

PART SPEC

REV.	DATE	CONTENTS	DRAWN	APPROVED
00	2001.09.20	initial release	M.S NA	B.J KWAK
01	2001.11.28	REVISION BY BN0200104C7 * CHANGED PCB PATTERN (REV. 00 --> REV.0.1)	M.S NA	B.J KWAK
02	2002.08.19	REVISION BY BN0200200CE & BN0200203F3 & ADD PCB MAKER(TAICHUN) TO PART LIST	M.S NA	B.J KWAK



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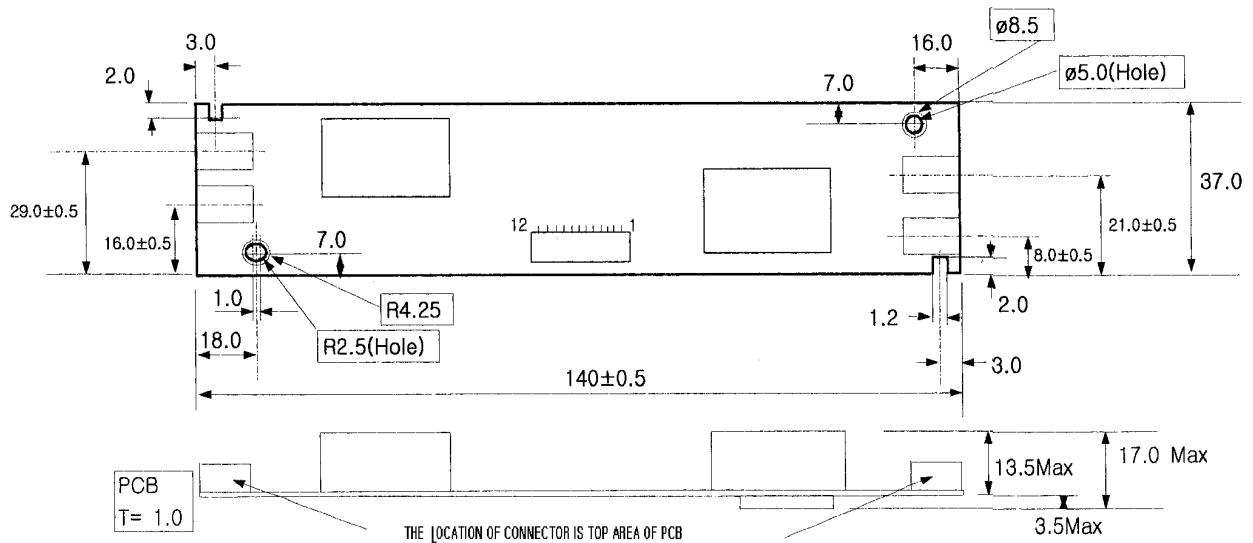
PART SPEC

1.0 SCOPE

- 1.1 THIS DOCUMENT DEFINES FOR INVERTER, S1C1542T, 11.5-14.5V, 48KHz
- 1.2 USAGE : BACK LIGHT 4 LAMP CCFL DRIVER INVERTER FOR SEC LCD
- 1.3 TYPE OF PACKAGE :
- 1.4 COATING :

2.0 RELATED DOCUMENTS

3.0 DIMENSIONS



4.0 REQUIREMENTS

4.1 MAXIMUM RATINGS

SYMBOL	PARAMETER	RATING	UNIT
V_{in1}	input voltage1	11.5 -14.5	V
V_{in2}	input voltage2	4.9 -5.1	V
T_{opr}	operating temperature	0 +50	
T_{stg}	storage temperature	-30 +80	
H_{op}	operating/storage humidity	10 -90	%RH

4.2 CONTROL SIGNAL

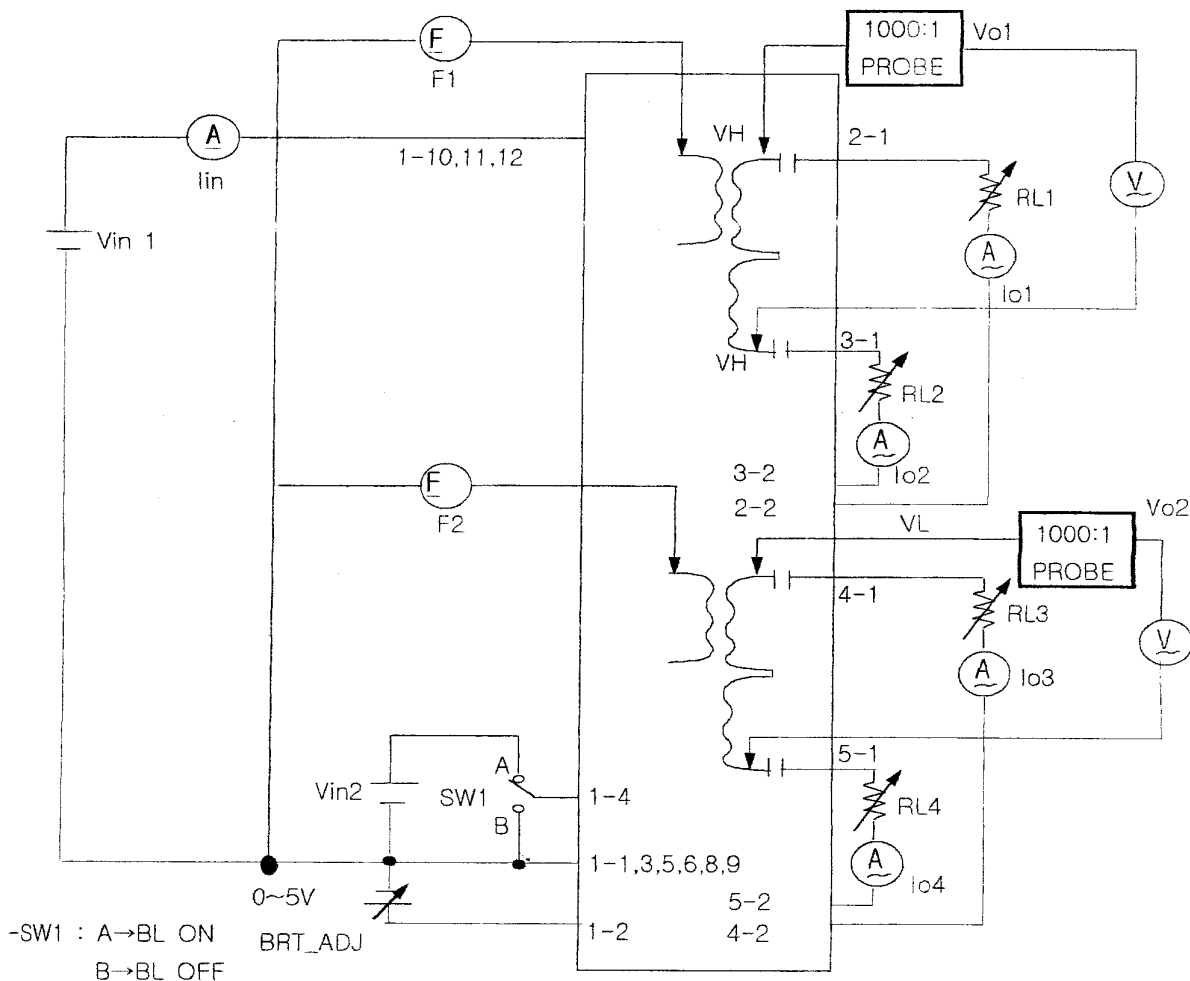
PIN NO.	SYMBOL	STATUS	ACTION	REMARKS
CN1 #4	BKLT-ON	HIGH	LAMP (CCFL) -ON	2.4-5.25V
		LOW	LAMP (CCFL) -OFF	0.8V MAX.



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4.3 TEST CIRCUIT



4.4 INPUT/OUTPUT CHARACTERISTICS

ITEM	SYMBOL	CONDITION				SPECIFICATION			UNIT
		Vin1 (V) (DC- IN)	Vin2 (V)	BRT- ADJ	RL (kΩ)	MIN	TYP	MAX	
OUTPUT CURRENT	Io1,2(max)	11.5 -44.5	5	0V	110±0.5	5.4	6.1	6.8	mArms
	Io1,2(min)	11.5 -44.5	5	5V	110±0.5	1.6	2.6	3.6	
	Io3,4(max)	11.5 -44.5	5	0V	110±0.5	5.4	6.1	6.8	
	Io3,4(min)	11.5 -44.5	5	5V	110±0.5	1.6	2.6	3.6	
INPUT CURRENT	Iin	14	5	0V	110±0.5	-	1.6	2.0	ADC
FREQUENCY	F(1)	14	5	0V	110±0.5	40	48	56	kHz
FREQUENCY	F(2)	14	5	0V	110±0.5	40	48	56	kHz
DIMMING FREQUENCY (Ta=25)	FD	14	5	5	110±0.5	525	535	545	Hz

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5.0 FUNCTIONAL PIN DESCRIPTION

5.1 CN1 CONNECTOR 12505WR-12WR-1200 (YEONHO)

PIN NO	SYMBOL	REMARK
2	BRT_ADJ	0 ~ 5V
1, 3, 5, 6, 8, 9	GND	GND
4	BL ON/OFF	CCFL Drive SIGNAL(Active HIGHT)
7	N.C	NO CONNECTION
10, 11, 12	DC- IN	DC INPUT Power(12V)

5.2 CN2 CONNECTOR : 35001WR-02P (YEONHO)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT
2	COLD	LOW

5.3 CN3 CONNECTOR : 35001WR-02P (YEONHO)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT
2	COLD	LOW

5.4 CN4 CONNECTOR : 35001WR-02P (YEONHO)

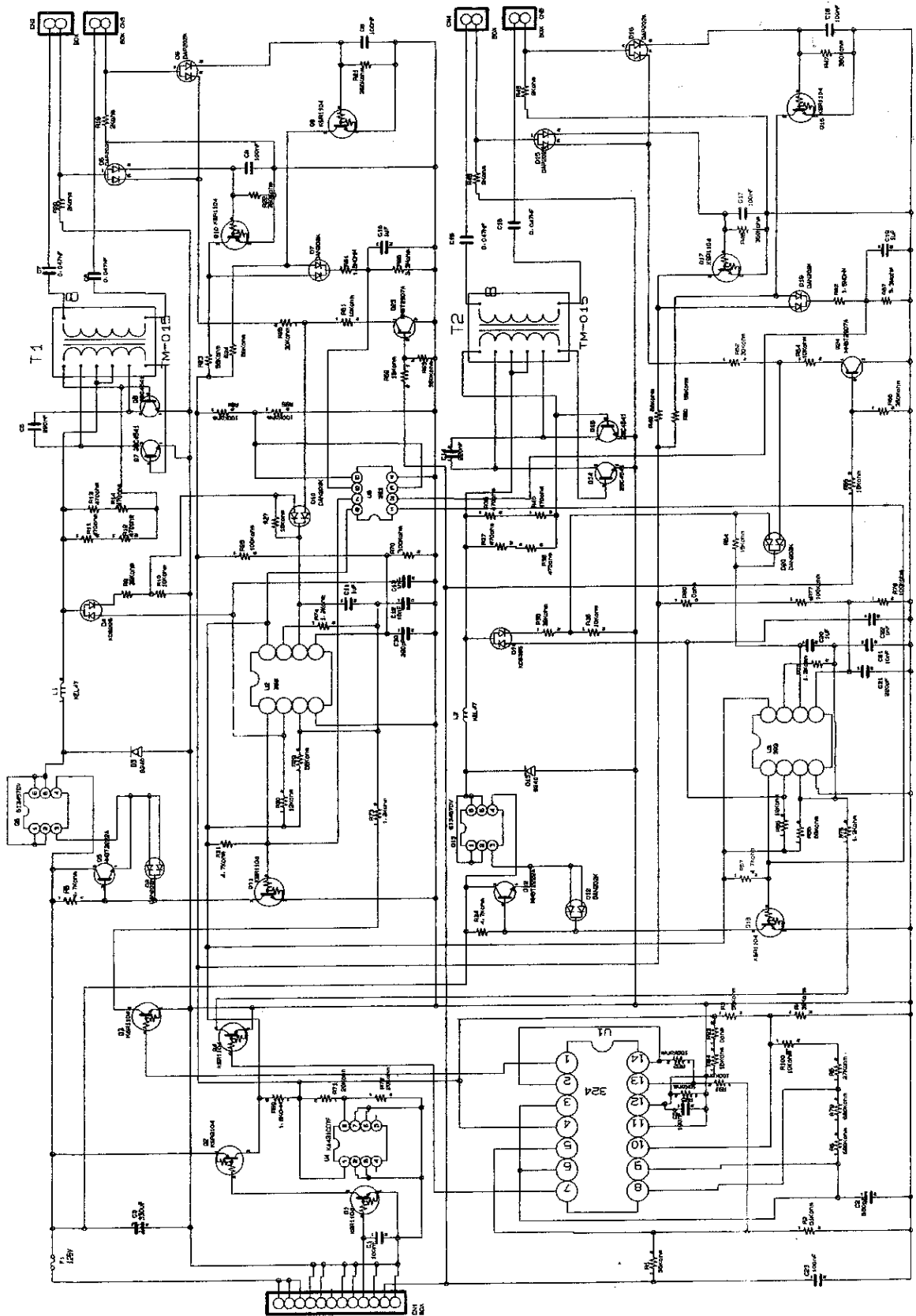
PIN NO	SYMBOL	REMARK
1	HOT	HIGHT
2	COLD	LOW

5.5 CN5 CONNECTOR : 35001WR-02P (YEONHO)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT
2	COLD	LOW

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6.0 INTERNAL CIRCUIT DIAGRAM



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7.0 PARTS LIST

LOCATION	NAME	1st		2nd	
		TYPE NO	MAKER	TYPE NO	MAKER
U1	IC	KA324	FAIRCHILD	BA10324	ROHM
		KIA324	KEC	LM324	T.I
U2,U3,U5	IC	KA393	FAIRCHILD	BA10393	ROHM
		KIA393	KEC	LM358	T.I
U4	IC	KIA431CD	SEC	TL431CD	SGS
Q1,3,4,6,10,16,17	TR	KSR1104	FAIRCHILD	KRC104S	KEC
Q11,18	TR	KSR1104	FAIRCHILD		
Q2	TR	KSR2104	FAIRCHILD	KRA104S	KEC
Q5,12	TR	KST2222A	FAIRCHILD	KNT2222AS	KEC
Q23,24	TR	KST2907A	FAIRCHILD	KNT2907AS	KEC
Q6,13	TR	SI34557DV	VI SHAY	FDC658P	FAIRCHILD
Q7,8,14,15	TR	2SC4541	TOSHIBA	2SD2403	NEC
		KTD1624C	KEC		
D2,7,10,12,19,20	DIODE	KDS184	KEC	DAN202K	ROHM
		SDS2838	AUK		
D3,13	DIODE	B240	DIODES.INC		
D5,6,15,16	DIODE	KDS181	KEC	DAP202K	ROHM
D4,14	DIODE	KDS226	KEC	DAN217	ROHM
		SDS7000	AUK		
C3	C-ELEC	TMQ,330uF/25V	SECO	LXZ,330uF/25V	SAMYONG
C5,14	C-FILM	MPPS2A224K	SUNGHO	MDDHF2A2224KT	HITACHI
C6,7,15,16	C-CERA	DISCRETE-470K	NETRON TECH	DISCRETE-470	TDK
C13,22	C-CERA	CL21C102JBN	SEMCO		
C1,8,9,17,18,23,50	C-CERA	CL21B104KBN	SEMCO		
C11,20,C10,19	MLCC	CL21F105ZAN	SEMCO		
C12,21	MLCC	CL21B103KBN	SEMCO		
C30,31	MLCC	CL21C221JBN	SEMCO		
C2	MLCC	CL21C681JBN	SEMCO		
C32		NO MOUNT			
R27,R54,62,65,94	R-CHIP	RC1608J153	SEMCO		
R2	R-CHIP	RC1608J513	SEMCO		
R30,R56	R-CHIP	RC1608J123	SEMCO		
R1,3,23,24,29 49,50,55	R-CHIP	RC1608J563	SEMCO		
R10,36,61,64,95	R-CHIP	RC1608J103	SEMCO		
R5	R-CHIP	RC1608J243	SEMCO		
R6,79	R-CHIP	RC1608J684	SEMCO		
R19,20,45,46	R-CHIP	RC2012J202	SEMCO		
R11,13,37,39	R-CHIP	RC3216J471	SEMCO		
R8,31,34,57	R-CHIP	RC2012J472	SEMCO		

02

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LOCATION	NAME	1st		2nd	
		TYPE NO	MAKER	TYPE NO	MAKER
R4,9,35	R-CHIP	RC1608J393	SEMCO		
R21,22,47,48,63,66	R-CHIP	RC1608J364	SEMCO		
R81,82	R-CHIP	RC1608J165	SEMCO		
R25,52	R-CHIP	RC1608J303	SEMCO		
R28,70,77,78,84,85,91,92	R-CHIP	RC1608J104	SEMCO		
R73,74,75,76	R-CHIP	RC1608J122	SEMCO		
R69	R-CHIP	RC3216J182	SEMCO		
R12,14,38,40	R-CHIP	RC3216J621	SEMCO		
R71,72	R-CHIP	RC1608J203	SEMCO		
R80,R83,93	R-CHIP	RC1608J000	SEMCO		
R86,87	R-CHIP	RC1608J335	SEMCO		
R100	VR	10kΩ	NOBLE		
T1,2	TRANS	TM115	NAMYANG	TM115	DAESUNG
		TM115	KYUNG IN	TM115	SOOJUNG
L1,2	COIL	KEL47	KYUNG IN	KEL47	NAMYANG
F1	FUSE	SSQ3	BEL	451003	LITTEL
CN1	CONNECTOR	12505WR-12A00	YEONHO	53261-1290	MOLEX
CN2,3,4,5	CONNECTOR	35001WR-02P	YEONHO	SM02B-BHS	JST
PCB	PCB	SIC1542T	YONGEUN	SIC1542T	TAI CHUN
ADHESIVE	for T1,T2	KE40RTV	SHI NETSU		

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8.0 RELIABILITY SPECIFICATION

NO	ITEM	CONDITION AND METHOD
1	HIGH TEMPERATURE STORAGE TEST	TEMP.;70 DURATION: 500 hrs
2	LOW TEMPERATURE STORAGE TEST	TEMP.;40 DURATION: 500 hrs
3	HIGH TEMPERATURE HIGH HUMIDITY STORAGE TEST	TEMP.;40 ,HUMIDITY:95%RH DURATION: 500 hrs
4	HIGH TEMPERATURE HIGH HUMIDITY OPERATION TEST	TEMP.;40 ,HUMIDITY:95%RH DURATION: 1000 hrs
5	THERMAL SHOCK TEST	TEMP; -30 70 , 250 CYCLE (30 MINUTE), (30 MINUTE)
6	VIBRATION TEST	AMPLITUDE;1.5mm,FEEQUENCY;10-55Hz, POSITION; TREE PERPENDLCULAR PLANES,DURATION;1000 hrs
7	HIGH TEMPERATURE OPERATION TEST	TEMP;50 DURATION;72 hrs
8	LOW TEMPERATURE OPERATION TEST	TEMP; 0 DURATION;72 hrs



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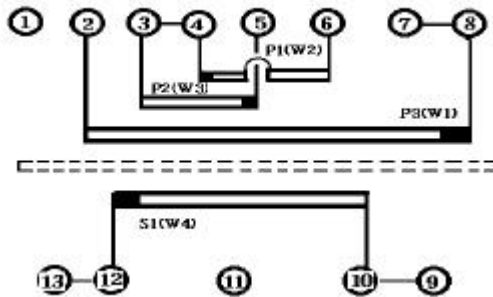
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9.0 DETAIL SPECIFICATION FOR KEY PARTS

9.1 TRANS (TM-115)

9.1.1 WINDING SPEC & ELECTRICAL CHARACTERISTICS



31.5 uH ± 10%

SYMBOL & WINDING	WIRE	TURNS	INDUCTANCE	CONDITION
P1 (#8-#2)	1UEW 0.15 ϕ	2	0.6uH REF.	AT 1KHZ 1Vrms
P2 (#4-#6)	1UEW 0.40 ϕ	7	31.5 uH ± 10%	
P3 (#5-#3)	1UEW 0.40 ϕ	7		
S1 (#12-#10)	FUEW 0.04 ϕ	1752 (77+200+255*6+200)	440mH ± 12%	

9.1.2 MATERIAL LIST (TM-115)

NO	COMPONENT	MAKER OF COMPONENT	NAME OF MATERIAL	MAKER OF MATERIAL	UL FILE NO
1	CORE	SAMSUNG CORNING	SL-2, EEA21.2		
		SAMWHA ELECTRONICS	PL-7, EDF 2124		
		ISU CERAMICS	PM7, EDF2124		
2	BOBBIN	JO KWANG ELECTRONICS	94V-0, SB EE20.6 LCP UL	SUMITOMO CHEMICAL	E54705(M)
3	INSULATOR	SKC LTD	PETP FILM(SR55)		E 74359(S)
4	WIRE	DONGYANG ELECTRONICS	1UEW 0.15 ϕ		E 10761(S)
			1UEW 0.40 ϕ		
			F UEW 0.040 ϕ		
5	INSULATION TAPE	DUCK SUNG TAPE CO., LTD	POLYESTER FILM TAPE 0.025mm *16.0		E 105147(S)
			POLYESTER FILM TAPE 0.025mm *5.0		
6	CORE FIXING TAPE				
7	WAX	MICRO WAX 180	MOBILOR ESSO CO., LTD		

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9.2 DETAIL MATERIAL LIST FOR KEY PARTS (SAFETY)

SYMBOL	NAME	TYPE NO.	MANUFACURER	DESCRIPTION
F1	FUSE	451002	LITTLE FUSE INC	UL FILE NO:E10480 CSA FILE NO:LR29826
		SSQ2	BEL	UL FILE NO:E20624 CSA FILE NO:LR39772
PCB	PRINTED CIRCUIT BOARD	FR-4	KIJOO	UL FILE NO:E111636
			YOUNG EUN ELECTRO	UL FILE NO:E173507
CN1	CONNECTOR	53261-1290	MOLEX	NYLON 4/6 UL94V-0
		1205WR-12A00	YEUNHO	NYLON 4/6 UL94V-0
CN2,3,4,5	CONNECTOR	SM02B-BHS	JST	PA-46 UL94V-0
		35001WR-02P	YEONHO	PA-46 UL94V-0
T1	TRANSFORMER	TM-115	DAISUNG TELECOMMUNICATION	CLASS A (105)
			NAMYANG ELECTRONICS	CLASS A (105)
			KYUNGIN ELECTRONICS	CLASS A (105)
			SOO JUNG	CLASS A (105)
	INSULATOR	PC	TEIJIN CHEMICALS	UL FILE NO:E50075(M)
		PC	SP PACIFIC	UL FILE NO:E141248

10.0 PACKING REQUIREMENTS

BULK



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SAMSUNG P/N	VENDOR #1 P/N	VENDOR #2 P/N	VENDOR #3 P/N	VENDOR #4 P/N
BN44-00056B	SIC1542T			

VENDOR #1	SAMSUNG ELECTRO-MECHANICS CO.,LTD.
VENDOR #2	
VENDOR #3	
VENDOR #4	

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