

25C1815 (BLU.) (Y)  
 25C1923 (O)  
 25C1959 (Y)



25C480 (B)

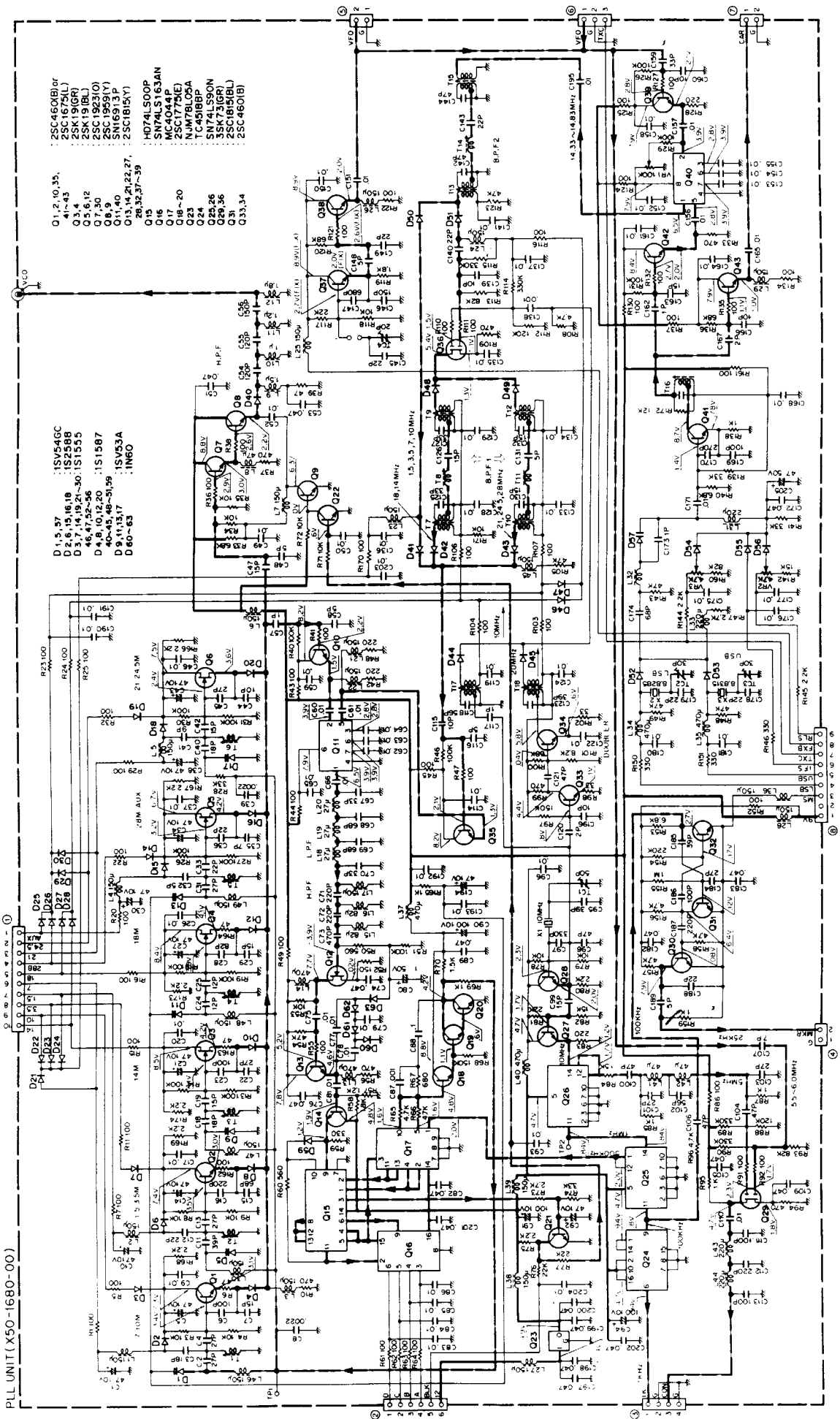


25K19 (BLU.) (GR) 35K73 (GR)



- Q1 2.10 35.4~43 25C460 (B) or 25C1675 (L) Q3 4 25K19 (GR) Q5 6 12 25K19 (BLU) Q7 30 25C1823 (O) Q8 9 25C1959 (Y)
- C11 40 SN16913P
- Q13 14 21 22 27 28 32 37~39 25C1815 (Y) Q15 HC74LS00P or SN74LS00CN C16 74LS16GN or SN74LS163AN or H074LS163P
- Q17 MC4044P C18~20 25C1775
- Q23 NJM78L05A Q24 TC45'BBP Q29 36 35K73 (GR) Q25 25 SN74LS90A or H074LS90P Q31 25C1815 (B) Q33 34 25C480 (B)
- D1 5 57 15V54GC D2 6 15 18 16 1S25BB D3 7 14 19 21~30 C46 47 52~56 1S155E D4 8 10 12 20 40~45 48~51 59 1S1587
- D9 11 13 17 15V63A D60~63 1NEO

**▼ PLL UNIT (X50-1680-00)**



- 25C460(B) or
- 25C1675(L)
- 25K19(GR)
- 25K19(BL)
- 25C1965(V)
- 25C1965(Y)
- 25C1815(Y)
- 25C1815(P)
- 25C1815(BL)
- 25C460(B)

- O1, 2, 10, 35, 41-43
- O3, 4
- O5, 6, 12
- O7, 30
- O8, 9
- O13, 14, 21, 22, 27
- 28, 32, 37-39
- O15
- H.D74LS00P
- S.N74LS163AN
- M.C4044P
- 25C1775(E)
- 25C1775(B)
- T.C4598P
- S.N74LS00N
- 35K73(GR)
- 25C1815(BL)
- 25C460(B)

- D1, 5, 97
- :1SV54GC
- D2, 6, 15, 16, 18
- :1S2588
- D3, 7, 14, 19, 21-30, 31, 51, 55
- 46, 47, 52-56
- D4, 8, 10, 12, 20
- :1S1987
- D5, 11, 13, 17
- :1SV33A
- D6, 9-65
- :1N60

PLL UNIT (X50-1680-00)

**Note 1:**

K USA T Britain W Europe X Australia

**Note 2:**

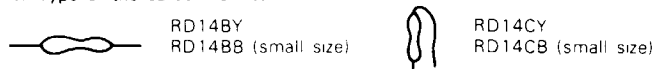
Only special type of resistors (example cement, metal film, etc) and capacitors (example electrolytic, tantalum, mylar, temp. coeff. capacitors) are detailed in the PARTS LIST. For the value of all common type components, refer to the schematic diagram of the P.C. board illustration. Resistors not otherwise detailed are carbon type (1/4W or 1/8W). Order carbon resistors and capacitors according to the following example.

A carbon resistor's part number is RD14BY 2E222J

A ceramic capacitor's number is CK45F1H103Z, CC45TH1H220J

**RESISTOR**

**1. Type of the carbon resistor**



**2. Wattage**

1W → 3A      3W → 3F      5W → 3H  
2W → 3D      4W → 3G

**3' = CC45 ○ ○ ...**

Ceramic capacitor (type I) temperature coeff. capacitor 1' 3'

1st word (Color)	C (Black)	L (Red)	P (Orange)	R (Yellow)	S (Green)	T (Blue)	U (Violet)
ppm/°C	0	-80	-150	-220	-330	-470	-750

**3 = CK45 ○**

Ceramic capacitor (type II) 3

Cord	B	D	E	F
Operating temperature °C	-30 +85	-30 +85	-30 +85	-10 +70

**6 = Tolerance**

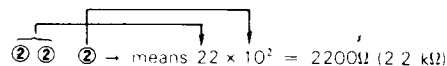
Cord	C	D	G	J	K	M	X	Z	P	No cord
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10 μF -10 ~ +50 Less than 4.7 μF -10 ~ +75

**Less than 10 pF**

Cord	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

Abbreviation		Abbreviation	
Cap.	Capacitor	ML	Mylar
C	Ceramic	S	Styren
E	Electrolytic	T	Tantalum
MC	Mica		

**3 Resistance value**



Example 221 → 220Ω      223 → 22 kΩ      225 → 2.2 MΩ  
222 → 2.2 kΩ      224 → 220 kΩ

**4. Tolerance**

J = ±5% (Gold)      K = ±10% (Silver)

**CAPACITORS**

**Type I**

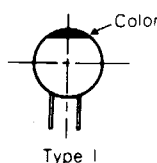
**Type II**

CC 45 TH 1H 220 J      CK 45 F 1H 103 Z  
1' 2 3' 4 5 6      1 2 3 4 5 6  
1 = Type ... ceramic, electrolytic, etc      4 = Voltage rating  
2 = Shape ... round, square, etc      5 = Value  
3 = Temp range      6 = Tolerance  
3' = Temp coefficient

Ex CC45TH = -470 ±60 ppm/°C

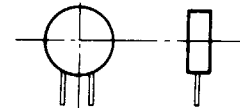
2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

**CC45**



Type I

**CK45**



Type II

**5 = Capacitor value**

Example 010 → 1 pF  
100 → 10 pF  
101 → 100 pF  
102 → 1000 pF = 0.001 μF  
103 → 0.01 μF

**TS-830 Semiconductor, Tube**

☆ New Parts

Item	Name	Parts No.	Re- marks
Diode	1N60	V11-0051-05	
	1S1007	V11-4160-66	
	1S1555	V11-0076-05	
	1S1587	V11-0370-05	
	1S2588	V11-0414-05	
	V03C	V11-0290-05 200V 1.3A	
	V06B	V11-0219-05 100V 1.1A	
Varistor	V06E	V11-0285-05 400V 1.1A	
	V08J	V11-0282-05 800V 1.1A	
	MV-13	V21-0004-05	
Vari-cap diode	1SV53A	V11-4161-36	
	1SV54GC	V11-4173-46	

Item	Name	Parts No.	Re- marks
Zener diode	WZ-061	V11-0243-05	
	WZ-071	V11-4160-86	
	WZ-090	V11-0240-05	
	XZ-055	V11-4105-50	
	XZ-060	V11-4101-20	
	XZ-090	V11-4167-06	
LED	SLP-144	V11-6172-76	
	TLR-205	V11-3162-96	
Display Tube	9-BT-12	V40-7760-86	
	6146B	V40-0138-00	
	12BY7A	V40-0114-00	☆
TR	2SA473 (Y)	V01-0473-06	
	2SA562 (Y)	V01-0032-05	
	2SA1015 (Y)	V01-1015-06	

# PARTS LIST

TS-830S, M

Item	Name	Parts No	Re- marks
	2SC460 (B)	V03-0079-05	
	2SC945 (Q)	V03-0293-05	
	2SC1515 (K)	V03-0450-05	
	2SC1675 (L)	V03-1675-10	
	2SC1775 (E)	V03-1775-06	
	2SC1815 (BL)	V03-1815-26	
	2SC1815 (GR)	V03-1815-16	
	2SC1815 (Y)	V03-1815-06	
	2SC1923 (O)	V03-1923-06	
	2SC1959 (Y)	V03-1959-06	
	2SC2240 (GR)	V03-2240-06	
FET	2SK19 (BL)	V09-0013-05	
	2SK19 (GR)	V09-0012-05	
	2SK19 (Y)	V09-0011-05	
	2SK30A (GR)	V09-0060-05	
	2SK30A (O)	V09-0056-05	
	2SK125	V09-0136-10	
	3SK73 (GR)	V09-1002-46	
IC	74LS163N	V30-1037-06	
	HA1368R	V30-1129-06	
	HD74LS00P	V30-0192-16	
	HD74LS163P	V30-1047-06	
	HD74LS90P	V30-1083-06	
	MC14510BCP	V30-1227-16	
	MC4044P	V30-0173-05	
	NJM78L05A	V30-1020-16	
	SN16913P	V30-1048-06	
	SN74LS00N	V30-0301-30	
	SN74LS163AN	V30-1154-06	
	SN74LS90N	V30-1005-26	
	TA7302P	V30-1134-06	
	TC4011BP	V30-0301-70	
	TC4029BP	V30-1051-06	
	TC4081BP	V30-0299-10	
	TC4518BP	V30-1039-06	
	TC5064BP	V30-1056-06	
	TC5066BP	V30-1057-06	
	TC5070P	V30-1172-06	

Ref. No	Parts No	Description	Re- marks
	B43-0654-04	Name plate (T)	☆
	B43-0656-04	Name plate (K)(W)(X)	☆
	B43-0657-04	Name plate M (W)	☆
	B46-0058-10	Warranty card (K)	
	B50-2738-00	Operating manual (K)	☆
	B50-2739-00	Operating manual (T)	☆
	B50-2740-00	Operating manual (W)(X)	☆
	B58-0625-00	Transmit warning paper	☆
	C01-0084-05	Variable cap VC2 Load	
	C03-0002-05	Trimmer TC1	
	C03-0060-05	Variable cap VC1 Final	
C1	CQ92M1H104K	ML 0.1μF 50V	
C6	C91-0016-05	C 3pF 3kV	
C7	C90-0186-05	C 0.001μF 3kV	
C8	C91-0079-05	C 0.01μF 2kV	
C9	C91-0401-05	C 100pF 3kV	
C10	C91-0017-05	C 390pF 3kV	
C12	CC45SL2H101J	C 100pF 500V	
C13	CC45SL2H271J	C 270pF 500V	
C14	CC45SL2H681J	C 680pF 500V	
C15	CC45SL2H121J	C 120pF 500V	
C16	CC45SL2H821J	C 820pF 500V	
C17	CC45SL2H102J	C 1000pF 500V	
C18.19	C90-0300-05	C 470pF AC150V	
C20	C91-0079-05	C 0.01μF 2kV	
C22.24	C90-0327-05	E 100μF 500V	
C26	C91-0467-05	C 22pF 3kV	☆
C30	CC45SL1H030C	C 3pF ±0.25pF	
C31	CC45SL2H101J	C 100PF 500V	
	D22-0402-05	Universal coupling. Band Load	
	D22-0405-04	Coupling. PLATE	
	D22-0407-04	Shaft coupling. φ6	☆
	D32-0051-04	Shaft stopper. M3 × 10	
	D40-0206-05	Fan ass'y	
	D40-0613-05	Vernier mechanism	☆
	E04-0152-05	UHF type receptacle. ANT	
	E06-0451-15	4P male socket. MIC	
	E06-0751-05	7P DIN socket. REMOTE	
	E06-0851-05	8P DIN socket. EXT VFO. XVTR	
	E07-0751-05	7P DIN plug	
	E08-0204-05	2P connector	
	E08-1202-05	12P connector (T)(W)(M)	
	E08-1207-05	12P plug	
	E09-0204-05	2P plug	
	E11-0404-05	3P Phone jack. Key. Phone	
	E11-0410-05	Phone jack. Ext SP	
	E12-0001-05	Phone plug. Ext. SP	
	E13-0205-05	2P Pin jack. IF OUT 1. 2	
	E20-0512-05	5P terminal	
	E22-0207-05	Lug plate	
	E22-0215-05	Lug plate	
	E23-0046-04	Square terminal	
	E29-0417-04	Gnd plate	
	E30-0181-05	AC cord (K)	
	E30-0185-05	AC cord (X)	
	E30-0585-05	AC cord (W)	
	E30-0602-05	AC cord (T)	
	E90-0004-15	Plate cap	
	E31-2086-05	Coax cable with plug	☆

## TS-830 GENERAL

M(W): TS-830M (W) type

Ref. No	Parts No	Description	Re- marks
	A01-0778-11	Case (Upper)	☆
	A01-0779-01	Case (Lower)	☆
	A20-2388-13	Panel	☆
	B03-0519-04	Switch mask (A)	☆
	B03-0520-04	Switch mask (B)	☆
	B05-0708-04	Speaker grill cloth	
	B09-0003-05	Coupling	
	B10-0630-04	Front glass (large)	☆
	B10-0631-04	Front glass (small)	☆
	B21-0501-04	Pointer Plate	☆
	B30-0817-15	Pilot lamp Meter 14V. 80mA	☆
	B31-0627-05	Meter	☆
	B42-1691-04	Adj seal	☆

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
	F05-4022-05	Fuse, 4A (W)(T)(X)	
	F05-6021-05	Fuse, 6A (K)	
	G01-0801-04	GND spring	
	G09-0405-05	D spring, Mode	
	G09-0410-05	D spring, RIT, Plate	
	H01-2692-14	Carton case (inside)(K)(W)(X)	☆
	H01-2695-14	Carton case (inside)(T)	☆
	H03-1763-14	Carton case (outside)	☆
	H10-1276-04	Accessory box	
	H10-2539-02	Packing fixture (F)	☆
	H10-2540-02	Packing fixture (R)	☆
	H20-0439-03	Protective cover	
	H25-0120-04	Protective bag	
	J02-0022-05	Foot (small)	
	J02-0049-14	Foot (large)	
	J13-0407-15	Fuse holder	☆
	J32-0159-04	Hex. boss	
	J32-1030-14	Round boss	
	J41-0006-05	Cord bush (K)	
	J41-0024-15	Cord bush (W)(T)(X)	
	J42-0409-04	Knob bush, +0.5 Shift	
	K01-0402-25	Handle	
	K21-0723-04	Knob, Band	
	K23-0738-04	Knob 1, Meter, AGC	☆
	K23-0739-04	Knob 2, COMP.GAIN.NB.DELAY	☆
	K23-0740-04	Knob 3, MIC.VBT.IF Shift, AF	☆
	K27-0406-04	Push knob, DH	
	K27-0421-04	Push knob	☆
	K29-0713-04	Push knob, 0.5 Shift	
	K29-0715-04	Knob, Mode	
	K29-0736-14	Knob 4, Notch,CAR,RF,Tone	☆
	K29-0737-04	Knob 5, Plate	☆
	K29-0738-04	Knob 6, RIT,Drive,Load	☆
	L01-8106-15	Power Trans (K)	☆
	L01-8116-15	Power trans (W)(T)(X)	☆
	L33-0259-05	Choke coil, 470μH, L5	
	L33-0635-05	Final choke, L2	☆
	L34-0560-25	Final coil A	
	L34-1004-05	Final coil B, 28MHz	
	L39-0046-05	PS coil, Plate	
	L40-1511-03	Ferri-inductor, 150μH	
	L40-6891-13	Choke coil, 6.8μH, L1	
	N08-0505-04	Ornamental screw, DH	☆
	N14-0517-05	Protective nut, BIAS	☆
	N99-0306-04	Hex. head screw, VFO	
VR1	R24-3402-05	Pot. VBT-Tone	☆
VR2	R24-9401-05	Pot. IF Shift-Notch	☆
VR3	R19-3407-05	Pot. AF-RF	☆
VR4	R01-2405-05	Pot. RIT/XIT, 5K (B)	☆
VR5	R01-6401-05	Pot. Delay, 250K (B)	☆
VR6	R01-3412-05	Pot. Vox Gain, 10K (C) S	☆
VR7	R01-3410-05	Pot. Processor, 10K (A)	☆
VR8	R01-0404-05	Pot. NB, 300Ω (B)	☆
VR9	R24-3401-05	Pot. MIC-CAR	☆
VR10~12	R01-3411-05	Pot. Bias, RFOUT, 10K (B)	☆
R22	RC05GF2H221J	Solid 220Ω 1/2W	

Ref. No.	Parts No.	Description	Re- marks
R24	RC05GF3A103K	Solid 10kΩ 1W	
R25,26	RC05GF2H474J	Solid 470kΩ 1/2W	
R28	RC05GF2H150J	Solid 15Ω 1/2W	
S1~6	S40-2419-05	Push switch PC board type	☆
S7	S40-2403-05	Push switch +0.5 SHIFT	
S8,9	S59-2020-05	Seesaw switch Power, Heater	
S11	S01-1423-05	Rotary switch AGC	
S12	S40-2403-05	Push switch DH	
S13	S01-1424-05	Rotary switch Meter	☆
S15,16	S40-2415-05	Push switch Lead type	
S17	S44-1407-05	Paddle switch STBY	☆
S18	S01-3405-15	Rotary switch Mode	☆
S20	S31-2007-05	Slide switch SG SW	
S22	S01-3406-05	Rotary switch FINAL	☆
S23	S31-2027-05	Slide switch AC Volt (W)(T)(X)	
RL1	S51-2409-05	Relay MX-2P	☆
	T03-0027-15	Speaker	
	X40-1170-00	VFO unit	☆
	X43-1370-00	Rectifier unit	☆
	X44-1360-00	RF unit	☆
	X48-1290-00	IF unit	☆
	X48-1290-61	IF unit M (W)	☆
	X49-1140-00	AF-AVR unit	☆
	X50-1680-00	PLL unit	☆
	X54-1540-00	Counter unit	☆
	X54-1610-60	AM unit M (W)	☆
	X56-1380-00	Final unit (S)	☆

Rectifier unit (X43-1370-00)

Ref. No.	Parts No.	Description	Re- marks
C5,6	CE02W2C330	E 33μF 160V	
	E23-0047-04	Square terminal	
	J31-0502-04	PC board collar	
	J42-0404-05	PC board bush	
L1	L40-1511-03	Ferri-inductor 150μH	
R1~4	RC05GF2H474J	Solid 470kΩ 1/2W	
R9	RC05GF2H334J	Solid 330kΩ 1/2W	
R10	RC05GF2H153J	Solid 15kΩ 1/2W	
R11	RS14AB3A471J	Metal film 470Ω 1W	
R13	RC05GF2H104J	Solid 100kΩ 1/2W	
R14	RC05GF2H102J	Solid 1kΩ 1/2W	
R15,16	RC05GF2H563J	Solid 56kΩ 1/2W	
RL1	S51-1404-05	Relay G2E	

RF unit (X44-1360-00)

Ref. No.	Parts No.	Description	Re- marks
C1	CQ92M1H182K	ML 0.0018μF 50V	
C4	CQ92M1H152K	ML 0.0015μF 50V	
C6	CC45R1H101J	C 100pF	
C7	CQ09S1H122J	S 0.0012μF 50V	