CO., LTD.
e	INSULATION TAPE	POLYESTER TAPE Cat NO. 204 0.025t x 17mm (YELLOW) 0.025t x 13mm (YELLOW)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
f	APPEARANCE FOR CORE	POLYESTER TAPE Cat NO. 204 (7.5W, YL)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
g	VARNISH	WP-2952F-2G or SR-337 or EQV.	E72979 E257443	HITACHI CHEMICAL CO., LTD. SEKYE CHEMICAL CO., LTD. or EQV.
h	GAP	GLASS BEAD (+80 ~ -100)		MO-SCI CORPORATION
i	CENTER EPOXY	EPOXY SK-014 or rev.		SEKYE CHEMICAL CO., LTD.
j	SOLDER	HSE-09 (Pb FREE)		HEE SUNG METAL CO., LTD.

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NO. 10/17	MULTI TRANSFORMER	P / N	EBJ42805903
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11. UL CARD.

SUMITOMO BAKELITE CO., LTD.
2100 TAKAYANAGI FUJIEDA-SHI SHIZUOKA 426-0041, JAPAN

F41429

		RTI									
		Min	UL94	Elec	Mech	H		H	V	4	C
		Thk	Flame		With	w/o	W	A	T	9	T
Mtl	Dsg	Col	mm	Class	Imp	Imp	I	I	R	5	I

Acrylonitrile Butadiene Styrene (ABS), modified, "PERMAFLOW", furnished as pellets.

Phenolic (PF), designated "SUMIKON", furnished as pellets or granular material.

PM- 9820	BK	0.30	94V-0	150	150	150	--	--	--	--
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E I DUPONT DE NEMOURS & CO INC

F41938

		RTI									
		Min	UL94	Elec	Mech	H		H	V	4	C
Mtl Dsa	Col	Thk	Flame		With	w/o	W	A	T	9	T
		mm	Class		Imp	Imp	I	I	R	5	I
Product Description : Polybutylene Terephthalate (PBT), glass reinforced, flame retardant, designated "Craslin" furnished as pellets.											

SK -655FR(+)	ALL	0.75	94V-0	130	130	140	3	0	0	7	3
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DONG YANG ELECTRONICS IND CO. LTD

E102761 (S)
(B-cont. from A card)

Mtl	Coat Typ*	ANSI Typ*	TI
Dag	BC	TC	
UEW	Polyurethane	MW75	130

YOUNG WHA SA CO., LTD.

E141925 (S)

256-1 DODANG-DONG WONMI-KU BUCHON, KYONGGI-DO
421-130 KOREA

(A card)

Mtl	Coat	Tvd*	ANSI	
Dao	BC		Tvd*	TI
UEW-B	Polvurethane	TC	MW75-C	130

DUCK SUNG TAPE CO LTD

E105147 (S)

DAESUNG BLDG 677 JAYANG-DONG SUNGDONG-KU,
SEOUL 133-190 KOREA

Polyester film insulating tape, Cat No. DTS-204 rated 130 C.

Marking : Company name or trademark ☐ or "E105147" and catalog designation
Printed on carton, wrapper or core.

[illegible]

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TAE HWA INDUSTRIAL CO LTD

E92677 (S)

634 DEUNGCHON-DONG KANGSE0-KU, SEOUL
157-030 KOREA

Polyester film tape, Cat. No. H-5673, rated 130 C.

Marking : Company name or E92677 and " Flame Retardant" printed on carton, wrapper and/or core.

JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.

E165111

SOUTHWEST AROUND RD JINGJIANG JIANGSU 214500, CHINA

Nonwoven cloth/polyethylene terephthalate film tape, Cat. No. WF with suffixes, rated 130 C*(a).

Polvethylene terephthalate film tape, Cat. No. PZ with additional suffixes, rated 130 C*(b).

HITACHI CHEMICAL CO. LTD.
SHIBAURA SQUARE BLDG 4-9-25 SHIBAURA
MINATO-KU YOKYO 108-0023, JAPAN

E72979

Varnish

ANSI

Daq

Magnet

TWP-2952F-2G

MW28, MW75.

MW79, MW80

Varnish

Terminal Class C

TP	HC	CE
----	----	----

130 130

SF KYF CHEMICAL CO LTD

E257443

360 GULIFON-R1

TONG, JIN-FU, P. 103

KIMPO-SI, KYUNGGI-DO 415-862 REPUBLIC OF KOREA

Varnish

ANSI

Dag

Magnet

SR-337(##)

MW75

Varnish

Terminal Class C

TP HC CE

130 130

- May be followed by 1 or 2 suffix numeric and /or alpha characters to denote viscosity change accomplished via solvents due to production tolerance.

Marking: Company name and varnish designation on shipping container.

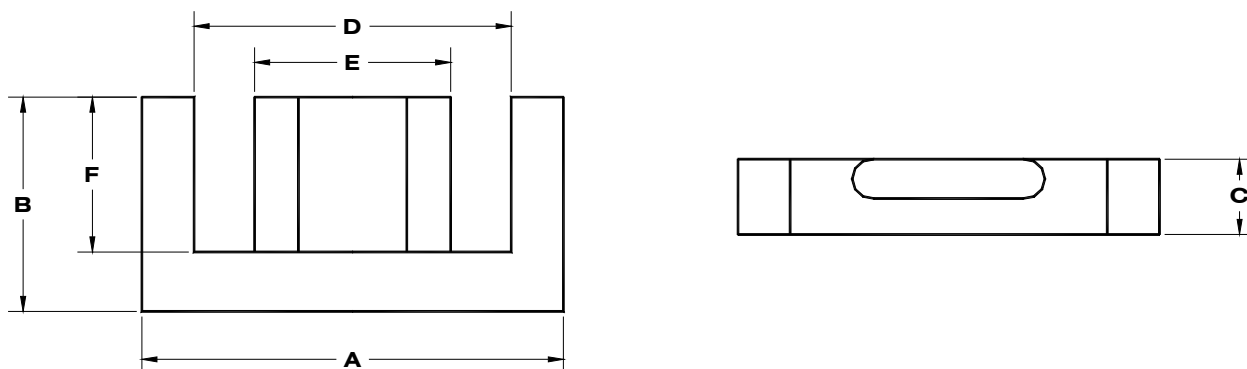
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12. CORE DIMENSION



** DIMENSION (UNIT: mm)

TYPE	DIMENSION (m/m)						REMARKS
	A	B	C	D	E	F	
EPC-5050	50.5±0.6	25.6±0.3	9.0±0.3	38.0±0.4	23.5±0.3	18.5±0.3	ISU
EPC-5050	50.5±0.7	25.6±0.3	9.0±0.3	38.0±0.4	23.5±0.3	18.5±0.3	DONGYANG MAGNETICS

** EFFECTIVE PARAMETERS

TYPE	EFFECTIVE PARAMETERS			REMARKS
	Le (mm)	Ae (mm²)	Ve (mm³)	
EPC-5050	113.7	114.3	12996	ISU
EPC-5050	113.7	114.3	12996	DONGYANG MAGNETICS

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13. PROCESS FLOW

NO	공 정			기 능	관 리 항 목	관 리 기 준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고
	기 호	공 정 명	사 용 설 비				확인요령	부 서			
01		수입검사 - BASE - CORE - PS TAPE - WIRE	버니어캘 리퍼 마이크로 메터	수 동	치수 핀홀 접착성 외관상태	이상 없을것	SAMPLE	Q · C	구매 사양 서	수 입 검 사 성 적 서	· 치수 불량 · 파손 · 핀홀 · WIRE 피복 벗겨짐 · BASE 단자 위치 바뀜 · 바리 · 접착성 나쁨
02		권 선	권 선 기	반 자 동	절연상태 권선절연상태 권선수	〃	전수검사	생산팀	작업 지도 서		· 권선 및 절연수 불량 · 정열권선 안됨 · 절연거리 미 확보 · 권선위치 불량
03		결 선	니 퍼	수 동	특성 결선 마무리	〃	육안검사	〃	〃		· SHORT · 인접단자 접촉 · 미 결선
04		납 땜	납 조	수 동	납땜온도 납땜시간	450℃ ±30℃ 2~4초	수회 / 일	〃	〃		· SHORT · 냉땜 · BASE 변형
05		CORE조립		수 동	CORE종류 GAP SIZE CENTER EPOXY 조립상태	이상 없을것	전수검사 SAMPLE 육안검사	〃	〃		· 코아 역삽 · GAP CORE 혼입
06		경 화	건 조 기	반 자 동	경화온도 경화시간	120℃ ±10℃ 1.5 HR	SAMPLE	〃	〃		· 미 경화
07		1차 검사	TURN METER	반 자 동	INDUCTANCE 권선수	〃	전수검사	〃	〃		· L값 상.하 불량 · 권선수 미달
08		함 침	진공 함침기	반 자 동	경화온도 함침액 상태	120℃ ±10℃ 이상 없을것	SAMPLE	〃	〃		· 미 경화

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									-	5
										5

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CUSTOMER : LG ELECTRONICS Inc.

NO. 14/17	MULTI TRANSFORMER	P / N	EBJ42805903
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NO	공 정			기 능	관 리 항 목	관 리 기준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고
	기 호	공 정 명	사 용 설 비				확인요령	부 서			
09	○	경 화	건 조 기	반 자 동	경화온도	120℃ ±10℃	SAMPLE	"	"		· 미 경화
					경화시간	1 HR					
10	○	핀 형 합	핀형합기	반 자 동	핀간거리	"	전수검사	생산팀	작 업 지 도 서		· 핀 형합 불량 · 베이스 변형 · 단자 이탈
11	◇	 최종검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	전수검사	"	"		· L값 상.하 불량 · 단자 이물 · 내전압 불량
12	○	마 킹	불멸 잉크	수 동	마킹방향 마킹외관	"	육안검사	"	"		· 역방향 마킹 · 외관불량
13	○	포 장		수 동	수량관리 포장상태	"	육안검사	"	"		
14	○	 출하검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	SAMPLE	품질 관리팀	승 인 원		
15	▽	입 고						영업팀	"	INSPEC- TION REPORT	

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.							
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-
										5	5

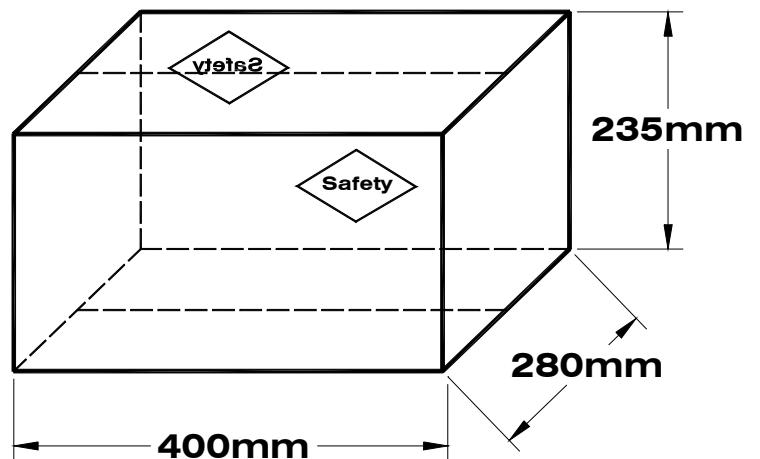
DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 15/17	MULTI TRANSFORMER	P / N	EBJ42805903
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14 PACKAGE METHOD.

NAME	
ITEM	
LOT NO.	
Q' TY	EA
SOOJUNG ELECTRONICS INC CO., LTD.	



NO	PART	SPECIFICATION
14-1	BOX SIZE	400mm × 280 mm × 235mm
14-2	OUT BOX MATERIAL	SK.3S.B
14-3	BOX WEIGHT	16 Kg (ref)
14-4	PACKAGE QUANTITY	120 EA

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 16/17	MULTI TRANSFORMER	P / N	EBJ42805903
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15. INSPECTION DATA

ITEM NAME	MULTI TRANS	TEST DATE	2007. 09. 19										
PART NO.	EBJ42805903 (LM-006)	INSTRUMENT	3245 ANALYZER (WK) (at 100KHz)										
시험 항목	PIN NO.	SPEC	1	2	3	4	5	6	7	8	9	10	-
L	2 - 6	900μH ±10%	903.0	902.1	876.4	885.0	903.7						
	13 - 14	7.20μH ±30%	7.20	7.37	7.13	7.27	7.37						
	11 - 12	7.30μH ±30%	7.29	7.49	7.27	7.40	7.42						
	15 - 16	2.00μH ±30%	1.95	2.02	1.94	1.97	2.04						
	9 - 10	2.10μH ±30%	1.98	2.05	1.97	2.02	2.06						
LEAKAGE INDUCTANCE	2 - 6 (2차측 SHORT)	200 μH ±15%	195.0	205.4	192.3	206.4	203.4						
DCR (mΩ)	2 - 6	0.25 ΩMAX	0.13	0.13	0.13	0.13	0.13						
내 전 압	P-S,COIL	AC3.00KV1분간	OK	OK	OK	OK	OK						
	P- CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
	S -CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
절연저항	P-S,COIL	100MΩ MIN. (AT DC500V)	OK	OK	OK	OK	OK						
DC 전류중첩	2 - 6	1.4A/ 90% of INITIAL INDUCTANCE	867.3	8682	841.6	852.4	866.1						

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,S LEE	M,D KIM	K,S KIM	MULTI TRANSFORMER	L	G	T	R	-	0	7	-	5	5

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 17/17	MULTI TRANSFORMER	P / N	EBJ42805903
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_16. ASSIGNMENTS

- 1) Apply import inspection specification to the matters which are not given in drawing specification method.
- 2) Packing method follows specification approval.
- 3) If INDUCTANCE : ref is not satisfied with given specification. internal structure disassembly inspection should be necessary.
- 4) Wire bundle method.
 - * CENTER SOLENOID: Error between the center of overall wire bundle area and the center of wire bundle is required to be smaller than 2 mm.
 - * PIN SOLENOID : Error between the bottom barrier tape and winding start point is required to be smaller than 2 mm.
 - * SOLENOID AFTER : Error between the last wire of the wire bundle and start wire of after-solenoid is required to be smaller than 2 mm.
 - * TAB SOLENOID : Bundle should be continued from previous bundle. If bundle method is 2 layer, bundle should be done from top to bottom.
 - * SPACE SOLENOID : The area between wires should be uniform. Error between start and start point of the wire bundle area is required to be smaller than 2mm. Error between end point and end point of the wire bundle area is required to be smaller than 2mm.
 - * SOLENOID : No space is allowed between wires in bundling. The space between wire is required to be smaller than diameter of the wire $\times$ 2. In same layer no cross is allowed between wires.
- 5) Auxiliary tape can be used in order to enhance. But it needs prior approval from design department.

[illegible]

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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APPROVAL SHEET

CUSTOMER: LG ELECTRONICS Inc.

MODEL : LGP32374247-08H

I T E M : STAND BY TRANS

PART NO : EBJ42806001

S.J SPEC NO : LGTR-07-52



APPROVED

DATE : 2007. 10. 31.



SOOJUNG ELECTRONICS IND. CO., LTD.

ADDRESS	Office & Factory	35-1, HongJae4-Dong, Seodaemoon-Gu, 120-094, Seoul, KOREA	TEL FAX	02-737-2329 02-737-2525
	Factor China 1	Wendong Shezheng Electronics, Beijiao, Wendeng City, shandong, China	TEL FAX	86-631-857-1392 86-631-857-1393
	Factor China 2	Dongguan Shezheng Electronics, Zhonghanqiao Industrial District, Wangniudun town, Dongguan City, Ganding, China	TEL FAX	86-769-8851-3531 86-769-8851-3530

CUSTOMER : LG ELECTRONICS Inc.

NO. 1/17	STAND BY TRANS	P / N	EBJ42806001
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1. RECORD OF REVISION

REV NO.	REASON	CONTENTS	DATA OF APPROVAL	CHECKED	REMARKS

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 2/17	STAND BY TRANS	P / N	EBJ42806001
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2. INDEX

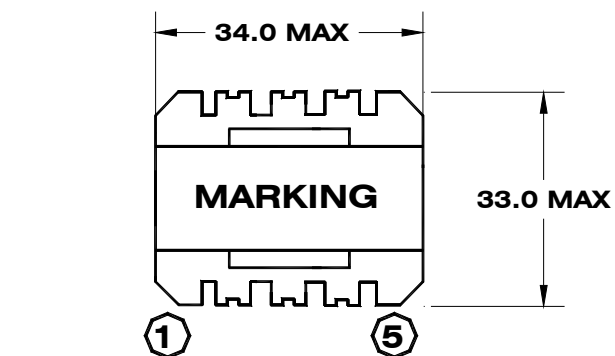
FILE NO	REVISION
1/17	1. RECORD OF REVISION
2/17	2. INDEX
3/17	3. DIMENSION
4/17	4. SCHEMATIC
4/17	5 WINDING SPECIFICATION
5/17	6. ELECTRICAL CHARACTERISTICS
6/17	7. ENVIRONMENTAL CHARACTERISTICS
7/17	8. MECHANICAL CHARACTERISTICS
8/17	9. INTERNAL CONSTRUCTION
9/17	10. MATERIAL LIST
10/17	11. UL CARD
11/17	UL CARD
12/17	12. CORE DIMENSION
13/17	13. PROCESS FLOW
14/17	PROCESS FLOW
15/17	14. PACKING METHOD
16/17	15. INSPECTION DATA
17/17	16. ASSIGNMENT

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

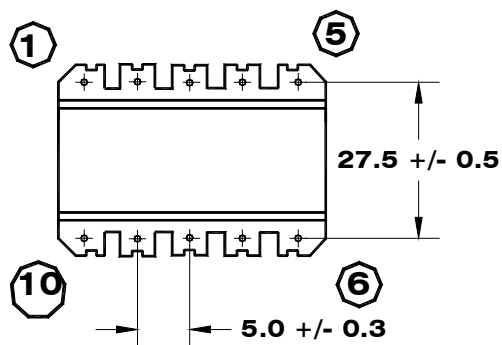
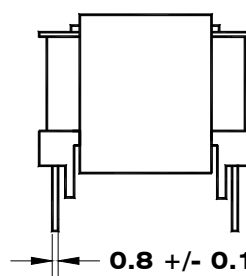
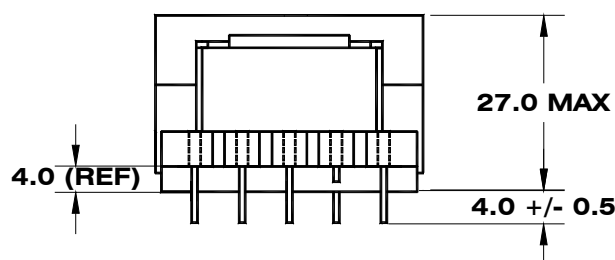
NO. 3/17	STAND BY TRANS	P / N	EBJ42806001
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3. DIMENSION (UNIT:mm)



* MARKING *

LS-004 SJB-004 SJ — PART NO
 — INSULATION SYSTEM
 SJ XXXX — LOT NO
 EBJ42806001 — LG PART NO



※ OMIT PIN NO : #10

※ CUTTING PIN NO : #4

※ GAP CORE : BOTTOM

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.							
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-
									5	2	

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 5/17	STAND BY TRANS	P / N	EBJ42806001
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6. ELECTRICAL CHARACTERISTICS

No.	ITEM	TERMINAL	SPECIFICATION	REMARKS
6-1	INDUCTANCE	3 — 5 6 — 7 8 — 9 1 — 2	395 μ H $\pm$ 7% 2.90 μ H $\pm$ 30% 15.8 μ H $\pm$ 30% 35.0 μ H $\pm$ 30%	LCR METER HP-4284A (AT 100KHz/ 1.0V)
6-2	LEAKAGE INDUCTANCE	3 — 5 (SECONDARY ALL SHORT)	20.0 μ H MAX	
6-3	D. C. RESISTANCE	3 — 5	0.50 Ohm MAX	WHEATSTONE BRIDGE (YEW-2755)
6-4	WITHSTANDING VOLTAGE	P COIL — S COIL	AC 3.0KV (rms) 1MINUTE.	TOS-8850 (CUT OFF CURRENT 5mA)
		P COIL — CORE S COIL — CORE	AC 1.50KV (rms) 1MINUTE.	
6-5	INSULATION RESISTANCE	P COIL — S COIL	100(M) Ohm MIN. (AT DC 500V)	TOS-8850
6-6	DC SUPERIMPOSE	3 — 5	90% MIN. WITH RESPECT TO ORIGINAL INDUCTANCE VALUE WHEN 3.0A DC IS SUPERIMPOSED.	

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 6/17	STAND BY TRANS	P / N	EBJ42806001
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7. ENVIRONMENTAL.

* STANDARD TEST CONDITION : TEMP. 20℃±15℃, HUMIDITY 65%±20%.

IF WHEN ANY OBJECTION IS SUGGESTED, THE TEST CAN BE OPERATED AT $20\pm 2^{\circ}\text{C}$, $65\pm 5\%\text{RH}$.

NO	ARTICLE	SPECIFICATION	TEST CONDITION														
7-1	USED TEMPERATURE RANGE	-25℃ - +105℃															
7-2	KEEPING TEMPERATURE	-25℃ - +105℃															
7-3	LOW TEMPERATURE RESISTANT	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE.	-25±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-4	HIGH TEMPERATURE RESISTANT		+105±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-5	HUMIDITY RESISTANT		95%RH ±5% (40℃±5℃) 96Hr MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-6	TEMPERATURE CYCLE		<table><tr><th>STEP</th><th>TEMP.</th><th>TIME</th></tr><tr><td>1</td><td>-25±2℃</td><td>30 MIN.</td></tr><tr><td>2</td><td>+20±2℃</td><td>10 MIN.</td></tr><tr><td>3</td><td>+105±2℃</td><td>30 MIN.</td></tr><tr><td>4</td><td>+20±2℃</td><td>10 MIN.</td></tr></table> REPEAT 5 TIME FROM STEP 1AND TEST AFTER 2 Hr. AT ROOM TEMP.	STEP	TEMP.	TIME	1	-25±2℃	30 MIN.	2	+20±2℃	10 MIN.	3	+105±2℃	30 MIN.	4	+20±2℃
STEP	TEMP.	TIME															
1	-25±2℃	30 MIN.															
2	+20±2℃	10 MIN.															
3	+105±2℃	30 MIN.															
4	+20±2℃	10 MIN.															
7-7	환경성 시험 (유해물질)	XRF 장비로 시험시료를 120초간 SCAN하여 Cd 측정결과 함유량이 50 ppm 미만이며, Std Dev (표준편차) 값이 17미만, Pb 200ppm, Hg 200 ppm, pbb 100 ppm, pbde 100 ppm, 미만일 것. ICP로 측정은 Cd 10 ppm, Pb 100 ppm, Hg 100 ppm, Cr6 100 ppm, Pbb 100 ppM, Pbde 100 ppm 미만일것.															

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 7/17	STAND BY TRANS	P / N	EBJ42806001
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8. MECHANICAL CHARACTERISTICS.

NO.	ARTICLE	SPECIFICATION	TEST CONDITION
8-1	LAYER SHORT TEST	THERE IS NO DEFECT ON THE WIRE INSULATION COMPARE WITH STANDARD SAMPLE	SUPPLY SURGE VOLTAGE (AC 1.5KV) BETWEEN WIRE AND MEASURE THE WIRE INSULATION.
8-2	SOLDER HEAT TEST	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 10 ± 0.5 SECONDS. MEASURE AFTER 2 Hr. AT ROOM TEMP.
8-3	SOLDER ABILITY	95% MIN OF THE PIN OUT-DIA BE COVERED BY NEW SOLDER	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 3 ± 0.5 SECONDS.
8-4	VIBRATION	MUST MEET THE REQUIREMENTS 6-1, 6-3 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	1) TOTAL EXCURSION MAX. : 1.5mm 2) VIBRATION FREQUENCY : 10-55 Hz 3) TRAVERSED TIME : 1 MINUTE. 4) TEST AFTER 2 HRs. IN EACH OF 3 MUTUALLY PERPENDICULAR DIRECTION.
8-5	TERMINAL PULL STRENGTH	THE PRODUCT HAS NOT ANY ABNORMALITY AND OPERATE PROPERLY SATISFIED TO INITIAL VALUE.	PULL THE PIN WITH 2.5 Kg.f DURING 30 ± 5 SEC.

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 9/17	STAND BY TRANS	P / N	EBJ42806001
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10. MATERIAL LIST.

NO	PART	MATERIAL	UL FILE NO.	REMARKS
a	CORE	EER-3124N PM-7 or EC-32A DMR-40		ISU CERAMICS CO., LTD. or DONGYANG MAGNTIC CO., LTD.
b	BOBBIN	EER-3124 PHENOL (94V-0) PM-9820 (10PIN)	E41429 (M)	SUMITOMO BAKELITE CO., LTD.
c	WIRE	(MW-75) 1UEW 0.25 Ø, 0.40 Ø, 0.45 Ø, 0.60 Ø	E102761(S) E141925 (S)	DONGYANG ELECTRONICS CO., LTD. or YOUNG WHA SA CO., LTD.
d	INSULATION TAPE	POLYESTER TAPE Cat NO. 204 0.025t x 12mm (YELLOW) 0.025t x 15mm (YELLOW) 0.05t x 15mm (YELLOW)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
e	INSULATION BARRIER	P.N.W H-5673 N1,N2,N3,N4,N5 : TOP 4.0W BOTTOM 4.0W	E92677(S) E165111	TAEHWA INDUSTRIAL CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
f	APPEARANCE FOR CORE	POLYESTER TAPE Cat NO. 204 (20.0W, YL)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
g	COPPER PLATE	COPPER PLATE 0.20t x 6.0W		TAEHWA INDUSTRIAL CO., LTD.
h	TUBE	TEFLON TUBE F-201,202,203	E52460(S)	DAI KIN INDUSTRIES LTD.
i	VARNISH	WP-2952F-2G or SR-337 or EQV.	E72979 E257443	HITACHI CHEMICAL CO., LTD. SEKYE CHEMICAL CO., LTD. or EQV.
j	SOLDER	HSE-09 (Pb FREE)		HEE SUNG METAL CO., LTD.

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H	M,D	K,S	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2
LEE	KIM	KIM											
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 10/17	STAND BY TRANS	P / N	EBJ42806001
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11. UL CARD.

SOO JUNG ELECTRONICS IND CO., LTD.
35-1 HONGJAE 4-DONG
SEO DAE MOON-GU
SEOUL 120-094 REPUBLIC OF KOREA

E157693

Class 130 (B) transformer insulation system, designated SJB-001, maximum 600V
Class 130 (B) transformer insulation system, designated SJB-002, maximum 600V
Class 130 (B) transformer insulation system, designated SJB-003, maximum 600V
Class 130 (B) transformer insulation system, designated SJB-004, maximum 600V

SUMITOMO BAKELITE CO., LTD.
2100 TAKAYANAGI FUJIEDA-SHI SHIZUOKA 426-0041, JAPAN

F41429

						RTI						
		Min	UL94	Elec	Mech	H	H	V	4	C		
		Thk	Flame		With	w/o	W	A	T	9	T	
Mtl Dsg	Col	mm	Class		Imp	Imp	I	I	R	5	I	
Acrylonitrile Butadiene Styrene (ABS), modified, "PERMAFLOW", furnished as pellets.												
Phenolic (PF), designated "SUMIKON", furnished as pellets or granular material.												

PM- 9820	BK	0.30	94V-0	150	150	150	--	--	--	--
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DONG YANG ELECTRONICS IND CO. LTD

E102761 (S)
(B-cont. from A card)

Mtl	Coat	Typ*	ANSI	
Dag	BC	TC	Typ*	TI
UEW	Polyurethane		MW75	130

YOUNG WHA SA CO., LTD.
256-1 DODANG-DONG WONMI-KU BUCHON, KYONGGI-DO
421-130 KOREA

E141925 (S)
(A card)

Mtl	Coat Typ*	ANSI	
Dag	BC	TC	TI
UEW-B	Polyurethane	MW75-C	130

DUCK SUNG TAPE CO LTD
DAESUNG BLDG 677 JAYANG-DONG SONGDONG-KU,
SEOUL 133-190 KOREA

E105147 (S)

Polyester film insulating tape, Cat No. DTS-204 rated 130 C.

Marking : Company name or trademark or "E105147" and catalog designation
Printed on carton, wrapper or core.

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 11/17	STAND BY TRANS	P / N	EBJ42806001
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TAE HWA INDUSTRIAL CO LTD

E92677 (S)

634 DEUNGCHON-DONG KANGSE0-KU, SEOUL
157-030 KOREA

Polyester film tape, Cat. No. H-5673, rated 130 C.

Marking : Company name or E92677 and " Flame Retardant" printed on carton. wrapper and/or core.

JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.

E165111

SOUTHWEST AROUND RD JINGJIANG JIANGSU 214500, CHINA

Nonwoven cloth/polyethylene terephthalate film tape, Cat. No. WF with suffixes, rated 130 C-(a).

__Polyethylene terephthalate film tape, Cat. No. PZ with additional suffixes, rated 130 C-(b).

HITACHI CHEMICAL CO LTD
SHIBAUURA SQUARE BLDG 4-9-25 SHIBAUURA
MINATO-KU YOKYO 108-0023, JAPAN

E72979

Varnish	ANSI	Varnish			
Dag	Magnet	Terminal Class C			
	Wire Type	TP	HC	CE	
_TWP-2952F-2G	MW28, MW75, MW79, MW80	130	130		

DAIKIN INDUSTRIES LTD

E52460 (S)

YODOGAWA PLANT CHEMICAL DIV. POLYMER PRODUCTION DEPT SETTU-SHI,
1-1 NISHI- HIOTSUYA OSAKA 566-8585, JAPAN

Mtl Dsg	Col	Min Thk mm	UL94 Flame Class	Elec	Mech With Imp	w/o Imp	H I	H I	V R	4 5	C I
Polychlorotrifluoro-ethylene (PTFE). F-201,-202,-203	NC	0.81	94V-0	180	180	180	--	4	--	--	--

SF KYF CHEMICAL CO LTD

E257443

360 GILIFON-RI

TONGJIN-FLIP

KIMPO-SI, KYUNGGI-DO 415-862 REPUBLIC OF KOREA

Varnish	ANSI	Varnish			
Dag	Magnet	Terminal Class C			
	Wire Type	TP	HC	CE	
_SR-337(#)	MW75	130	130	-	

- May be followed by 1 or 2 suffix numeric and /or alpha characters to denote viscosity change accomplished via solvents due to production tolerance.

Marking: Company name and varnish designation on shipping container.

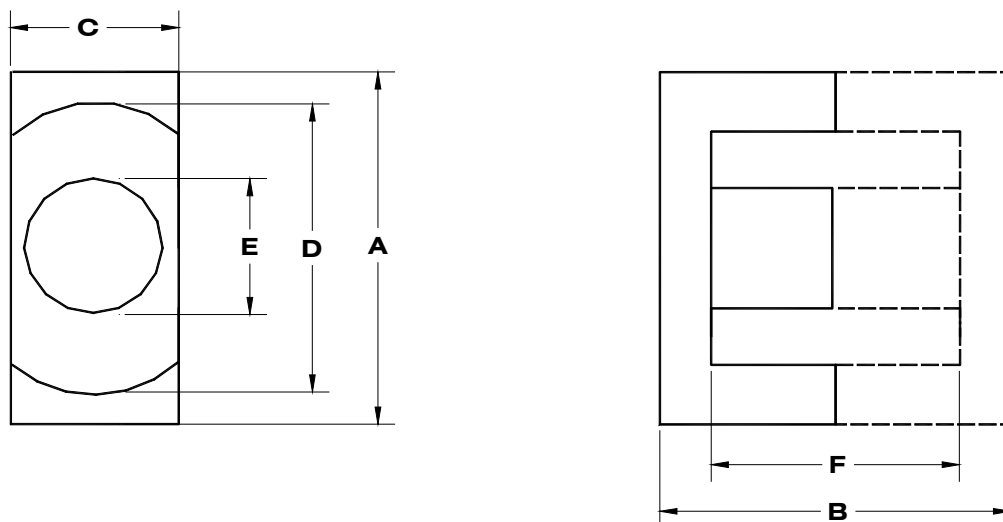
DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 12/17	STAND BY TRANS	P / N	EBJ42806001
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12. CORE DIMENSION



** DIMENSION (UNIT: mm)

TYPE	DIMENSION (m/m)						REMARKS
	A	B	C	D	E	F	
EER-3124N	31.5±0.5	23.8±0.3	20.3±0.3	26.9±0.4	13.3±0.2	18.2±0.3	ISU
EC-32A	31.5±0.5	23.8±0.3	20.3±0.3	26.5 MIN	13.3±0.2	18.2±0.3	DONGYANG MAGNETICS

** EFFECTIVE PARAMETERS

TYPE	EFFECTIVE PARAMETERS			REMARKS
	Le (mm)	Ae (mm²)	Ve (mm³)	
EER-3124N	58.3	127.2	7416	ISU
EC-32A	61.0	133.0	8113	DONGYANG MAGNETICS

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 13/17	STAND BY TRANS	P / N	EBJ42806001
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13. PROCESS FLOW

NO	공 정			기 능	관 리 항 목	관 리 기 준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고
	기 호	공 정 명	사 용 설 비				확인요령	부 서			
01		수입검사 - BASE - CORE - PS TAPE - WIRE	버니어캘 리퍼 마이크로 메터	수 동	치수 핀홀 접착성 외관상태	이상 없을것	SAMPLE	Q · C	구매 사양 서	수 입 검 사 성 적 서	· 치수 불량 · 파손 · 핀홀 · WIRE 피복 벗겨짐 · BASE 단자 위치 바뀜 · 바리 · 접착성 나쁨
02		권 선	권 선 기	반 자 동	절연상태 권선절연상태 권선수	"	전수검사	생산팀	작업 지도 서		· 권선 및 절연수 불량 · 정열권선 안됨 · 절연거리 미 확보 · 권선위치 불량
03		결 선	니 퍼	수 동	특성 결선 마무리	"	육안검사	"	"		· SHORT · 인접단자 접촉 · 미 결선
04		납 땜	납 조	수 동	납땜온도 납땜시간	450℃ ±30℃ 2~4초	수회 / 일	"	"		· SHORT · 냉땜 · BASE 변형
05		CORE조립		수 동	CORE종류 GAP SIZE CENTER EPOXY 조립상태	이상 없을것	전수검사 SAMPLE 육안검사	"	"		· 코아 역삽 · GAP CORE 혼입
06		경 화	건 조 기	반 자 동	경화온도 경화시간	120℃ ±10℃ 1.5 HR	SAMPLE	"	"		· 미 경화
07		1차 검사	TURN METER	반 자 동	INDUCTANCE 권선수	"	전수검사	"	"		· L값 상.하 불량 · 권선수 미달
08		함 침	진공 함침기	반 자 동	경화온도 함침액 상태	120℃ ±10℃ 이상 없을것	SAMPLE	"	"		· 미 경화

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.						
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7
									-	5
										2

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

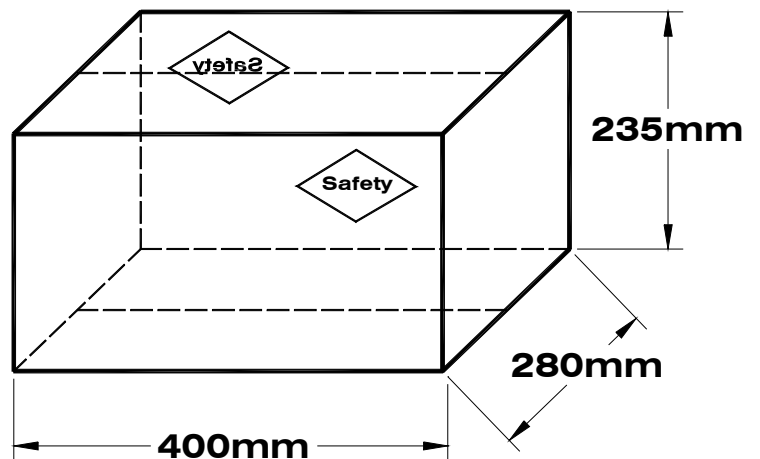
NO. 14/17		STAND BY TRANS			P / N		EBJ42806001										
NO	공 정			기 능	관 리 항 목	관 리 기준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고						
	기 호	공 정 명	사 용 설 비				확인요령	부 서									
09	○	경 화	건 조 기	반 자 동	경화온도 120℃ ±10℃ 경화시간 1 HR		SAMPLE	"	"		· 미 경화						
10	○	핀 형 합	핀형합기	반 자 동	핀간거리	"	전수검사	생산팀	작 업 지 도 서		· 핀 형합 불량 · 베이스 변형 · 단자 이탈						
11	◇	 최종검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	전수검사	"	"		· L값 상.하 불량 · 단자 이물 · 내전압 불량						
12	○	마 킹	불멸 잉크	수 동	마킹방향 마킹외관	"	육안검사	"	"		· 역방향 마킹 · 외관불량						
13	○	포 장		수 동	수량관리 포장상태	"	육안검사	"	"								
14	○	 출하검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	SAMPLE	품질 관리팀	승 인 원								
15	▽	입 고						영업팀	"	INSPEC- TION REPORT							
DESIGN		CHECK		APPROVAL		ITEM NAME		SJ DWG NO.									
D,H LEE		M,D KIM		K,S KIM		STAND BY TRANS		L	G	T	R	-	0	7	-	5	2
DATE		2007 年 10 月 31日			 SOOJUNG ELECTRONICS IND. CO., LTD.												

CUSTOMER : LG ELECTRONICS Inc.

NO. 15/17	STAND BY TRANS	P / N	EBJ42806001
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14 PACKAGE METHOD.

NAME	
ITEM	
LOT NO.	
Q' TY	EA
SOOJUNG ELECTRONICS INC CO., LTD.	



NO	PART	SPECIFICATION
14-1	BOX SIZE	400mm × 280 mm × 235mm
14-2	OUT BOX MATERIAL	SK.3S.B
14-3	BOX WEIGHT	18 Kg (ref)
14-4	PACKAGE QUANTITY	280 EA

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 16/17	STAND BY TRANS	P / N	EBJ42806001
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15. INSPECTION DATA

ITEM NAME	STAND BY TRANS					TEST DATE	2007. 10. 19						
PART NO.	EBJ42806001 (LS-004)					INSTRUMENT	3245 ANALYZER (WK) (at 100KHz)						
시험 항목	PIN NO.	SPEC	1	2	3	4	5	6	7	8	9	10	-
L	3 - 5	395 μ H $\pm$ 7%	403.2	405.4	398.5	399.2	392.6						
	6 - 7	2.90 μ H $\pm$ 30%	2.98	3.06	2.92	2.93	2.90						
	8 - 9	15.8 μ H $\pm$ 30%	15.98	16.02	15.85	15.90	15.55						
	2 - 1	35.0 μ H $\pm$ 30%	36.0	36.3	35.8	36.0	35.5						
LEAKAGE INDUCTANCE	3 - 5 (2차측 SHORT)	20.0 μ H MAX	6.12	6.22	6.23	6.16	6.24						
DCR (m Ω)	3 - 5	0.50 Ω MAX	0.29	0.29	0.29	0.29	0.29						
내 전 압	P-S,COIL	AC3.00KV1분간	OK	OK	OK	OK	OK						
	P- CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
	S -CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
절연저항	P-S,COIL	100M Ω MIN. (AT DC500V)	OK	OK	OK	OK	OK						
DC 전류중첩	3- 5	3.0A/ 90% of INITIAL INDUCTANCE	383.6	385.1	382.5	381.2	378.2						

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	STAND BY TRANS	L	G	T	R	-	0	7	-	5	2

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 17/17	STAND BY TRANS	P / N	EBJ42806001
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16. ASSIGNMENTS

- 1) Apply import inspection specification to the matters which are not given in drawing specification method.
- 2) Packing method follows specification approval.
- 3) If INDUCTANCE : ref is not satisfied with given specification. internal structure disassembly inspection should be necessary.
- 4) Wire bundle method.
 - * CENTER SOLENOID: Error between the center of overall wire bundle area and the center of wire bundle is required to be smaller than 2 mm.
 - * PIN SOLENOID : Error between the bottom barrier tape and winding start point is required to be smaller than 2 mm.
 - * SOLENOID AFTER : Error between the last wire of the wire bundle and start wire of after-solenoid is required to be smaller than 2 mm.
 - * TAB SOLENOID : Bundle should be continued from previous bundle. If bundle method is 2 layer, bundle should be done from top to bottom.
 - * SPACE SOLENOID : The area between wires should be uniform. Error between start and start point of the wire bundle area is required to be smaller than 2mm. Error between end point and end point of the wire bundle area is required to be smaller than 2mm.
 - * SOLENOID : No space is allowed between wires in bundling. The space between wire is required to be smaller than diameter of the wire*2. In same layer no cross is allowed between wires.
- 5) Auxiliary tape can be used in order to enhance. But it needs prior approval from design department.

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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APPROVAL SHEET

CUSTOMER: LG ELECTRONICS Inc.

MODEL : LGP47-08H

I T E M : P,F,C TRANS

PART NO : EAP36781901

S.J SPEC NO : 010-19-028



APPROVED

DATE : 2007. 10. 31.



SOOJUNG ELECTRONICS IND. CO., LTD.

ADDRESS	Office & Factory	35-1, HongJae4-Dong, Seodaemoon-Gu, 120-094, Seoul, KOREA	TEL FAX	02-737-2329 02-737-2525
	Factor China 1	Wendong Shezheng Electronics, Beijiao, Wendeng City, shandong, China	TEL FAX	86-631-857-1392 86-631-857-1393
	Factor China 2	Dongguan Shezheng Electronics, Zhonghanqiao Industrial District, Wangniudun town, Dongguan City, Ganding, China	TEL FAX	86-769-8851-3531 86-769-8851-3530

CUSTOMER : LG ELECTRONICS Inc.

NO. 1/16	P F C TRANS	P / N	EBJ36781901
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1. RECORD OF REVISION

REV NO.	REASON	CONTENTS	DATA OF APPROVAL	CHECKED	REMARKS

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 2/16	P F C TRANS	P / N	EBJ36781901
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2. INDEX

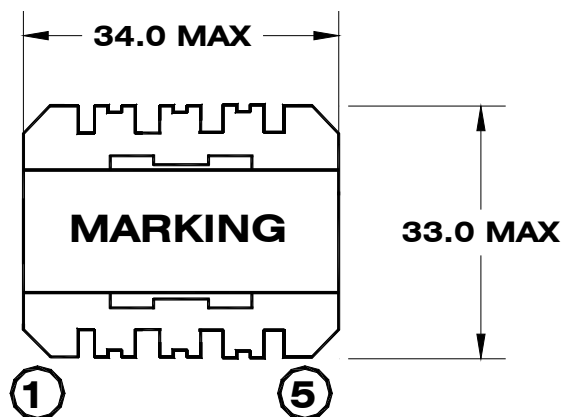
FILE NO	1/16	1. RECORD OF REVISION
	2/16	2. INDEX
	3/16	3. DIMENSION
	4/16	4. SCHEMATIC
	4/16	5 WINDING SPECIFICATION
	5/16	6. ELECTRICAL CHARACTERISTICS
	6/16	7. ENVIRONMENTAL CHARACTERISTICS
	7/16	8. MECHANICAL CHARACTERISTICS
	8/16	9. INTERNAL CONSTRUCTION
	9/16	10. MATERIAL LIST
	10/16	11. UL CARD
	11/16	12. CORE DIMENSION
	12/16	13. PROCESS FLOW
	13/16	PROCESS FLOW
	14/16	14. PACKING METHOD
	15/16	15. INSPECTION DATA
	16/16	16. ASSIGNMENT

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 3/16	P F C TRANS	P / N	EBJ36781901
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3. DIMENSION (UNIT:mm)

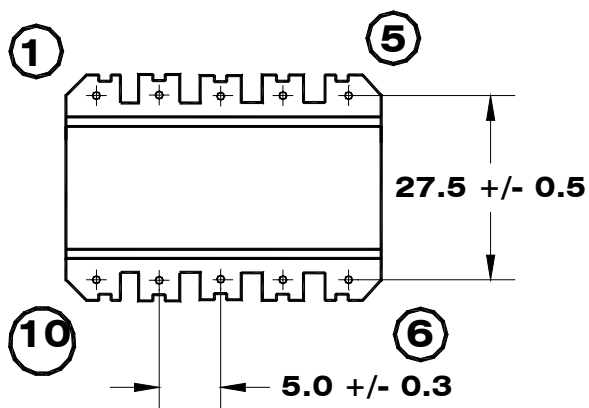
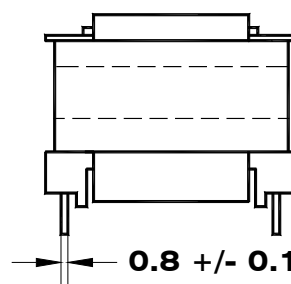
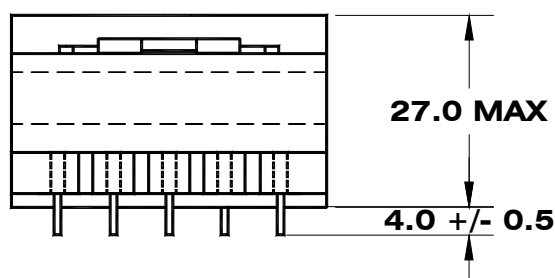


* MARKING *

LP-001 --- PART NO

SJ XXXX --- LOT NO

EAP36781901 --- LG PART NO



※ OMIT PIN NO : #4

※ CUTTING PIN NO : X

※ GAP CORE : TWIN

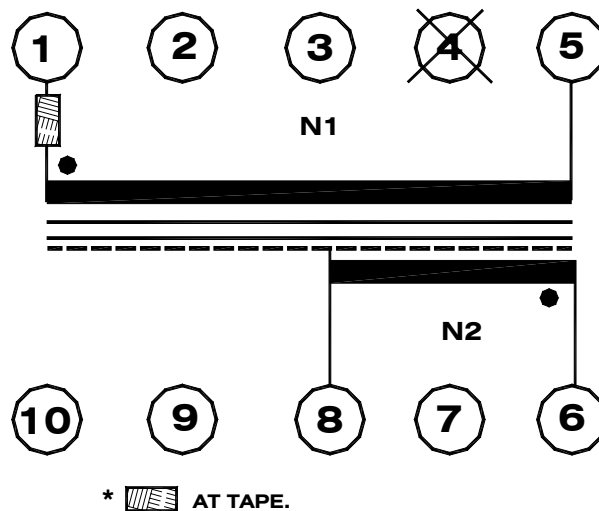
DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 4/16	P F C TRANS	P / N	EBJ36781901
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4. SCHEMATIC



5. WINDING SPECIFICATION.

No.	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION TAPE	
	S	F				TURNS	MATERIAL
N1	①	5	USTC 0.10 ϕ x60	50 Ts	SOLENOID	3 Ts	POLYESTER TAPE t:0.05mm. W:15.0mm
N2	6	8	1UEW 0.30 ϕ	10 Ts	PIN SOLENOID	3 Ts	POLYESTER TAPE t:0.05mm. W:15.0mm
* CORE ROUND TAPE						3 Ts	POLYESTER TAPE t:0.025mm. W:20.0mm
* INSULATION TAPE						2 Ts	POLYESTER TAPE t:0.025mm. W:15.0mm
FLUX BAND	—	8	COPPER TAPE 0.05t x 7W	1.1 Ts	CENTER	2 Ts	POLYESTER TAPE t:0.025mm. W:15.0mm

※ ○ MARK : AT TAPE

DESIGN		CHECK	APPROVAL	ITEM NAME		SJ DWG NO.									
D,H LEE		M,D KIM	K,S KIM	P F C TRANS		0	1	0	-	1	9	-	0	2	8
DATE		2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.											

CUSTOMER : LG ELECTRONICS Inc.

NO. 5/16	P F C TRANS	P / N	EBJ36781901
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6. ELECTRICAL CHARACTERISTICS.

No.	ITEM	TERMINAL	SPECIFICATION	REMARKS
6-1	INDUCTANCE	1 — 5	220 μ H $\pm$ 7%	LCR METER HP-4284A (AT 1 KHz)
		6 — 8	11.5 μ H (REF)	
6-2	D. C. RESISTANCE	1 — 5	0.20 Ohm MAX	WHEATSTONE BRIDGE (YEW-2755)
6-3	WITHSTANDING VOLTAGE	P COIL — S COIL	AC 1.50KV (rms) 1MINUTE.	TOS-8850 (CUT OFF CURRENT 5mA)
		P COIL — CORE S COIL — CORE	AC 1.50KV (rms) 1MINUTE.	
6-4	INSULATION RESISTANCE	COIL — CORE	100(M) Ohm MIN. (AT DC 500V)	TOS-8850
6-5	DC SUPERIMPOSE	1 — 5	90% MIN. WITH RESPECT TO ORIGINAL INDUCTANCE VALUE WHEN 10.0A DC IS SUPERIMPOSED.	

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 6/16	P F C TRANS	P / N	EBJ36781901
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7. ENVIRONMENTAL.

* STANDARD TEST CONDITION : TEMP. 20℃±15℃, HUMIDITY 65%±20%.

IF WHEN ANY OBJECTION IS SUGGESTED, THE TEST CAN BE OPERATED AT 20±2℃, 65±5%RH.

NO	ARTICLE	SPECIFICATION	TEST CONDITION														
7-1	USED TEMPERATURE RANGE	-25℃ - +105℃															
7-2	KEEPING TEMPERATURE	-25℃ - +105℃															
7-3	LOW TEMPERATURE RESISTANT	MUST MEET THE REQUIREMENTS 6-1, 6-2 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE.	-25±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-4	HIGH TEMPERATURE RESISTANT		+105±2℃, 96Hr. MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-5	HUMIDITY RESISTANT		95%RH ±5% (40℃ ±5℃) 96Hr MEASURE AFTER 2Hr. AT ROOM TEMP.														
7-6	TEMPERATURE CYCLE		<table><tr><th>STEP</th><th>TEMP.</th><th>TIME</th></tr><tr><td>1</td><td>-25±2℃</td><td>30 MIN.</td></tr><tr><td>2</td><td>+20±2℃</td><td>10 MIN.</td></tr><tr><td>3</td><td>+105±2℃</td><td>30 MIN.</td></tr><tr><td>4</td><td>+20±2℃</td><td>10 MIN.</td></tr></table> REPEAT 5 TIME FROM STEP 1AND TEST AFTER 2 Hr. AT ROOM TEMP.	STEP	TEMP.	TIME	1	-25±2℃	30 MIN.	2	+20±2℃	10 MIN.	3	+105±2℃	30 MIN.	4	+20±2℃
STEP	TEMP.	TIME															
1	-25±2℃	30 MIN.															
2	+20±2℃	10 MIN.															
3	+105±2℃	30 MIN.															
4	+20±2℃	10 MIN.															
7-7	환경성 시험 (유해물질)	XRF 장비로 시험시료를 120초간 SCAN하여 Cd 측정결과 함유량이 50 ppm 미만이며, Std Dev (표준편차) 값이 17미만, Pb 200ppm, Hg 200 ppm, pbb 100 ppm, pbde 100 ppm, 미만일 것. ICP로 측정은 Cd 10 ppm, Pb 100 ppm, Hg 100 ppm, Cr6 100 ppm, Pbb 100 ppM, Pbde 100 ppm 미만일것.															

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 7/16	P F C TRANS	P / N	EBJ36781901
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8. MECHANICAL CHARACTERISTICS.

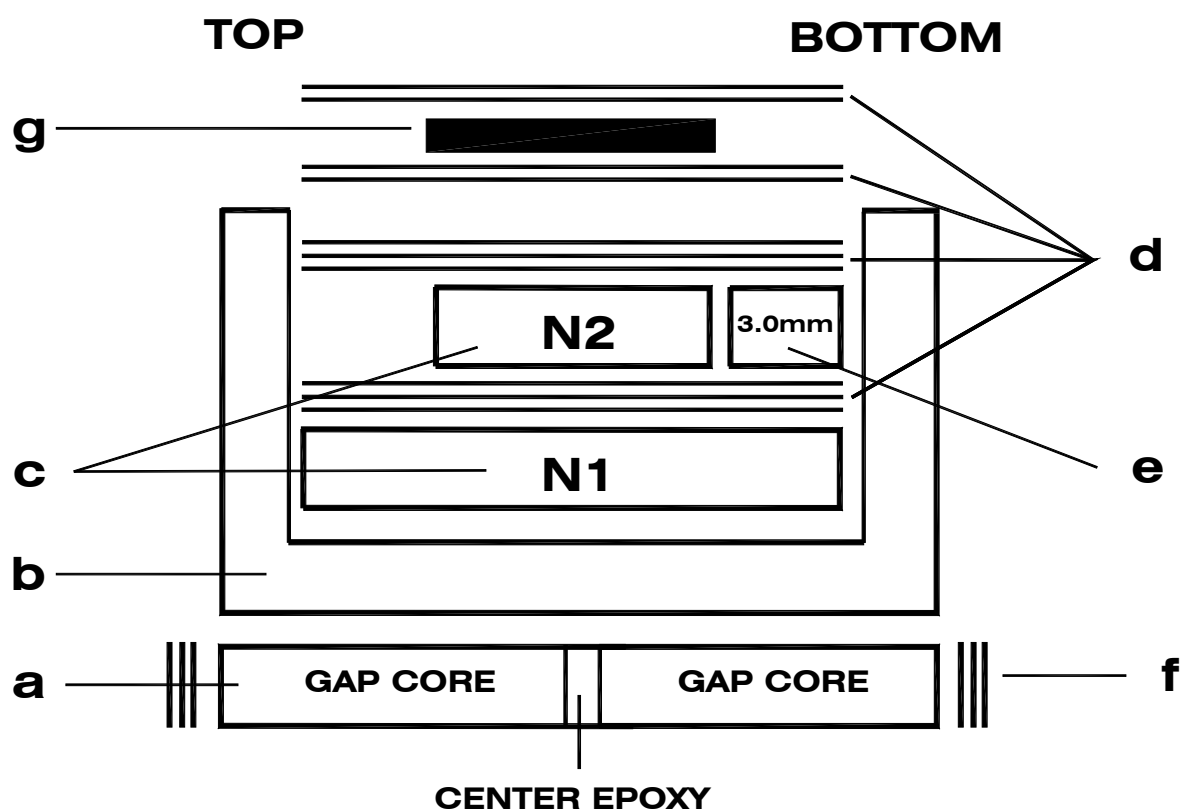
NO.	ARTICLE	SPECIFICATION	TEST CONDITION
8-1	LAYER SHORT TEST	THERE IS NO DEFECT ON THE WIRE INSULATION COMPARE WITH STANDARD SAMPLE	SUPPLY SURGE VOLTAGE (AC 1.5KV) BETWEEN WIRE AND MEASURE THE WIRE INSULATION.
8-2	SOLDER HEAT TEST	MUST MEET THE REQUIREMENTS 6-1, 6-2 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 10 ± 0.5 SECONDS. MEASURE AFTER 2 Hr. AT ROOM TEMP.
8-3	SOLDER ABILITY	95% OF THE PIN OUT-DIA BE COVERED BY NEW SOLDER	DIP THE TERMINAL IN SOLDER AT $260 \pm 2^{\circ}\text{C}$ FOR 3 ± 0.5 SECONDS.
8-4	VIBRATION	MUST MEET THE REQUIREMENTS 6-1, 6-2 AND HAS NOT ANY DAMAGE ON THE APPEARANCE AND THE INDUCTANCE VARIATION CAN NOT OVER 5% OF THE INITIAL VALUE	1) TOTAL EXCURSION MAX. : 1.5mm 2) VIBRATION FREQUENCY : 10-55 Hz 3) TRAVERSED TIME : 1 MINUTE. 4) TEST AFTER 2 HRs. IN EACH OF 3 MUTUALLY PERPENDICULAR DIRECTION.
8-5	TERMINAL PULL STRENGTH	THE PRODUCT HAS NOT ANY ABNORMALITY AND OPERATE PROPERLY SATISFIED TO INITIAL VALUE	PULL THE PIN WITH 2.5 Kg.f DURING 30 ± 5 SEC.

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 8/16	P F C TRANS	P / N	EBJ36781901
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9. INTERNAL CONSTRUCTION

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 9/16	P F C TRANS	P / N	EBJ36781901
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10. MATERIAL LIST.

NO	PART	MATERIAL	UL FILE NO.	REMARKS
a	CORE	EER-3124N PM-7		ISU CERAMICS CO., LTD.
b	BOBBIN	EER-3124 PHENOL (94V-0) PF-2736 (10PIN)	E61040 (M)	BAKELITE AG
c	WIRE	1UEW 0.30 ϕ USTC 0.10 ϕ x 60	E102761(S) E141925 (S)	DONGYANG ELECTRONICS CO., LTD. or YOUNG WHA SA CO., LTD.
d	INSULATION TAPE	POLYESTER TAPE Cat NO. 204 (15.0W YL)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
e	INSULATION BARRIER	P.N.W (BUSIKPO) H-5673 BOTTOM (N2) :3.0mm	E92677(S) E165111	TAEHWA INDUSTRIAL CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
f	APPEARANCE FOR CORE	POLYESTER TAPE Cat NO. 204 (20.0W, YL)	E105147(S) E165111	DUCK SUNG TAPE CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
g	FLUX BAND	COPPER TAPE 0.05t x 7W		TAE HWA INDUSTRIAL CO. LTD.
h	ADHESIVE RESIN	EPOXY SK-011 or eqv.		SE KYE CHEMICAL CO., LTD. or eqv.
i	VARNISH	POLYESTER DVB-2180T or EVD-2040		DAEHAN PAINT & INK CO., LTD. E-WEON CHEM TECH CO., LTD.
j	SOLDER	HSE-09 (Pb FREE)		HEE SUNG METAL CO., LTD.

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 10/16	P F C TRANS	P / N	EBJ36781901
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11. UL CARD.

BAKELITE AG

POSTFACH 7154 58609, ISERLOHN-LETMATHE, GERMANY

E61040 (M)

Mtl	Des	Col	Min Thk mm	UL94 Flame Class	Elec	Mech With lmo	RTI					4 9 5	C T I
							w/o lmo	H W I	H A I	V T R			
Phenolic molding compound (PF), designated "Rutaform" or "Bakelite", furnished in the form of pellets or powder													
PF	2736(a)(b)	BK	0.46	94V-0	150	150	150	--	--	----	--	--	--

DONG YANG ELECTRONICS IND CO. LTD

E102761 (S)

(B-cont. from A card)

Mtl	Coat Typ*	ANSI	TI
Dac	BC	Tvd*	
UEW	Polyurethane	MW75	130

YOUNG WHA SA CO., LTD.

256-1 DODANG-DONG WONMI-KU BUCHON, KYONGGI-DO
421-130 KOREA

E141925 (S)

(A card)

MI	Coat Tvp*	ANSI	
Daa	BC	Tvp*	TI
UEW-B	Polyurethane	MW75-C	130

DUCK SUNG TAPE CO LTD

DAESUNG BLDG 677 JAYANG-DONG SONGDONG-KU,
SEOUL 133-190 KOREA

E 105147 (S)

Polyester film insulating tape, Cat No. DTS-204 rated 130 C.

Marking : Company name or trademark or "E105147" and catalog designation
Printed on carton, wrapper or core.

TAE HWA INDUSTRIAL CO LTD

634 DEUNGCHON-DONG KANGSE0-KU, SEOUL
157-030 KOREA

E92677 (S)

Polvester film tape. Cat. No. H-5673. rated 130 C.

Marking : Company name or E92677 and " Flame Retardant" printed on carton, wrapper and/or core.

JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.

E165111

SOUTHWEST AROUND RD JINGJIANG JIANGSU 214500, CHINA

Nonwoven cloth/polyethylene terephthalate film tape, Cat. No. WF with suffixes, rated 130 C*(a).

Polyethylene terephthalate film tape, Cat. No. PZ with additional suffixes, rated 130 C*(b).

*Complies with flame retardant requirements when so marked.

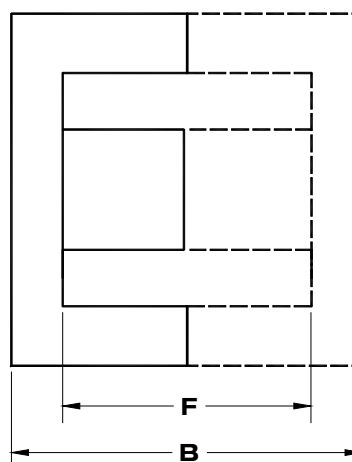
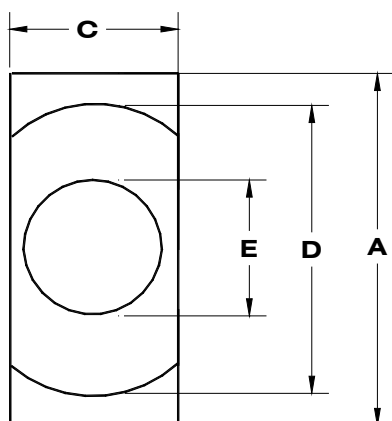
[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 11/16	P F C TRANS	P / N	EBJ36781901
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12. CORE DIMENSION



** DIMENSION (UNIT: mm)

TYPE	DIMENSION (m/m)						REMARKS
	A	B	C	D	E	F	
EER-3124N	31.5±0.5	23.8±0.3	20.3±0.3	26.9±0.4	13.3±0.2	18.2±0.3	ISU

** EFFECTIVE PARAMETERS

TYPE	EFFECTIVE PARAMETERS			REMARKS
	Le (mm)	Ae (mm²)	Ve (mm³)	
EER-3124N	58.3	127.2	7416	ISU

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 12/16	P F C TRANS	P / N	EBJ36781901
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13. PROCESS FLOW

NO	공 정			기 능	관 리 항 목	관 리 기 준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고
	기 호	공 정 명	사 용 설 비				확인요령	부 서			
01		수입검사 - BASE - CORE - PS TAPE - WIRE	버니어캘 리퍼 마이크로 메터	수 등	치수 핀홀 접착성 외관상태	이상 없을것	SAMPLE	Q · C	구매 사양 서	수 입 검 사 성 적 서	· 치수 불량 · 파손 · 핀홀 · WIRE 피복 벗겨짐 · BASE 단자 위치 바뀜 · 바리 · 접착성 나쁨
02		권 선	권 선 기	반 자 동	절연상태 권선절연상태 권선수	"	전수검사	생산팀	작업 지도 서		· 권선 및 절연수 불량 · 정열권선 안됨 · 절연거리 미 확보 · 권선위치 불량
03		결 선	니 퍼	수 등	특성 결선 마무리	"	육안검사	"	"		· SHORT · 인접단자 접촉 · 미 결선
04		납 땜	납 조	수 등	납땜온도 납땜시간	450℃ ±30℃ 2~4초	수회 / 일	"	"		· SHORT · 냉땜 · BASE 변형
05		CORE조립		수 등	CORE종류 GAP SIZE 조립상태	이상 없을것	전수검사 SAMPLE 육안검사	"	"		· 코아 역삽 · GAP CORE 혼입
06		1차 검사	TURN METER	반 자 동	INDUCTANCE 권선수	"	전수검사	"	"		· L값 상.하 불량 · 권선수 미달
07		동판작업	권총인두	수 등	인두온도 동판위치	이상 없을것	육안검사	"	"		· 안전거리 미 확보 · 동판 밀착 안됨
08		함 침	진공 함침기	반 자 동	경화온도 함침액 상태	120℃ ±10℃ 이상 없을것	SAMPLE	"	"		· 미 경화

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.							
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0 2 8

DATE	2007 年 10 月 31日		SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 13/16	P F C TRANS	P / N	EBJ36781901
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NO	공 정			기 능	관 리 항 목	관 리 기준	검 사 방 법		표 준	기록/ 양식	공정별 관련불량 및 비고
	기 호	공 정 명	사 용 설 비				확인요령	부 서			
09	○	경 화	건 조 기	반 자 동	경화온도 경화시간	120℃ ±10℃ 1 HR	SAMPLE	"	"		· 미 경화
10	○	핀 형 합	핀형합기	반 자 동	핀간거리	"	전수검사	생산팀	작 업 지 도 서		· 핀 형합 불량 · 베이스 변형 · 단자 이탈
11	◇	 최종검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	전수검사	"	"		· L값 상.하 불량 · 단자 이물 · 내전압 불량
12	○	마 킹	불멸 잉크	수 동	마킹방향 마킹외관	"	육안검사	"	"		· 역방향 마킹 · 외관불량
13	○	포 장		수 동	수량관리 포장상태	"	육안검사	"	"		
14	○	 출하검사	LCR METER 내전압 TESTER	수 동	INDUCTANCE 내전압 절연사항	"	SAMPLE	품질 관리팀	승 인 원		
15	▽	입 고						영업팀	"	INSP- TION REPORT	

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.							
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0 2 8

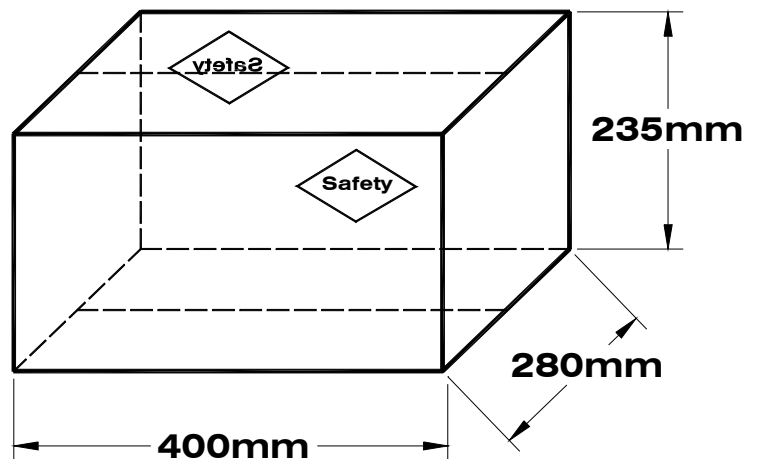
DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 14/16	P F C TRANS	P / N	EBJ36781901
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14 PACKAGE METHOD.

NAME	
ITEM	
LOT NO.	
Q' TY	EA
SOOJUNG ELECTRONICS INC CO., LTD.	



NO	PART	SPECIFICATION
14-1	BOX SIZE	400mm × 280 mm × 235mm
14-2	OUT BOX MATERIAL	SK.3S.B
14-3	BOX WEIGHT	17 Kg (ref)
14-4	PACKAGE QUANTITY	280 EA

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

CUSTOMER : LG ELECTRONICS Inc.

NO. 15/16	P F C TRANS	P / N	EBJ36781901
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15. INSPECTION DATA

ITEM NAME	P F C TRANS	TEST DATE	2007. 10. 08.
PART NO.	EAP36781901 (LP-001)	INSTRUMENT	3245 ANALYZER (WK) (at 1KHz)

시험 항목	PIN NO.	SPEC	1	2	3	4	5	6	7	8	9	10	—
L	1 — 5	220μH±7%	220.26	220.91	219.42	220.98	223.78						
	6 — 8	11.5 μH (Ref)	11.61	11.66	11.76	11.66	11.88						
DCR (mΩ)	1 — 5	0.20 Ω MAX	0.103	0.105	0.104	0.105	0.105						
내 전 압	P-S,COIL	AC1.50KV1분간	OK	OK	OK	OK	OK						
	P- CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
	S -CORE	AC1.50KV1분간	OK	OK	OK	OK	OK						
절연저항	P-S,COIL	100MΩ MIN. (AT DC500V)	OK	OK	OK	OK	OK						
DC 전류중첩	1 — 5	10.0A/ 90% of INITIAL INDUCTANCE	209.2	209.4	209.1	209.5	210.7						209.58

[illegible]

DATE	2007 年 10 月 31日	 SOOJUNG ELECTRONICS IND. CO., LTD.
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CUSTOMER : LG ELECTRONICS Inc.

NO. 16/16	P F C TRANS	P / N	EBJ36781901
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16. ASSIGNMENTS

- 1) Apply import inspection specification to the matters which are not given in drawing specification method.
- 2) Packing method follows specification approval.
- 3) If INDUCTANCE : ref is not satisfied with given specification. internal structure disassembly inspection should be necessary.
- 4) Wire bundle method.
 - * CENTER SOLENOID: Error between the center of overall wire bundle area and the center of wire bundle is required to be smaller than 2 mm.
 - * PIN SOLENOID : Error between the bottom barrier tape and winding start point is required to be smaller than 2 mm.
 - * SOLENOID AFTER : Error between the last wire of the wire bundle and start wire of after-solenoid is required to be smaller than 2 mm.
 - * TAB SOLENOID : Bundle should be continued from previous bundle. If bundle method is 2 layer, bundle should be done from top to bottom.
 - * SPACE SOLENOID : The area between wires should be uniform. Error between start and start point of the wire bundle area is required to be smaller than 2mm. Error between end point and end point of the wire bundle area is required to be smaller than 2mm.
 - * SOLENOID : No space is allowed between wires in bundling. The space between wire is required to be smaller than diameter of the wire*2. In same layer no cross is allowed between wires.
- 5) Auxiliary tape can be used in order to enhance. But it needs prior approval from design department.

DESIGN	CHECK	APPROVAL	ITEM NAME	SJ DWG NO.									
D,H LEE	M,D KIM	K,S KIM	P F C TRANS	0	1	0	-	1	9	-	0	2	8
DATE	2007 年 10 月 31日		 SOOJUNG ELECTRONICS IND. CO., LTD.										

SPECIFICATIONS

TO MESSRS : LG electronics

CUSTOMERS MODEL :

CUSTOMERS PART NO :

ITEM : LINE FILTER

TNC SPEC NO. : CV620180SH

APPROVED	REFERENCE

DATE : 2007. 10. 24

TNC (株)TNC

#125 , WOLMUN-RI, PALTAN-MYEON, HWASEONG - SI
KYUNGGI-DO, KOREA 445-914
TEL : 82-31-354-3160
FAX : 82-31-354-3156

NOTICE : After received this approval sheet and finished it's approval, please return back one copy. In case of you don't any reply until initial order date, this approval sheet is to be standard approval and initial order date is to be approved date for concerning item.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

CONTENTS

1. REVISION RECORD
2. ELECTRICAL CHARACTERISTIC
3. OPERATING TEMPERATURE RANGE
4. CIRCUIT DIAGRAM
5. WINDING SPECIFICATION
6. SHAPE AND DIMENSION
7. MATERIAL LIST
8. MARKING
9. PACKING
10. GUARANTEED MINIMUM IMPEDANCE
11. L/Z CHARACTERISTIC CURVE
12. RELIABILITY TEST
13. ENDURANCE TEST
14. FERRITE CORE SPECIFICATION
15. UL . FILE

ATTACHED DATA

<i>TNC</i> TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				1/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

1. REVISION RECORD

No	Reason	Contents	Date OF Approval	Before Alteration	After Alteration	Page

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	K.S.W 05.03.03 R&D	C.B.O 05.03.03 R&D	Y.T.H 05.03.03 R&D	2/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

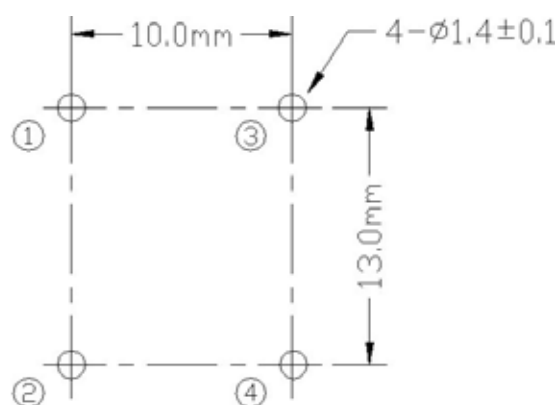
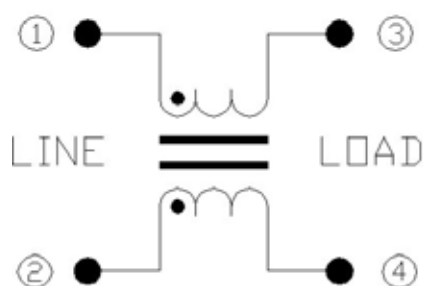
2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 250V			
2	RATED CURRENT	START - FINISH	2.0A			
3	INDUCTANCE	START - FINISH	16KHz	17.5mH	+50%, -30%	HP-4194A 1V (20°C±5°C)
4	TEMPERATURE RISE	AT RATED CURRENT	55°C MAX			
5	DC RESISTANCE	START - FINISH	166 mΩ MAX			HIOKI 3540 (20°C±5°C)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)
7	INSULATION RESISTANCE	LINE TO COVER	DC 500V, 300MΩ MIN.			TOS-8850

3. OPERATING TEMPERATURE RANGE

-25°C TO +120°C INCLUDING TEMPERATURE RISE.

4. CIRCUIT DIAGRAM



Recommended PCB piercing plan

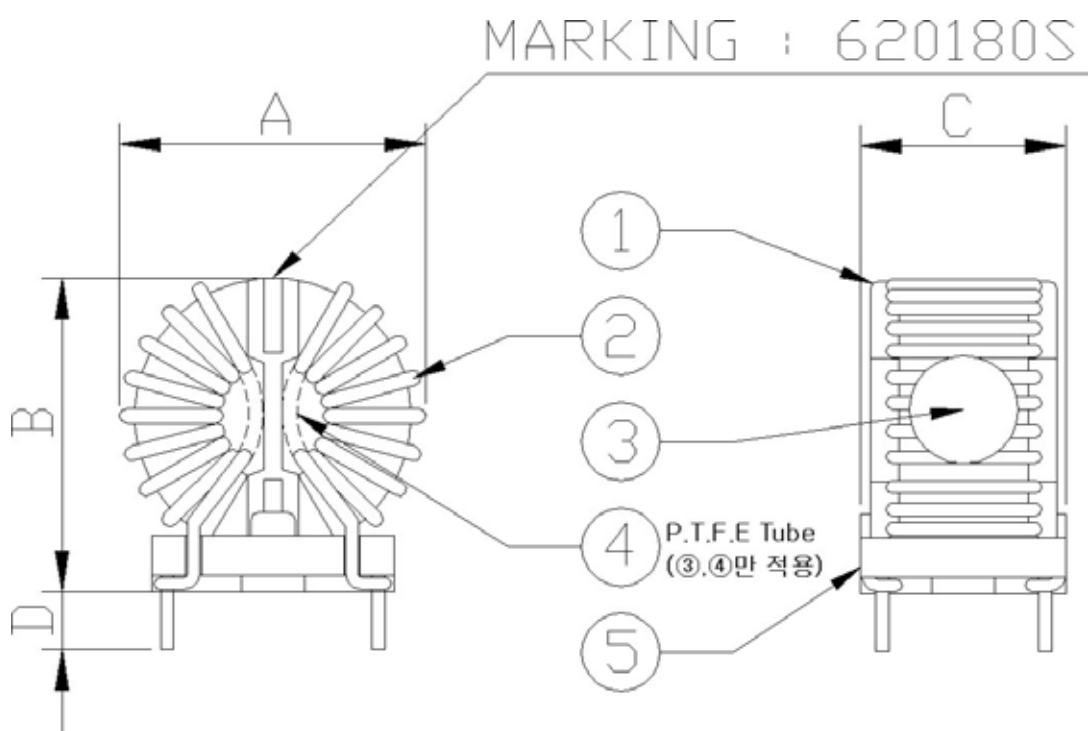
TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	K.S.W 05.03.03 R&D	C.B.O 05.03.03 R&D	Y.T.H 05.03.03 R&D	3/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

5. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.50Φ	53 ±2Ts	HANDMADE	BETWEEN L1 AND L2 (0.7mH MAX)
L2	2	4				

6. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	21mm MAX	23mm MAX	15mm MAX	4.0±1.0mm

TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	K.S.W 05.03.03 R&D	C.B.O 05.03.03 R&D	Y.T.H 05.03.03 R&D	4/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

7. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	REMARK
1	Core Cover	PBT GP-2156-F UL 94 V-0 Class		LG Chemical Ltd	UL:E67171(M)
2	Enamel Wire	UEW 0.5Φ / 53 ±2Ts	UEW	Dongyang Electronics Ind Co.,Ltd	UL:E102761
			UEW(B)	LS Cable	UL:E84441
			UEW	Taihan Electric Wire Co.,Ltd	UL:E109312
			NUW	Hwa Il Electronics Co.,Ltd	UL:E140246
3	Ferrite Core	MA100 R-16-10-7 HM5A T 1607		JFE Ferrite Corp ISU Ceramics Co.,Ltd	
4	Insulation tube	P.T.F.E Tube (Teflon Tube) TF 2021 PTFE		Dyneon Gmbh & Co Kg	UL:E188957
5	Coil Base	Bakelite Ag (PF2736), UL 94 V-0 Class		Hexion Specialty Chemical Gmbh	UL:E61040(M)
		PBT GP-2306-F UL 94 V-0 Class		LG Chemical Ltd	UL:E67171(M)

8. MARKING

MODEL	LABEL
CV620180SH	620180S

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				5/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

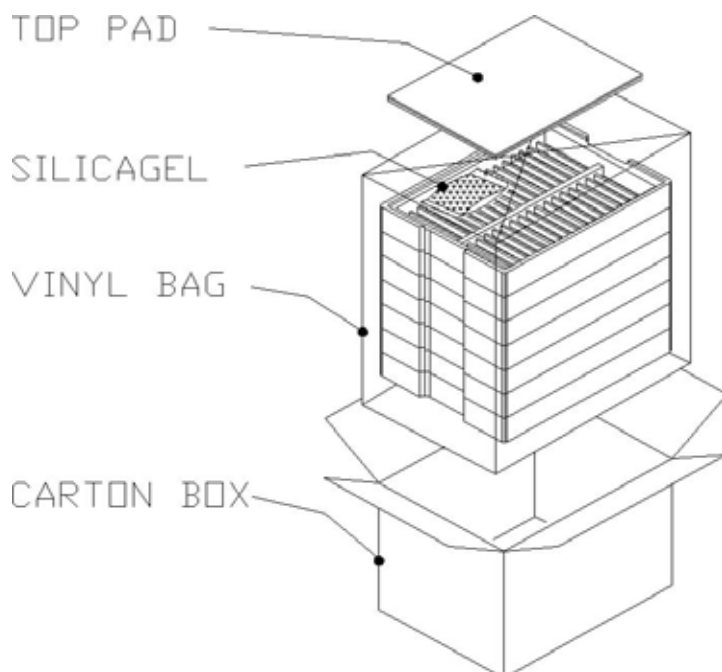
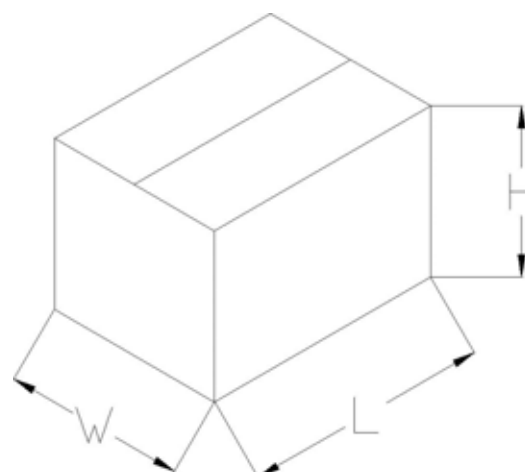
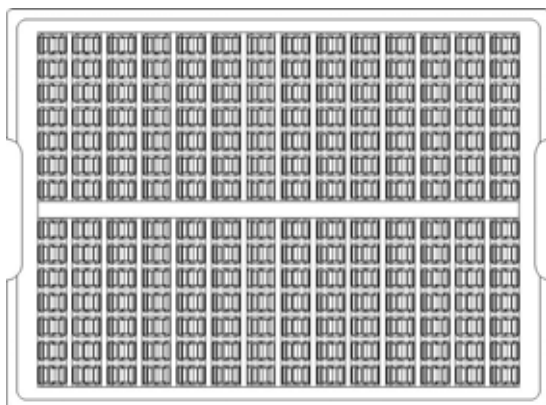
9. PACKING

* Quantity & Weight

Packing Case	Q'ty/1 Box	Gross Weight(kg)	Size (W×L×H mm)
Carton Box	1,300pcs	14.5Kg	270 ×360 ×255

* Packing Case

Packing Case	Q'ty	Material	Size (W×L×H mm)
Carton Box	1pcs	DW A TYPE	270 ×360 ×255
Styrofoam Pad	7pcs	Styrofoam	255 ×344 ×38
Top Pad	1pcs	SW	220 ×300 ×3.3



Styrofoam Pad
 $(196EA \times 6) + (124EA \times 1)$
 = 1,300 PCS

TNC TNC CO.,LTD

DESIGN	CHECK	APPROVAL	PAGE
K.S.W 05.03.03 R&D	C.B.O 05.03.03 R&D	Y.T.H 05.03.03 R&D	6/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV620180SH	0

10. GUARANTEED MINIMUM IMPEDANCE

FREQUENCY (MHz)	0.15	0.45	1	5	10	30
IMPEDANCE (kΩ)	10	30	10	1	0.1	0.1

11. L/Z CHARACTERISTIC CURVE

A: |Z|
B: L_s

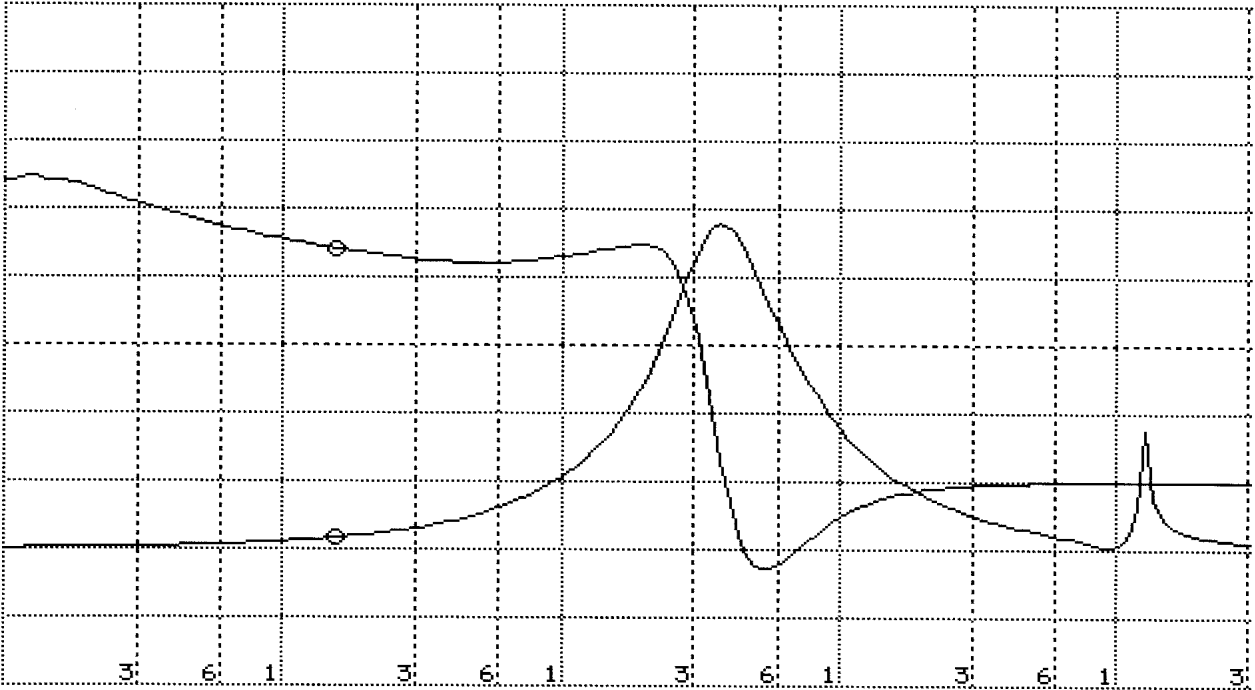
○ MKR
15 723.007 Hz

A MAX 80.00 KΩ

MAG 1.69595 KΩ

B MAX 35.00 mH

L_s 17.1091 mH



A/DIV 10.00 KΩ

START 1 000.000 Hz

B/DIV 5.000 mH

STOP 40 000 000.000 Hz

SPECIFICATIONS	ITEM	LINE FILTER	Rev
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12. RELIABILITY TEST

ITEM	TEST CONDITION	SPEC
HUMIDITY RESISTANCE	40°C 95%, 96Hr. Measure after leave more than 60Min, normal temperature	L : Initial value $\pm$ 10%
HEAT RESISTANCE	85°C $\pm$ 2°C, 96Hr. Measure after leave more than 60Min, normal temperature	L : Initial value $\pm$ 10%
COLD RESISTANCE	-25°C, 96Hr. Measure after leave more than 60Min, normal temperature	L : Initial value $\pm$ 10%
TEMPERATURE CYCLE	-45°C 30min $\rightarrow$ 100°C 30min, 100 CYCLE Measure after leave more than 60Min, normal temperature	L : Initial value $\pm$ 10%

13. ENDURANCE TEST

ITEM	TEST CONDITION	SPEC
SOLDERING ADHESION	SOLDER POT °C : 280 $\pm$ 5°C SOLDERING HR : 2 $\pm$ 0.5 SEC	More than 90%
SOLDERING HEAT RESISTANCE	SOLDERING °C : 260 $\pm$ 5°C SOLDERING HR : 10 $\pm$ 1.0 SEC	More than 90%

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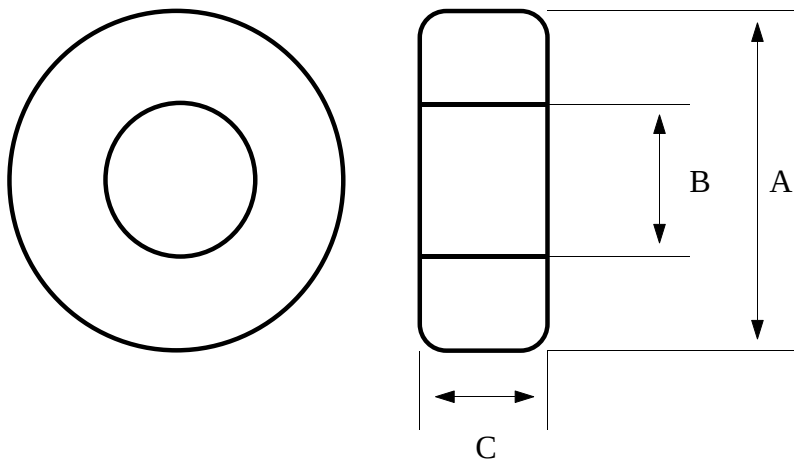
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14. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	MA100 R-16/10/7	HM5A T 1607
μ_i	-	10,000 $\pm$ 30%	10,000 $\pm$ 30%
B _{ms}	mT	415	410
H _{cms}	A/m	3.0	3.0
B _{rms}	mT	76	80
T _c	°C	>115	>115
TAN δ / μ iac	*10 ⁻⁶	<1.9	<6.0
$\alpha_{\mu r}$	*10 ⁻⁶ /°C	-0.5~2.0	-0.15~1.0
ρ	Ω .m	0.1	0.13
d	g/cm ³	5.0	4.9

- Dimension



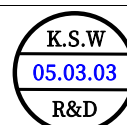
A: 16.0 $\pm$ 0.35

B: 10.0 $\pm$ 0.3

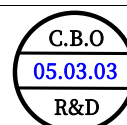
C: 7.0 $\pm$ 0.3

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September 14, 2000

Plastics - Component

LG CHEMICAL LTD

E67171

Material Dsg	Color	Min. Thk mm	Flame Class	H	H	Elec	R T I		H	D	C
				W	A		Mech	V	4		
				I	I			T	9	T	
GP-2(b)8F	ALL	1.5	V-0	3	1	130	130	140	—	—	—
		3.0	V-0	3	0	130	130	140	3	6	3
		0.74	V-0	4	0	75	75	75	—	—	—
		1.5	V-0	3	0	75	75	75	—	—	—
		3.0	V-0	2	0	75	75	75	4	6	4
GP-2150	ALL	0.71	—	—	—	140	130	140	—	—	—
		1.5	HB	2	0	140	130	140	—	—	—
		3.3	HB	1	0	140	130	140	0	6	1
GP-2151-F	ALL	0.71	V-0	—	—	140	130	140	—	—	—
		1.5	V-0	3	0	140	130	140	—	—	—
		3.3	V-0	2	0	140	130	140	3	7	2
		0.71	V-0	—	—	130	130	130	—	—	—
GP-2156-F	ALL	1.5	V-0	3	0	130	130	130	—	—	—
		3.3	V-0	2	0	130	130	130	3	7	3

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DONG YANG ELECTRONICS INC. LTD
 5-20 BANGYE-RI
 MUNMAK-EUB
 WONJU-SHI
 KANGWON-DO 220-800, KOREA

E102761

Mtl Dsg	Coat Typ		ANSI Type	TI
	BC	OC		
AI-EIW	Polyester-	Polyamide-	MW35	200
	imide	imide		
DSB-EIA	Ester-imide	Polyamide	MW76	180
DSB-EIA(S)	Solderable	Polyamide	MW78	180
	ester-imide			
EIW	Polyester-		MW30	180
	imide			
NY-EIW	Polyester-	Polyamide	MW76	180
	amide-imide			
NY-PEW	Polyester	Polyamide	MW24	155
NY-PEW(F)	Polyester	Polyamide	MW24	155
NY-UEW	Polyurethane	Polyamide	MW80,	155,
			MW28	130
UEW	Polyurethane	—	MW79,	155,
			MW75	130

Marking: Company name or "E102761" and material designation or marked designation on package or reel.

Last Updated on 2004-04-06

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LS CABLE LTD

ASEM TOWER, 19TH FL
159 SAMSUNG-DONG
GANGNAM-GU
SEOUL, 135-798 REPUBLIC OF KOREA

E84441

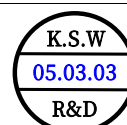
Mtl Dsg	Coat Typ		ANSI Type *	TI
	BC	TC		
Magnet wire coatings.				
EIW	Polyester-	?/TD>	MW-30	180
	imide			
AIW	Polyamide-	?/TD>	?/TD>	220
	imide		MW-81C	200
SBH-EIW	Polyester-	Phenoxy	?/TD>	180
	imide			
AI-EIW, SDDW,	Polyester-	Polyamide-	MW-35C	200
LZDW	imide	imide		
PEW	Polyester	?/TD>	MW-5C	155
UEW	Polyurethane	?/TD>	?/TD>	105
EIW(F)	Polyester-	?/TD>	MW-5	155
	imide			
UEW(F)	Polyurethane	?/TD>	MW-79	155
UEW(B)	Polyurethane	?/TD>	MW-75C	130
SLRW, SLAW	Polyester-	Polyamide-	MW-73C	200
	imide	imide		
NY-EIW(F)	Polyester-	Nylon	MW-24	155
	imide			
NY-UEW	Polyurethane	Nylon	MW-28	130
NY-PEW(F)	Polyester	Nylon	MW-24C	155
NY-PEW(H)	Polyester	Nylon	MW-76C	180
RRW-H	Polyester-	Polyamide-	MW-73C	200
	imide	imide		
GADW	Polyester-	Polyamide-	?/TD>	200
	imide	imide		

Marking: Company name and material designation and Recognition marking symbol on packages or reels.

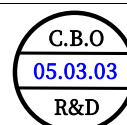
[Last Updated](#) on 2005-02-25

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SPECIFICATIONS

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TNC SPEC NO

LINE FILTER

CV620180SH

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TAIHAN ELECTRIC WIRE CO LTD

194-15 1-KA HOEHYUN-DONG

CHUNG-KU

CPO BOX 2624

SEOUL, KOREA

E109312

Mtl Dsg	Coat Typ		ANSI Type (+)	TI
	BC	OC		
Magnet Wire.				
EI-AIW	Ester-imide	Polyamide-imide	MW35, 73	200, 220#
EI-AIW (a)	Ester-imide	Polyamide-imide	MW35, 73	200, 220#
AL EI-AIW	Ester-imide	Polyamide-imide	MW@	240
EIW	Ester-imide	—	MW30, 72	180
EIW (a)	Ester-imide	—	MW30, 72	180
EIW-N	Ester-imide	Polyamide	MW76	180
AIW	Polyamide-imide	—	—	220
AIW (a)	Polyamide-imide	—	—	220
PEW-N	Polyester	Polyamide	MW76	180
SEIW	Solderable	—	MW77	180
	Polyester-imide			
UEW	Polyurethane	—	MW75	130
UEW-N	Polyurethane	Polyamide	MW80	155
EI-AIWR	Polyester-imide	Polyamide-imide	—	220
Bondable Magnet Wire.				
SBEIW	Ester-imide	-/Epoxy	—	180
PEW	Polyester	—	MW30,	180
			MW5	155
PE-AIW	Polyester	Polyamide-imide	MW35	200

@MW35A/MW73A construction, except rated 240 C.

#This rating is good only for the wire having SW included in the Marking. Additional consideration is needed before it is used in system's aging.

(a)-These wires may or may not have a suffix of SW.

Marking: Company name or trademark "TEC in a rectangle" and material designation on package or reel

Last Updated on 2005-01-17

TNC TNC CO.,LTD

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SPECIFICATIONS

ITEM

TNC SPEC NO

LINE FILTER

CV620180SH

Rev

0

HWA-IL ELECTRONICS CO LTD

HWA IL BLDG SUITE 501

2-92 CHANG JEON DONG

MAPO-GU

SEOUL, REPUBLIC OF KOREA

E140246

Mtl Dsg	Coat Type		ANSI Type	Temp Class
	BC	OC		
AI-EIW	Polyesterimide	Polyamide- imide	MW35C	200
HUW	Polyurethane	?/TD>	MW79	155
NPW	Polyester	Polyamide	MW76,	180,
			MW24	@155
NUW	Polyurethane	Polyamide	MW80,	155,
			MW28	@130
RNW	Modified Polyestet	Polyamide- imide	MW73	200
RAW	Polyester-imide	Polyamide- imide	?/TD>	220

@ Additional consideration is needed before it is used in systems thermal aging.

Marking: Company name, material designation or marked designation on package or reel, and Recognized Component Mark.

[Last Updated](#) on 2002-01-17

DYNEON GMBH & CO KG

WERK GENDORF

84504 BURGKIRCHEN, GERMANY

E188957

									H	D	
		Min.		H	H	RTI			V	4	C
		Thk	Flame	W	A	Elec	Mech		T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
Polytetrafluoroethylene (PTFE), designated "Dyneon" furnished as granular, pellet or powder.											
TF 2021 PTFE	NC	1.5	V-0	—	—	180	180	180	—	—	—

Marking: Company name or tradename "DYNEON" and material designation on container, wrapper or finished part.

[Last Updated](#) on 2002-05-01

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September 14, 2000

Plastics - Component

E67171

LG CHEMICAL LTD

Material Dsg	Color	Min. Thk mm	Flame Class	H W	H A	Elec	R T I		H V T	D 4 9	C T
				I	I		Imp	Str	R	5	I
GP-2300 (PBT)	ALL	0.71	HB	—	—	140	130	140	—	—	—
		1.5	HB	2	0	140	130	140	0	—	—
		3.3	HB	1	0	140	130	140	0	5	0
GP-2300 (PP)	ALL	0.71	HB	—	—	140	130	140	—	—	—
		1.5	HB	2	0	140	130	140	—	—	—
		3.0	HB	1	0	140	130	140	0	5	0
GP-2301-F	ALL	0.71	V-0	3	1	140	125	140	—	—	—
		1.5	V-0	2	0	140	125	140	—	—	—
		3.3	V-0	1	0	140	125	140	0	6	2
GP-2306-F	ALL	0.75	V-0	4	1	140	140	140	—	—	—
		1.5	V-0	2	1	140	140	140	—	—	—
		3.0	V-0	0	0	140	140	140	3	6	2
GP-2308F	ALL	0.74	V-0	3	0	75	75	75	—	—	—

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HEXION SPECIALTY CHEMICALS GMBH

POSTFACH 7154

58609 ISERLOHN, GERMANY

E61040

									H	D	
			Min.		H	H	R T I		V	4	C
			Thk	Flame	W	A	Elec	Mech	T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
Phenolic (PF), "Rutaform, Bakelite", furnished as pellets, powder, granular material.											
PF 2736(a)(b)											
	BK	0.46	V-0	-	-	150	150	150	0	5	3
	ALL	0.81	V-1	0	2	150	150	150			
	NC, GN, BK	0.81	V-0	0	2	150	150	150			
	ALL	1.5	V-0	0	2	150	150	150			
		3.0	V-0	0	2	150	150	150			

(a) - Optional Suffix "H".

(b) - Grade designation may be followed by a four digit number representing color, P or S indicating type of molding, a single digit representing slight color variation.

Marking: Company name or tradename "BAKELITE" , "RUTAFORM" and material designation on container, wrapper or finished part.

Last Updated on 2006-05-15

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13. Warranty Letter

Non-use certificate

Description	For approval / For mass production	Submitting date	2007 . 11 . 15
-------------	------------------------------------	-----------------	----------------

Cooperating suppliers				
Company name	YUYANG TELECOM CO.,LTD.	Approval	Person in charge	Head of department
Contact	Tel.:82-31-350-7406	Name	KIM SANG OK	CEO
e-Mail	sokim@yuyang.co.kr	Signature		  PRESIDENT SANG OK KIM

LGE Part No.	TOP : EAY41970901 BOTTOM : EAY41971101	Part production date	filling the sheet in case of mass production
Maker Part No.	LGP32-ATN_TOP LGP32-ATN_BOTTOM	Production plant	HWASUNG in KOREA
Part name			

This is to certify that materials used and contained in the products and components that we supply to your company, meet the standards of the checked items listed below.

———— below ————

☒ We meet the standards of LG Electronics for six major substances (Pb, Cd, Cr⁶⁺, Hg, PBBs, PBDEs) as designated by RoHS for control.

* Records are requested if they are parts to be actually installed on the PCB (Printed Circuit Board)

Soldering Type: ☒ Flow ☐ Reflow (Requirement : 250 °C/10 sec)

1. Maximum heat-resisting temperature : 260 °C 2. Time within actual Peak time : 10 sec.

☒ Pb-Free Soldering (all solder cream, Bar, Wires included) is available to apply.

Note.

1. All the contents written on these documents must be created on the basis of facts, and cooperating suppliers must submit the data immediately whenever LG Electronics requests.
2. In the case that these documents are used for approval purposes, cooperating suppliers must submit the sample on the request. For the purpose of mass production, it must be submitted at the time of delivering the first product.