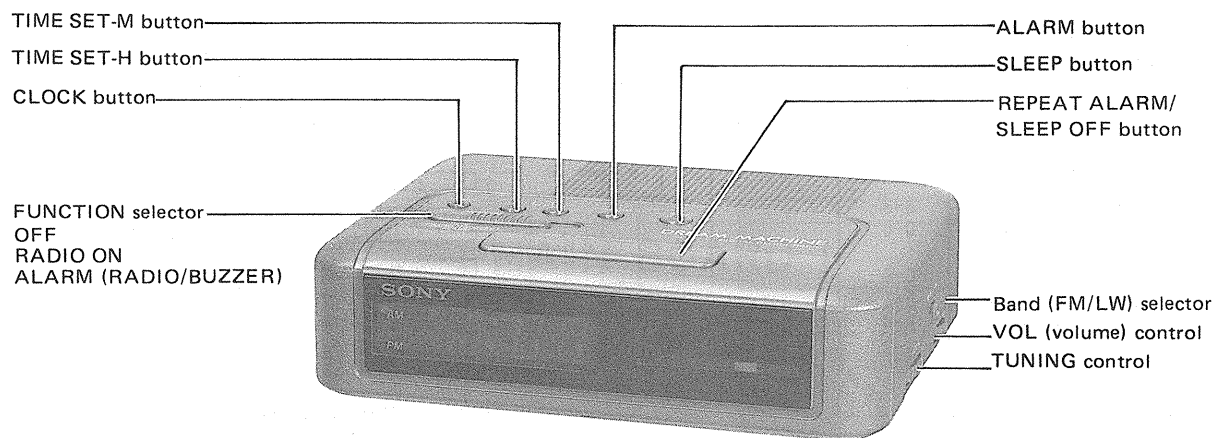


# ICF-C240L

## SERVICE MANUAL

French Model



### SPECIFICATIONS



Frequency range	FM: 87.6–107.5MHz LW: 153–255 kHz
Antenna	FM: AC power cord antenna LW: Built-in ferrite bar antenna
Speaker	Approx. 6.6cm (2 <sup>5</sup> / <sub>8</sub> inches) dia.
Power output	100mW (at 10% harmonic distortion)
Power requirement	220V AC, 50Hz For the power backup function: 9V DC, one 6F22 battery
Battery life	Approx. 80 hours, using Sony battery S-006P (U)
Dimensions	Approx. 181.5x59x144mm (w/h/d) (7 <sup>1</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>4</sub> inches) incl. projecting ports and controls
Weight	Approx. 570g (1 lb 4oz) not incl. battery

Design and specifications subject to change without notice.

### FEATURES

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- REPEAT ALARM bar, operable with a feather-light touch, offers two functions: snooze alarm and sleep timer turn off.
- Power back-up function to keep the clock operating during a power interruption, using an optional 6F22 battery.

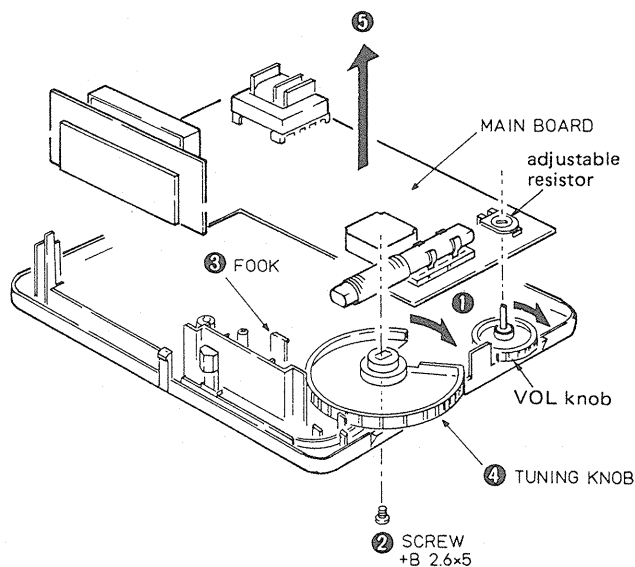
### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### MAIN BOARD REMOVAL

- ① Turn TUNING knob fully clockwise.
- ② Remove screw (+B 2.6x5)
- ③ Release fook.
- ④ Remove main board pressing down TUNING knob.

**Note:** When installing main board, align shaft of VOL knob with a hole of adjustable resistor.

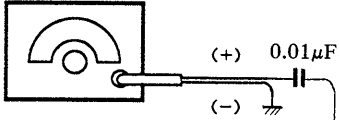


FM/LW DIGITAL CLOCK RADIO  
**SONY**<sup>®</sup>

# SECTION 1 ELECTRICAL ADJUSTMENTS

**FM Section**

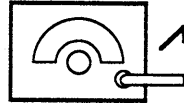
FM rf signal generator



±22.5 kHz frequency deviation by 400 Hz signal  
output level : as low as possible

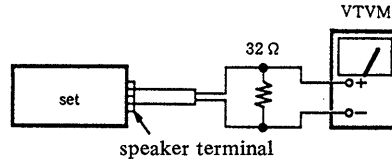
**LW Section**

AM rf signal generator



400Hz, 30% AM modulation  
Output level : as low as possible

Put the lead-wire antenna close to the set.



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	87.3 MHz
CT4	108.3 MHz

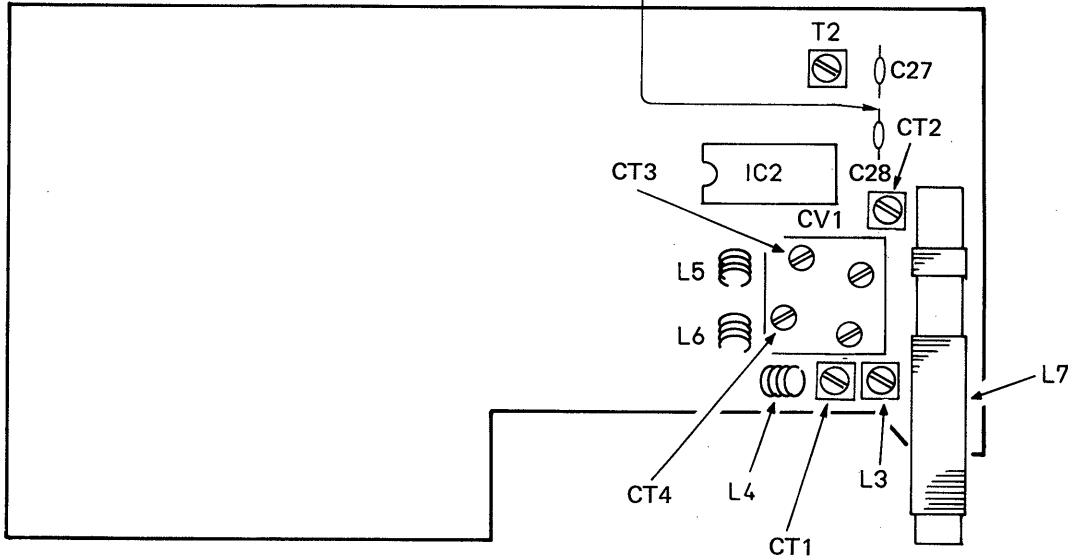
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5, L6	87.3 MHz
CT3	108.3 MHz

LW IF ALIGNMENT	
Adjust for a maximum reading on VTVM.	
T2	
455 kHz	

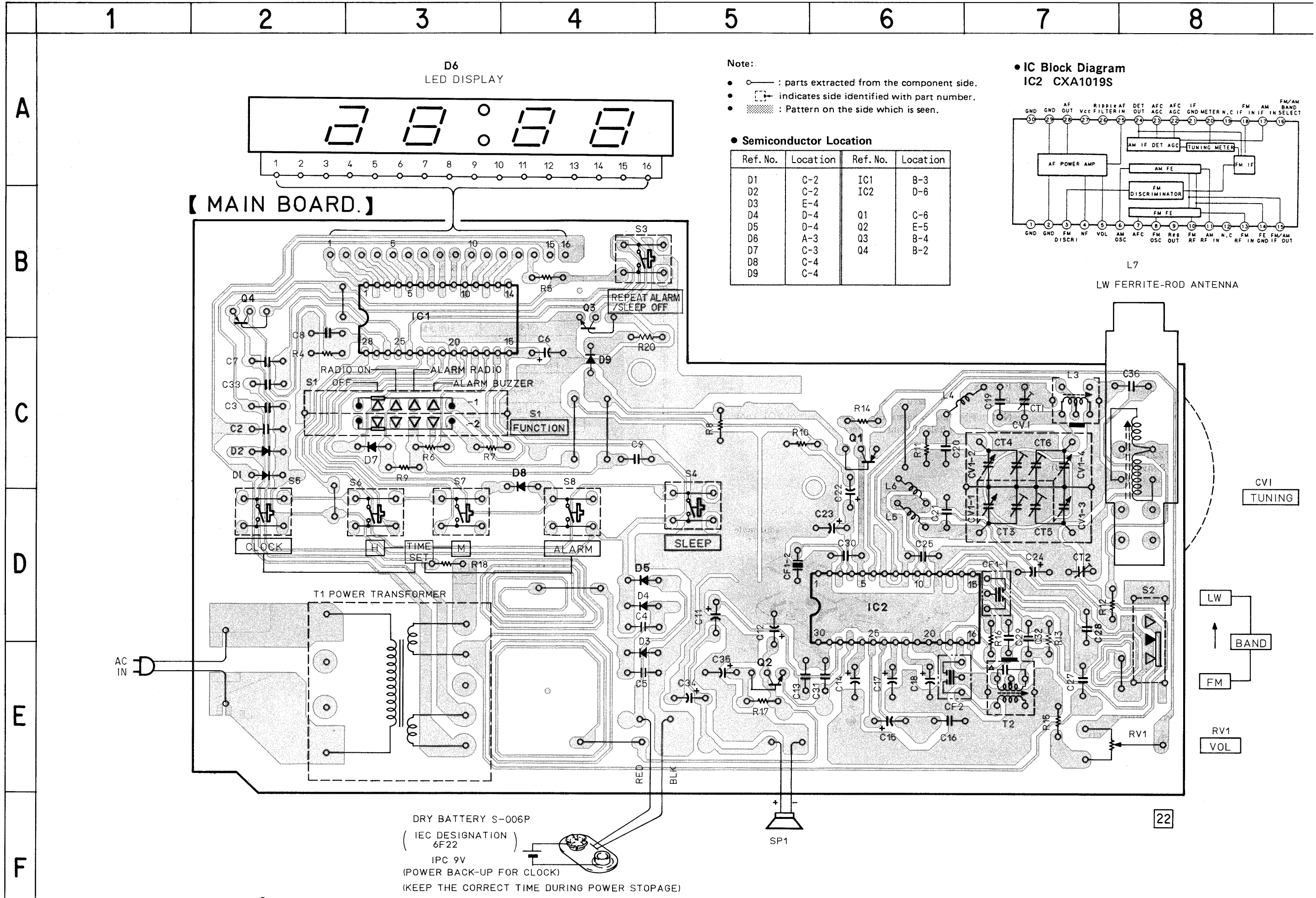
LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	145 kHz
CT1	265 kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L7	160 kHz
CT2	240 kHz

**【MAIN BOARD】 - component side -**

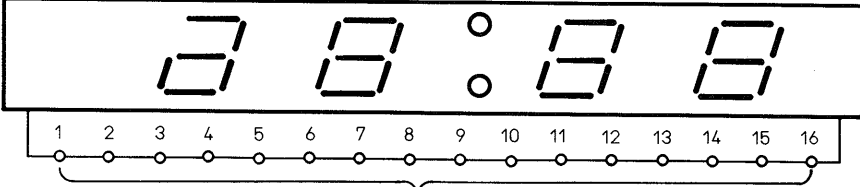


**SECTION 2  
DIAGRAMS**



**[ MAIN BOARD. ]**

**D6  
LED DISPLAY**



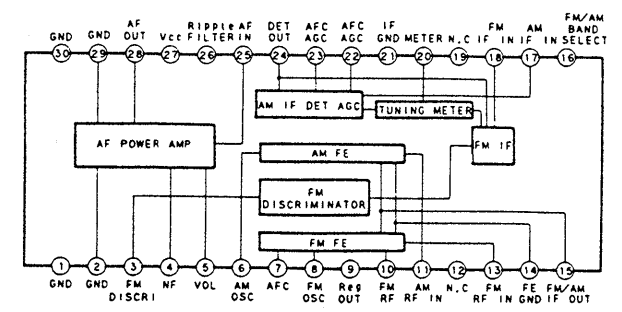
**Note:**

- : parts extracted from the component side.
- : indicates side identified with part number.
- ▨ : Pattern on the side which is seen.

**• Semiconductor Location**

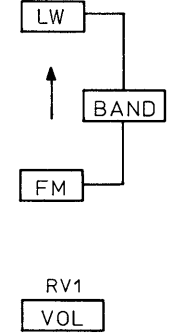
Ref. No.	Location	Ref. No.	Location
D1	C-2	IC1	B-3
D2	C-2	IC2	D-6
D3	E-4		
D4	D-4	Q1	C-6
D5	D-4	Q2	E-5
D6	A-3	Q3	B-4
D7	C-3	Q4	B-2
D8	C-4		
D9	C-4		

**• IC Block Diagram  
IC2 CXA1019S**



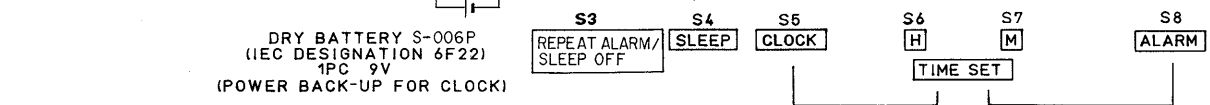
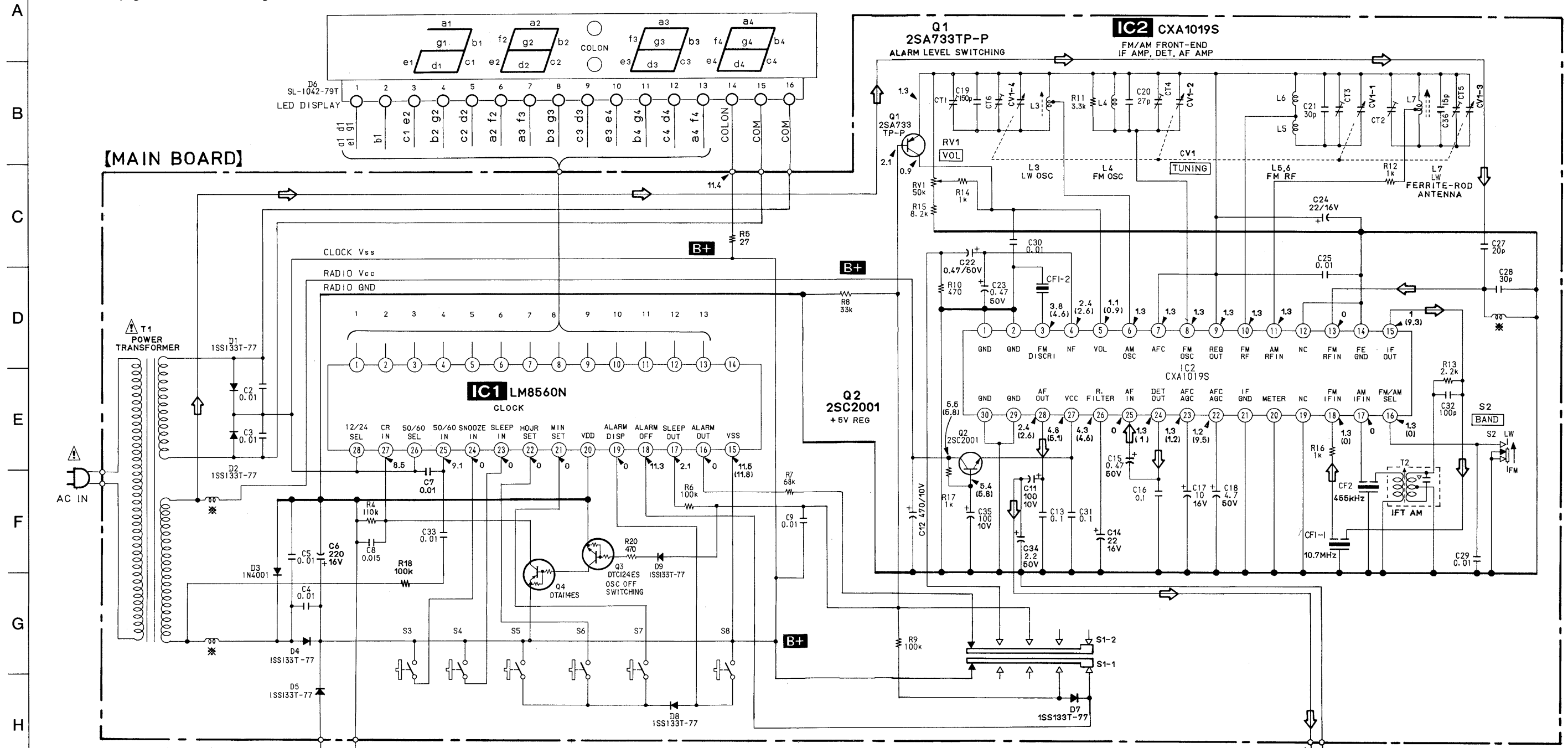
**L7  
LW FERRITE-ROD ANTENNA**

**CV1  
TUNING**

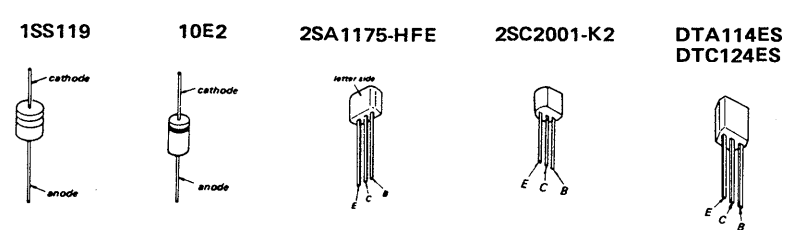


DRY BATTERY S-006P  
( IEC DESIGNATION )  
6F22  
IPC 9V  
(POWER BACK-UP FOR CLOCK)  
(KEEP THE CORRECT TIME DURING POWER STOPAGE)

2-2. SCHEMATIC DIAGRAM  
 • See page 4 for IC2 block diagram.



• Semiconductor Lead Layouts



**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

- \* : Printed pattern functions as a kind of coil.
- All capacitors are in  $\mu F$  unless otherwise noted. pF:  $\mu F$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4} W$  or less unless otherwise specified.
- $\Delta$  : internal component.
- **B+** : B+ lines.
- Voltage and waveforms are dc with respect to ground
- under detuned conditions. no mark : FM ( ) : LW
- Voltages are taken with a VOM. (input impedance 10 M $\Omega$ ) Voltage variations may be noted due to normal production tolerances.
- Signal path.  $\Rightarrow$  : FM

## SECTION 3 EXPLODED VIEWS

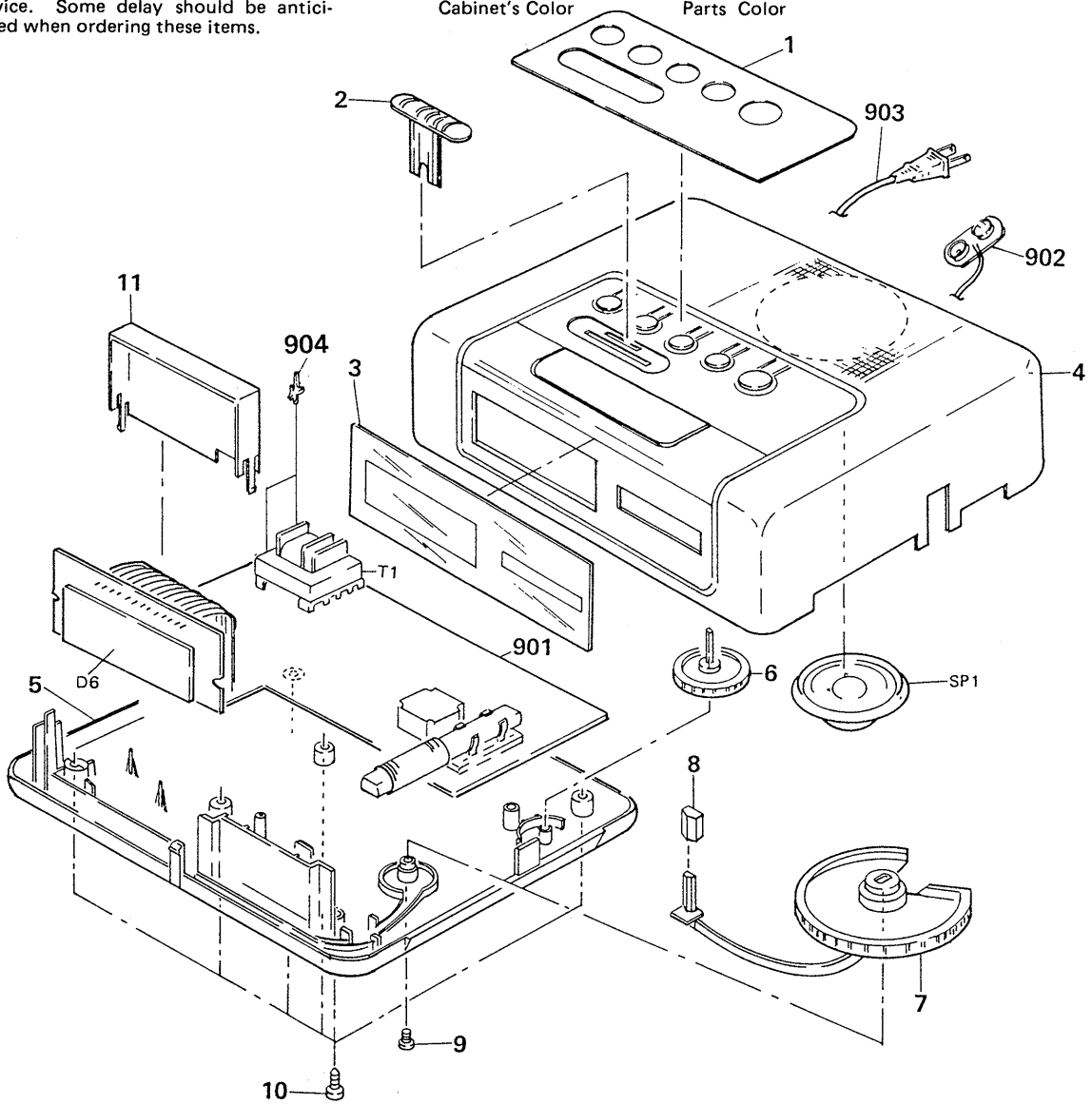
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:

(RED) ... KNOB, BALANCE (WHITE)  
 ↑ Cabinet's Color                      ↑ Parts Color

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-902-093-51	(WHITE)...PLATE, ORNAMENTAL		6	3-902-091-01	(GRAY, BLACK)...KNOB (VOL)(GRAY)	
	3-902-093-61	(GRAY)...PLATE, ORNAMENTAL			3-902-091-11	(WHITE).....KNOB (VOL)(LIGHT GRAY)	
	3-902-093-71	(BLACK)...PLATE, ORNAMENTAL			7	3-902-474-01	(GRAY, BLACK)...KNOB (TUNING)(GRAY)
2	3-902-092-01	(WHITE)...KNOB (FUNCTION)		3-902-474-11		(WHITE).....KNOB (TUNING)(LIGHT GRAY)	
	3-902-092-21	(GRAY)...KNOB (FUNCTION)		8	*3-902-463-01	CAP (POINTER)	
	3-902-092-32	(BLACK)...KNOB (FUNCTION)			9	7-621-775-20	SCREW +B 2.6X5
3	3-902-090-61	SCALE, DIAL		10	7-685-648-79	SCREW +BTP 3X12 TYPE2 N-S	
4	3-902-459-41	(WHITE)...CABINET (UPPER)		11	3-902-094-02	STOPPER (REPEAT ALARM)	
	3-902-459-51	(GRAY)...CABINET (UPPER)		901	*A-3615-359-A	MOUNTED PCB, MAIN	
	3-902-459-61	(BLACK)...CABINET (UPPER)			902	1-535-804-21	SNAP, BATTERY
5	3-902-458-41	(WHITE)...CABINET (LOWER)		903	1-555-795-00	CORD, POWER	
	3-902-458-51	(GRAY)...CABINET (LOWER)		904	1-535-476-11	TERMINAL	
	3-902-458-61	(BLACK)...CABINET (LOWER)		D6	1-808-344-11	DIODE SL-1042-79T	
				SP1	1-503-082-00	SPEAKER	
				T1	1-449-940-11	TRANSFORMER, POWER	

## SECTION 4 ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**

MF:  $\mu$ F, PF:  $\mu$ PF.

**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**

In each case, U:  $\mu$ , for example:

UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,

UPC...:  $\mu$ PC, UPD...:  $\mu$ PD...

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-3615-359-A	MOUNTED PCB, MAIN
902	1-535-804-21	SNAP, BATTERY
903	$\Delta$ 1-555-795-00	CORD, POWER
904	1-535-476-11	TERMINAL
C2	1-101-004-00	CERAMIC 0.01MF 50V
C3	1-101-004-00	CERAMIC 0.01MF 50V
C4	1-101-004-00	CERAMIC 0.01MF 50V
C5	1-101-004-00	CERAMIC 0.01MF 50V
C6	1-124-120-11	ELECT 220MF 20% 16V
C7	1-101-004-00	CERAMIC 0.01MF 50V
C8	1-130-485-00	MYLAR 0.015MF 5% 50V
C9	1-161-379-00	CERAMIC 0.01MF 30% 16V
C11	1-126-101-11	ELECT 100MF 20% 10V
C12	1-124-472-11	ELECT 470MF 20% 10V
C13	1-162-851-11	CERAMIC 0.1MF 20% 16V
C14	1-123-330-00	ELECT 22MF 20% 16V
C15	1-123-379-00	ELECT 0.47MF 20% 50V
C16	1-162-851-11	CERAMIC 0.1MF 20% 16V
C17	1-123-356-00	ELECT 10MF 20% 16V
C18	1-123-369-00	ELECT 4.7MF 20% 50V
C19	1-101-361-00	CERAMIC 150PF 5% 50V
C20	1-102-961-00	CERAMIC 27PF 5% 50V
C21	1-102-962-00	CERAMIC 30PF 5% 50V
C22	1-123-379-00	ELECT 0.47MF 20% 50V
C23	1-123-379-00	ELECT 0.47MF 20% 50V
C24	1-123-330-00	ELECT 22MF 20% 16V
C25	1-101-004-00	CERAMIC 0.01MF 50V
C27	1-102-958-00	CERAMIC 20PF 5% 50V
C28	1-102-962-00	CERAMIC 30PF 5% 50V
C29	1-101-004-00	CERAMIC 0.01MF 50V
C30	1-101-004-00	CERAMIC 0.01MF 50V
C31	1-162-851-11	CERAMIC 0.1MF 20% 16V
C32	1-102-973-00	CERAMIC 100PF 5% 50V
C33	1-101-004-00	CERAMIC 0.01MF 50V
C34	1-123-381-00	ELECT 2.2MF 20% 50V
C35	1-126-101-11	ELECT 100MF 20% 10V
C36	1-102-951-00	CERAMIC 15PF 5% 50V
CF1	1-567-538-71	FILTER, CERAMIC
CF2	1-578-677-11	FILTER, CRYSTAL
CT1	1-141-245-00	CAP, VAR, TRIMMER
CT2	1-141-245-00	CAP, VAR, TRIMMER
CT3-6}	1-151-614-11	CAP, VARIABLE
CV1		
D1	8-719-911-19	DIODE 1SS119
D2	8-719-911-19	DIODE 1SS119
D3	8-719-200-02	DIODE 10E2
D4	8-719-911-19	DIODE 1SS119
D5	8-719-911-19	DIODE 1SS119
D6	1-808-344-11	DIODE SL-1042-79T
D7	8-719-911-19	DIODE 1SS119

Ref.No.	Part No.	Description
D8	8-719-911-19	DIODE 1SS119
D9	8-719-911-19	DIODE 1SS119
IC1	8-759-821-46	IC LM8560N
IC2	8-752-035-29	IC CXA1019S
L3	1-406-150-11	COIL, LW OSC
L4	*1-405-962-00	COIL, FM OSC
L5	*1-422-291-11	COIL, AIR-CORE (FM RF)
L6	*1-422-291-11	COIL, AIR-CORE (FM RF)
L7	1-402-404-11	ANTENNA, FERRITE-ROD (LW)
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q2	8-729-100-13	TRANSISTOR 2SC2001-K2
Q3	8-729-900-36	TRANSISTOR DTC124ES
Q4	8-729-900-61	TRANSISTOR DTA114ES
R4	1-247-880-11	CARBON 110K 5% 1/4W
R5	1-249-398-11	CARBON 27 5% 1/4W
R6	1-249-441-11	CARBON 100K 5% 1/4W
R7	1-249-439-11	CARBON 68K 5% 1/4W
R8	1-249-435-11	CARBON 33K 5% 1/4W
R9	1-249-441-11	CARBON 100K 5% 1/4W
R10	1-249-413-11	CARBON 470 5% 1/4W
R11	1-249-423-11	CARBON 3.3K 5% 1/4W
R12	1-249-417-11	CARBON 1K 5% 1/4W
R13	1-249-421-11	CARBON 2.2K 5% 1/4W
R14	1-249-417-11	CARBON 1K 5% 1/4W
R15	1-249-428-11	CARBON 8.2K 5% 1/4W
R16	1-249-417-11	CARBON 1K 5% 1/4W
R17	1-249-417-11	CARBON 1K 5% 1/4W
R18	1-249-441-11	CARBON 100K 5% 1/4W
R20	1-249-413-11	CARBON 470 5% 1/4W
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)
S1	1-572-023-11	SWITCH, SLIDE (FUNCTION)
S2	1-552-370-31	SWITCH, SLIDE (BAND)
S3	1-553-856-00	SWITCH, KEY BOARD (REPEAT ALARM/SLEEP OFF)
S4	1-553-856-00	SWITCH, KEY BOARD (SLEEP)
S5	1-553-856-00	SWITCH, KEY BOARD (CLOCK)
S6	1-553-856-00	SWITCH, KEY BOARD (TIME SET-H)
S7	1-553-856-00	SWITCH, KEY BOARD (TIME SET-M)
S8	1-553-856-00	SWITCH, KEY BOARD (ALARM)
SP1	1-503-082-00	SPEAKER
T1	$\Delta$ 1-449-940-11	TRANSFORMER, POWER
T2	1-404-902-11	TRANSFORMER, IF

**ACCESSORY & PACKING MATERIAL**

- 3-751-271-11 MANUAL, INSTRUCTION
- \*3-902-430-01 INDIVIDUAL CARTON
- \*3-902-464-01 CUSHION