

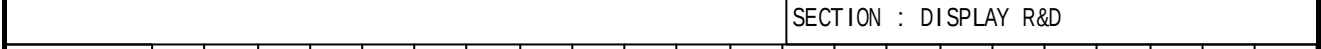
PART SPEC

DESCRIPTION:	INVERTER,SIC 1802
01	

SPECIFICATION: 11.5V~14.5V, 48KHZ, 0~+50, BULK



SAFETY

[illegible][illegible][illegible]

DRAWN: MYUNG-SOO NA	7202		DOC. NO.: BN44-00038ACB REF. NO.:
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APPROVED:		CO., LTD.							
BONG-KYEOM KIM	7196	(All Rights Reserved.)	SIZE: A4	PAGE:	1				

1

PART SPEC

REV.	DATE	CONTENTS	DRAWN	APPROVED
00	2000.07.10	initial release	M.S NA	B.K KIM
01	2000.11.17	REVISION BY ECO NO:BN020000252 * CHANGED Vin RANGE * CHANGED OUTPUT CURRENT(min) * ADDED DIMMING FREQUENCY * CHANGED CN1-7 (5V); NO CONNECTION * ADDED PARTS:Q23,Q24,Q25,D23,C25,R61 ~ R66,R83,R84,R100 * DELETED PARTS:R26,53 * CHANGED PARTS;C3,C2,R1-R6,R19,R20,R45,R46,R25,R52, R29,R55, C5,C14,C11,C20,R30,R31,R56,R57,R9,R35 * CHANGED PCB :REV.01 → REV.1.0 * CHANGED CIRCUIT & PATTERN & TRANS SPEC.	M.S NA	B.K KIM
02	2001.07.02	REVISION BY ECO NO: BN020010257 * CHANGED PARTS;R30,R56,R31,R57 * DELETED Q11,Q18 (MAKER OF KEC) * CHANGED INSULATOR FROM SR50 TO SR55 * CHANGED DIMMING FREQUENCY * ADDED PARTS:U5,C30,C31,C50,R69,R70,R79,R85 ~R87 R91-R95,R101-R108 * DELETED PARTS: Q19,Q21,Q25,D22,D23,C24,R83 * CHANGED PARTS:U1,Q4,C2,C10,C12,C21,C19,C25,R5,R6, R28,R29,R30,R31 * CHANGED PCB (REV1.0-> 1.5) * CHANGED CIRCUIT	M.S NA	B.K KIM
03	2001.08.12	ECO NO : BN020010285 (REV. 1.5--> 1.0) (CANCELED ECO NO :BN020010257) ECO NO:BN02001029D (ADD ADHENSIVE TO C14,C5,C3)	M.S NA	B.K KIM
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DOC. NO.: BN44-00038ACB		REF. NO.:		PAGE: 2

PART SPEC

1.0 SCOPE

1.1 THIS DOCUMENT DEFINES FOR INVERTER, SIC1802,12.8-15.2V,48KHz

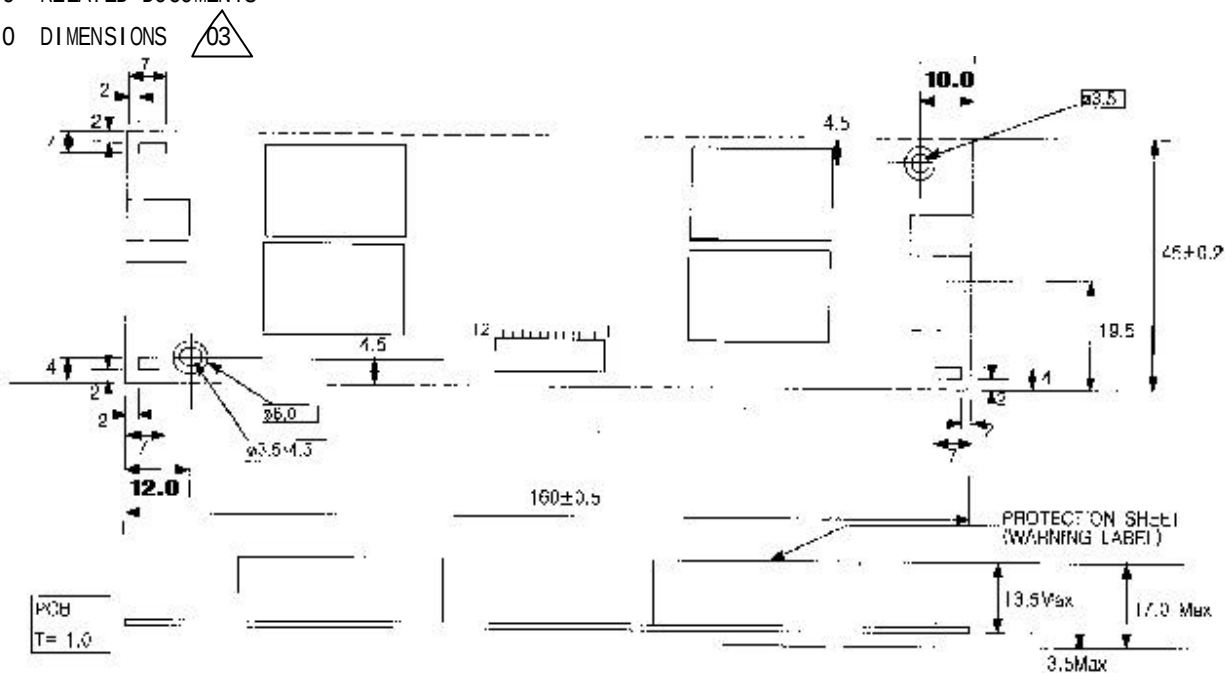
1.2 USAGE : BACKLIGHT 4 LAMP CCFL DRIVER INVERTER FOR TX17P0

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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DOC. NO.: BN44-00038ACB

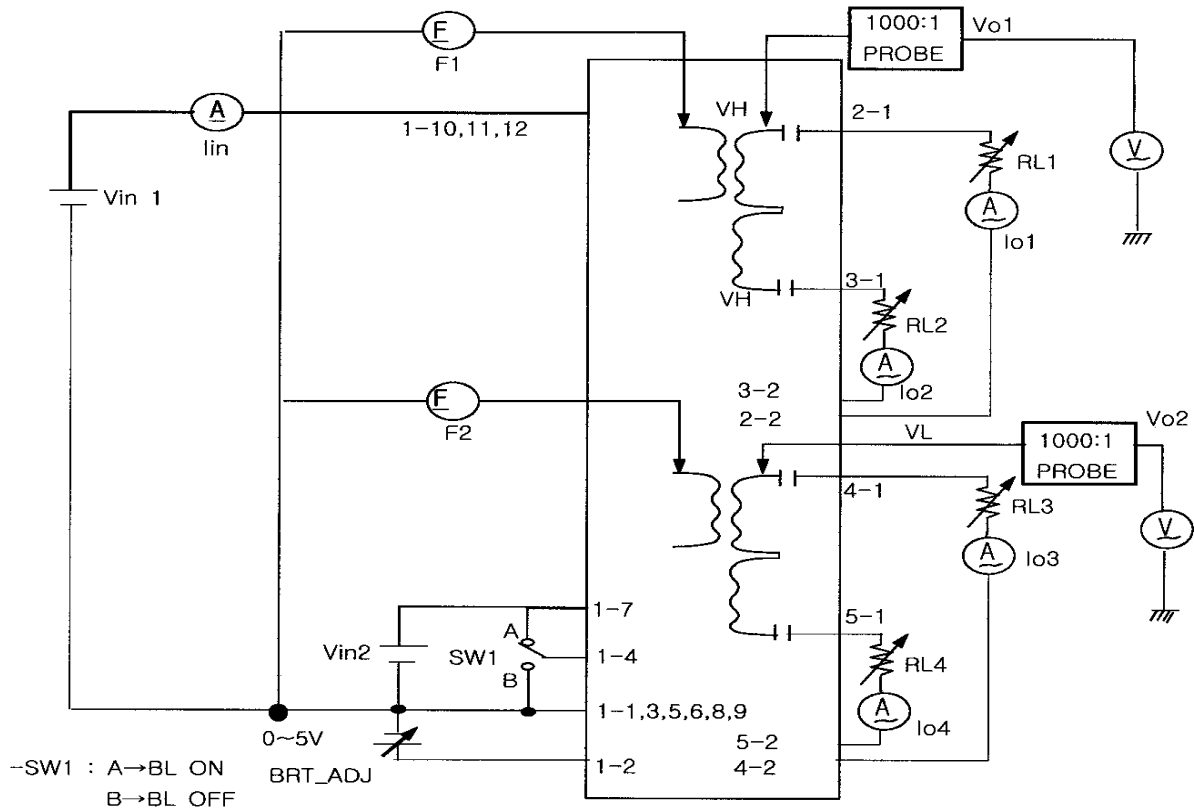
REF. NO.:

REV. : 02

PAGE: 3

PART SPEC

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	I _{ol1,2} (max)	11.5~14.5	5	0V	80±0.5	6.2	6.7	7.2	mArms
	I _{ol1,2} (min)	11.5~14.5	5	5V	80±0.5	1.5	2.5	4.0	
	I _{ol3,4} (max)	11.5~14.5	5	0V	80±0.5	6.2	6.7	7.2	
	I _{ol3,4} (min)	11.5~14.5	5	5V	80±0.5	1.5	2.5	4.0	
INPUT CURRENT	I _{in}	14	5	0V	80±0.5		2.1	2.2	ADC
DIMMING FREQUENCY	FD	14	5	0V	80±0.5	189	192	195	Hz
FREQUENCY	F(1)	14	5	0V	80±0.5	41	48	55	kHz
	F(2)	14	5	0V	80±0.5	41	48	55	

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DOC. NO.: BN44-00038ACB

REF. NO.:

REV.: 03 PAGE: 4

KQA-2029 F7R0('1996.10.25)

PART SPEC

5.0 FUNCTIONAL PIN DESCRIPTION

5.1 CN1 CONNECTOR 53261-1290(MOLEX)

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	VDD	5V
10, 11, 12	DC- IN	DC INPUT Power(14V)

5.2 CN2 CONNECTOR: SM02B-BHS-1-TB(JST)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT 1
2	COLD	LOW

5.3 CN3 CONNECTOR :SM02B-BHS-1TB(JST)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT 1
4	COLD	LOW

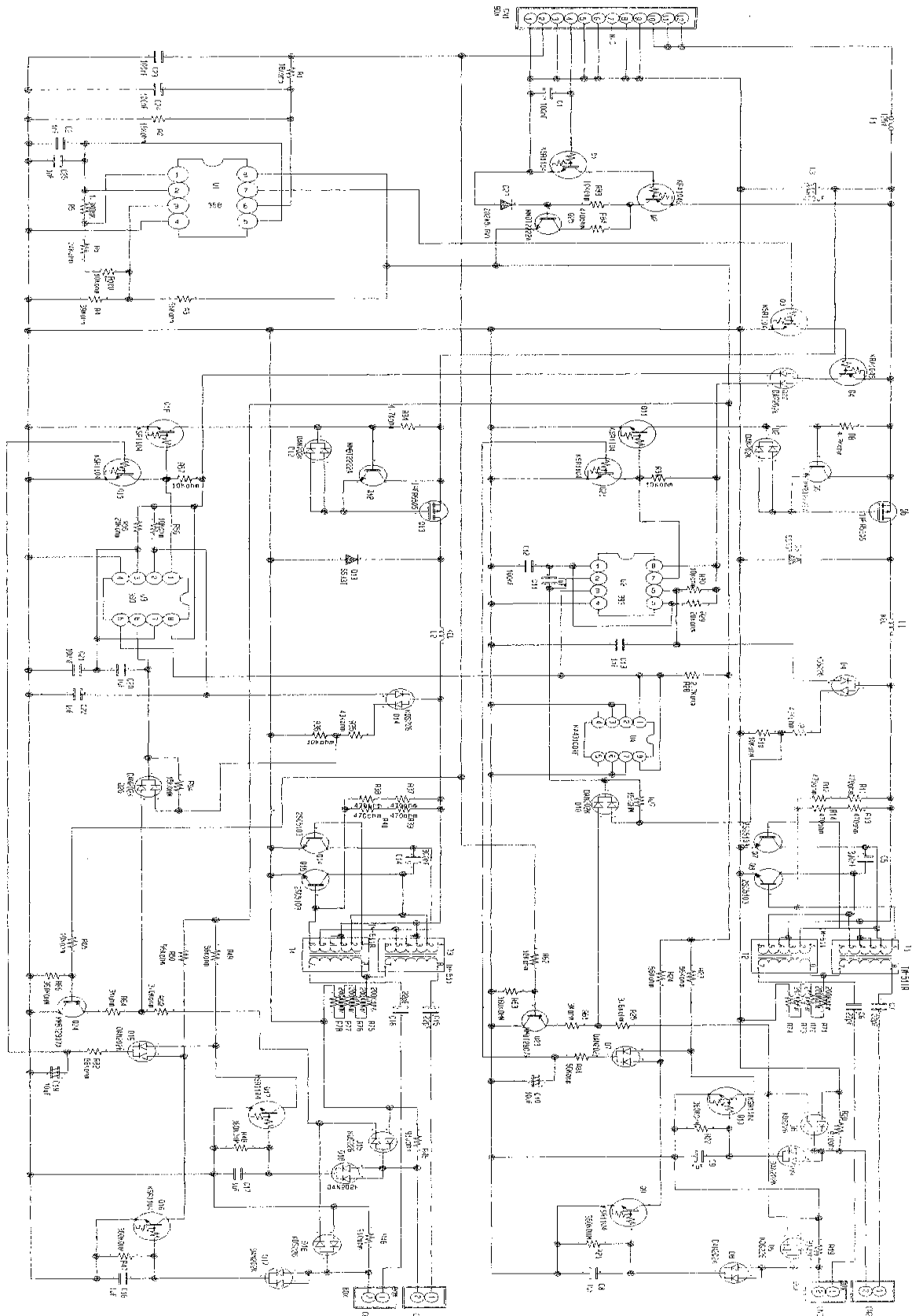
5.4 CN4 CONNECTOR :SM02B-BHS-1TB(JST)

PIN NO	SYMBOL	REMARK
1	HOT	HIGHT 1
4	COLD	LOW



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6.0 INTERNAL CIRCUIT DIAGRAM 03



PART SPEC

7.0 PARTS LIST



SYMBOL	NAME	1st		2nd	
		TYPE NO	MAKER	TYPE NO	MAKER
U4	IC	KA431CD	SEC	TL431CD	SGS
U1	"	KA358	SEC	BA10358	ROHM
		KIA358	KEC	LM358	T.I
U2,3	IC	KA393	SEC	BA10393	ROHM
		KIA393	KEC	LM358	T.I
Q1,3,9,10,11,16,17, Q18,19,21	TR	KRC104S	KEC	KSR1104	SEC
Q2,4	"	KRA104S	KEC	KSR2104	SEC
Q5,12,25	"	KST2222A	SEC	KTN2222AS	KEC
Q23,24		KST2907A		KTN2907AS	
Q6,13	TR	IRFR5505	SEC	SFR9034	F.C
	"	2SJ246	HITACHI		
Q7,8,14,15	TR	2SC5103	ROHM	2SD1803	SANYO
	"	KTC5103D	KEC		
D2,7,8,9,10,12,17,18, 19,20	DIODE	KDS184	KEC	DAN202K	ROHM
		SDS2838	AUK		
D3,13	DIODE	SS33&SS34	G.I	SK33/SK34	PANJIT
D22	"	KDS181	KEC	DAP202K	ROHM
D23	ZENER "	5.6Y	KEC	5.6B	ROHM
D4,5,6,14,15,16	"	KDS226	KEC	DAN217	ROHM
	"	SDS7000	AUK		
C3	C-ELEC	LXZ470uF/25V	SAMYUNG		
C5,14	FILM	MPPS2A304K	SUNGHO	MMX-E-2A304K	HITACHI
C6,7,15,16	C-CERA	C4520CH3F220K	TDK	CF42CG220J3000B	AVX
	"	C1808N220J302T	HOLY STONE		
C2,C13,22,25	MLCC	CL21C102JBN	SEMCO		
C1,12,21,23,24	"	CL21B104KBN	"		
C10,19	TANTAL	10uF/6.3V	"		
C8,9,11,17,18,20	MLCC	CL21F105ZAN	"		
R2,27,54	CHIP-R	RC2012J153	SEMCO		
R1	"	RC2012J183	"		
R4	CHIP-R	RC2012J393	SEMCO		
R10,36,62,65,83,R30, 31,56,56,57	"	RC2012J103	"		
R5	"	RC2012J243	"		
R6	"	RC2012J135	"		
R19,20,45,46	"	RC3216J911	"		
R11~14,37~40,84	"	RC3216J471	"		
R8,34	"	RC2012J472	"		
R9,35	"	RC2012J433	"		

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DOC. NO.: BN44-00038ACB

REF. NO.:

REV.: 03

PAGE: 7

PART SPEC

03

SYMBOL	NAME	1st		2nd	
		TYPE NO	MAKER	TYPE NO	MAKER
R21,22,47,48,63,66		RC2012J364			
R 3,23,24,49,50,81,82	"	RC2012J563	"	"	
R25,52	"	RC2012J362	"	"	
R26,53	"	NO MOUNT	"	"	
R28	"	RC2012J272	"	"	
R29,55	"	RC2012J203	"	"	
R71~78	"	RC3216J204	"	"	
R61,64		RC2012J302			
R100	VR	100kΩ	"		
T1,4	TRANS	TM511R	NAMYANG	TM511R	DAESUNG
	"	TM511R	KYUNGIN		
T2,3	TRANS	TM511	NAMYANG	TM511	DAESUNG
	"	TM511	KYUNGIN		
L1,2	COIL	KEL47	KYUNGIN	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	SIC1802 Rev0.1	YOUNGEUN	SIC1802 Rev0.1	KIJOO
ADHENSIVE		KE40RTV	SHINETSU		

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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DOC. NO.: BN44-00038ACB

REF. NO.:

REV.: 03 PAGE: 8

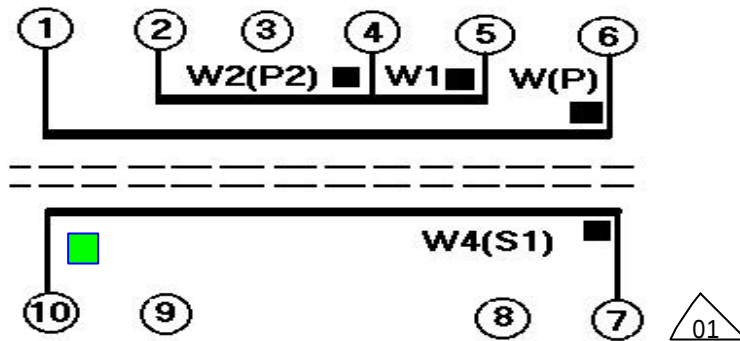
KQA-2029 F7R0('1996.10.25)

PART SPEC

9.0 DETAIL SPECIFICATION FOR KEY PARTS

9.1 TRANS (TM-511R, TM-511) 01

9.1.1 WINDING SPEC & ELECTRICAL CHARACTERISTICS



SYMBOL& WINDING	WIRE	TURNS	INDUCTANCE	CONDITION
W1 (#5-#4)	2UEW 0.30 ¢	8	#5-#2: 41.0uH ±10%	AT 1KHZ 1Vrms
W2 (#4-#2)	2UEW 0.30 ¢	8		
W3 (#6-#1)	2UEW 0.15 ¢	2	0.6uH ref.	
W4 (#7-#10)	2UEW 0.04 ¢	1,440 (288*5)	360mH ± 10%	

9.1.2 MATERIAL LIST (TM-511R) 02

NO.	COMPONENT	MANUFACTURE COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE NO.
1	CORE	SAM SUNG CORNING CO., LTD.	SL-2 EEA 17.7A		
2	BOBBIN	JO KWANG ELECTRONICS CO., LTD.	(94V-0) SB EE18-2 LCP UL	SUMITOMO CHEMICAL CO., LTD.	E 54705 (M)
3	WIRE	DONG YANG ELECTRONICS IND CO., LTD.	2 EW 0.15Ø (AWG #35)		E 102761(S)
4			2 UEW 0.30Ø (AWG #29)		
5			F UEW 0.04Ø (AWG #44)		
6	INSULATION TAPE	DUCK SUNG TAPE CO., LTD. (Cat No. DTS-204)	POLYESTER FILM TAPE 0.025 mm X 13.5 mm		E 105147(S)
7	CORE FIXING TAPE		POLYESTER FILM TAPE 0.025 mm X 5.0 mm		
8	INSULATOR	SKC LTD	PETP FILM (SR55) 0.075mm(T) MIN		E 74359 (S)
9	WAX	MICRO WAX 180	MOBIL or ESSO		



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9.2 DETAIL MATERIAL LIST FOR KEY PARTS (SAFETY)

SYMBOL	NAME	TYPE NO.	MANUFACURER	DESCRIPTION
FI	FUSE	451003	LITTELFUSE INC	UL FILE NO :E10480 CSA FILE NO :LR29862
		SSQ3	BEL	UL FILE NO :E20624 CSA FILE NO :LR39772
PCB	PRINTED WIRING BOARD	FR- 4	KIJOO	UL FILE NO :E111636
			YOUNG EUN ELECTRONICS	UL FILE NO:E173507
CN1	CONNECTOR	53261 - 1290	MOLEX	NYLON 4/6 UL94V-0
	"	12505WR - 12A00	YEONHO	"
CN2,3 CN4,5	CONNECTOR	SM02B - BHS	JST	PA46 UL94V-0
	"	35001WR - 02P	YEONHO	"
	INSULATOR	PC	TEIJIN CHEMICALS	UL FILE NO:E50075(M)
T1,4	TRANSFORMER	TM-511R	DAISUNG TELECOMMUNICATIONS	CLASS A (105 de.C) SEE TRANS SPEC
			NAMYANG ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			KYUNGIN ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			DAISHIN DENKEN	CLASS A (105 de.C) SEE TRANS SPEC
T2,3	TRANSFORMER	TM-511	DAISUNG TELECOMMUNICATIONS	CLASS A (105 de.C) SEE TRANS SPEC
			NAMYANG ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			KYUNGIN ELECTRONICS	CLASS A (105 de.C) SEE TRANS SPEC
			DAISHIN DENKEN	CLASS A (105 de.C) SEE TRANS SPEC

10.0 PACKING REQUIREMENTS

BULK



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DOC. NO.: BN44-00038ACB

REF. NO.:

REV.: 00 PAGE: 10

KQA-2029 F7R0('1996.10.25)

PART SPEC

SAMSUNG P/N	VENDOR #1 P/N	VENDOR #2 P/N	VENDOR #3 P/N	VENDOR #4 P/N
BN44-00038A	SIC1802			
VENDOR #1	SAMSUNG ELECTRO-MECHANICS CO.,LTD.			
VENDOR #2				
VENDOR #3				
VENDOR #4				
	SAMSUNG ELECTRONICS CO.,LTD.(All Rights Reserved.)			
DOC. NO.: BN44-00038ACB		REF. NO.:		REV.: 00 PAGE: 11