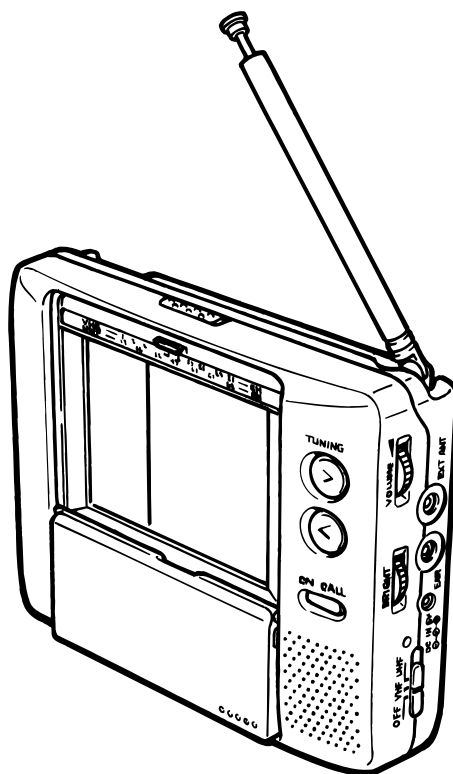


SERVICE MANUAL & PARTS LIST (without price)

EV-600B (NTSC)
(KX-613)

SEPT. 1997



INDEX

CASIO®

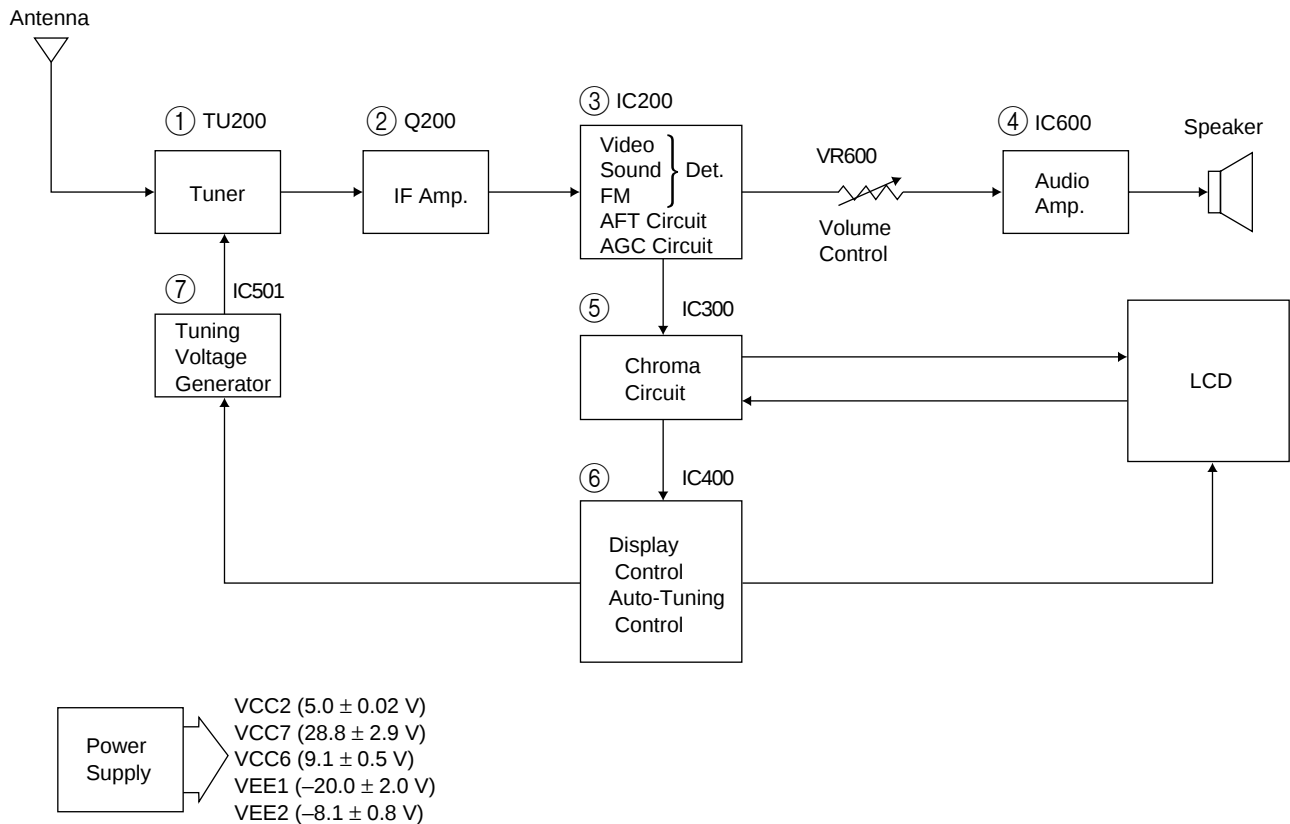
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SPECIFICATIONS

Item	Specification
1. Reception channels	VHF: 2 ~ 13 ch UHF: 14 ~ 69 ch
2. Power voltage	DC 6.0 V
3. Power consumption	Approx. 3.8 W
4. Current consumption	Approx. 630 mA
5. Battery life (with alkaline batteries)	Approx. 2.0 hours
6. Power supply	Batteries : 3 AA size batteries Car adaptor : CA-K65 AC adaptor : AD-K64
7. Connection terminals	Earphone jack : 3.5ø mini External power jack : 6.0 V DC IN External antenna jack : 3.5ø mini Audio / Video jack : 3.5ø
8. Screen size	3.0 inches
9. No. of Picture element	75,816 (234 × 324) dots
10. Dimensions	125.0 (W) × 32.0 (D) × 101.2 (H) mm
11. Weight	290 g excepting batteries
12. Options	AC adaptor : AD-K65,64 Car adaptor : CA-K65 RF connector : CF-13 Antenna matching device : AS-35S AV cord : AV-C1

BLOCK DIAGRAM



- ① — Color tuner: TU200 TEPU5-02
Selects a desired radio wave and changes it to the video IF signal.
- ② — Video IF amp.: Q200 2SC4238
Amplifies the video IF signal output from tuner TU200 by 10 times (20 dB).
- ③ — Video det./Sound det./FM det./AFT/AGC: IC200 M51348AVP
Eliminates the carrier wave in the video IF signal, and picks up the video signal and the sound IF signal. Also, the sound signal is picked up from the sound IF signal by FM detection.
- ④ — Audio amp.: IC600 NJM2070M
Sound amplification.
- ⑤ — Chroma circuit: IC300 IR3P90Y
Generates the tricolor (red, green, and blue) from the video signal.
- ⑥ — Display control/Auto-tuning control: IC400 LZ93BA5
Controls the display.
- ⑦ — Tuning voltage generator: IC501 BA10358F
Generates the tuning voltage with the tuning pulse output from ⑥.

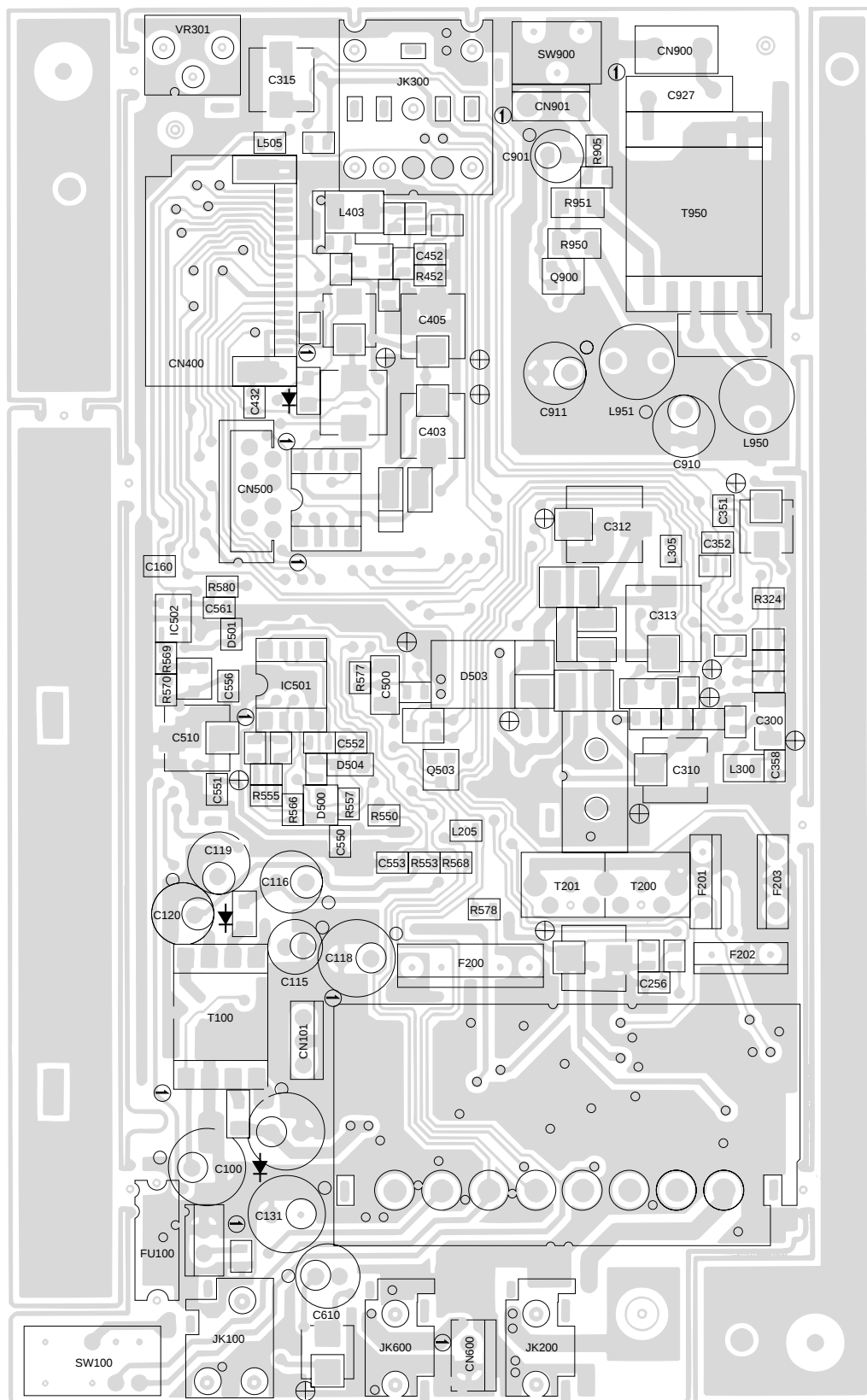
TROUBLESHOOTING

Symptom	Cause	Solution
No power supply	Defective power switch (SW100).	Replace.
No picture and no sound	Defective DC-DC converter (T100).	Replace.
	Defective tuner (TU200).	Replace.
	Defective Q200.	Replace.
	Defective IC200.	Replace.
	Defective IC300.	Replace.
	Defective IC400.	Replace.
	Defective IC501.	Replace.
Picture OK but no sound	Defective IC200.	Replace.
	Defective IC600.	Replace.
	Defective phone jack (JK600).	Replace.
No reception of VHF or UHF	Defective tuner (TU200).	Replace.
	Defective IC501.	Replace.
	Defective power switch (SW100).	Replace.

PRINTED CIRCUIT BOARD

TOP VIEW

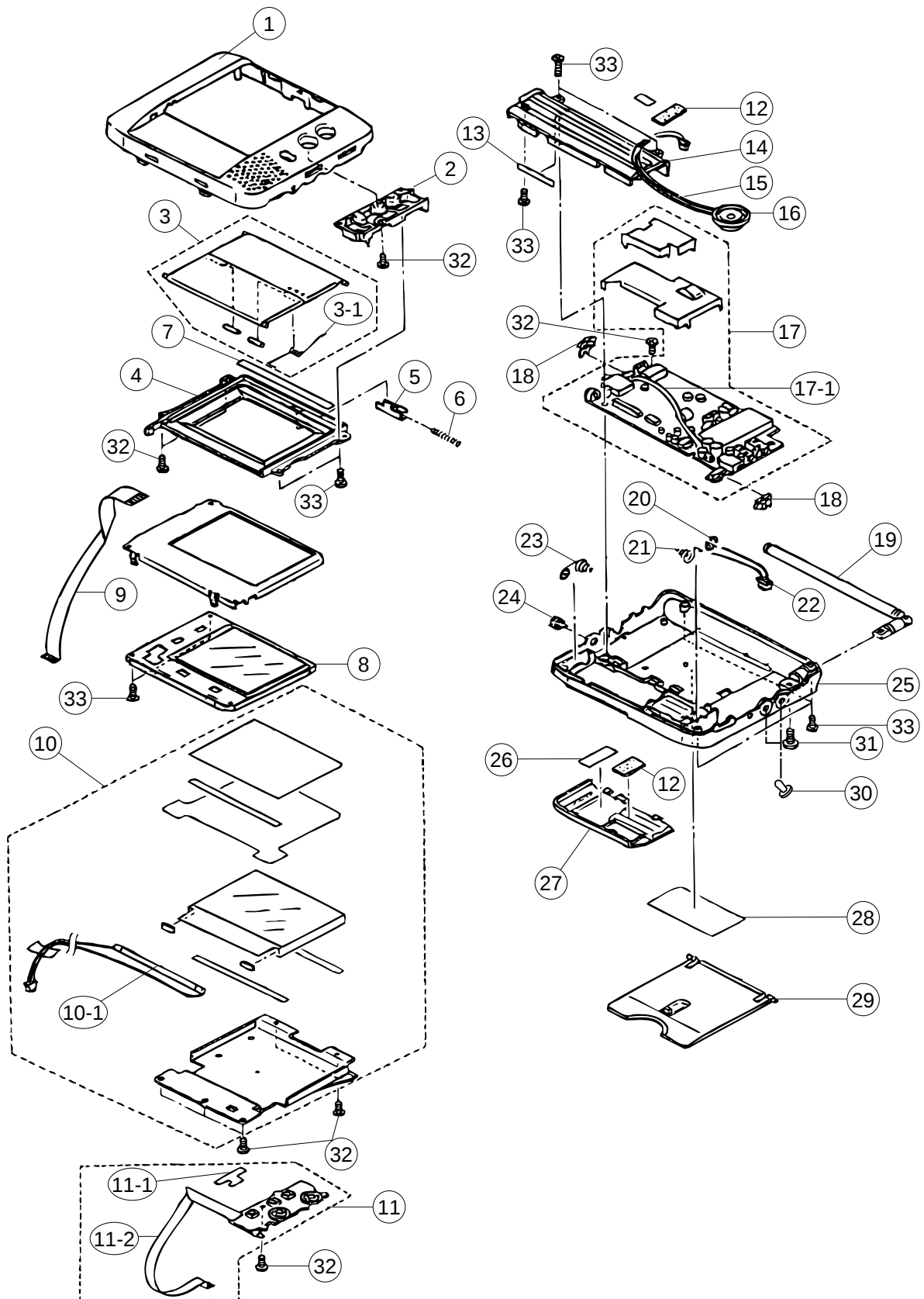
Linear



Linear



EXPLODED VIEW



PARTS LIST

LINEAR PCB

Item	Code No.	Parts Name	Specification	Applicable	Q	R
Diodes						
D105	2390 2450	DIODE/CHIP	SC016-2-TE12RA	EV-600B Common	1	C
D110, D111, D113	7101 1194	DIODE/CHIP	MA111-(TX)	EV-600B Common	3	C
D112	2390 1379	DIODE/SCHOTTKY	MA729-(TX)	EV-600B Common	1	C
D114, D406, D500	2390 1470	DIODE/CHIP	MA143A-(TX)	EV-600B Common	3	C
D115	2360 2303	DIODE/ZENER	MA8091-M(TX)	EV-600B Common	1	C
D200, D405, D501	2390 0455	DIODE/CHIP	MA142K-(TX)	EV-600B Common	3	C
D400	2360 1876	DIODE/ZENER	MA8100-M(TX)	EV-600B Common	1	C
D402	2390 1358	DIODE/ZENER	MA329-(TX)	EV-600B Common	1	C
D403	2360 2296	DIODE/ZENER	MA8056-M(TX)	EV-600B Common	1	C
D502	2390 1183	DIODE/CHIP	MA142WK-(TX)	EV-600B Common	1	C
D503	2390 1477	DIODE/CHIP	MA142WA-(TX)	EV-600B Common	1	C
Fuse						
FU100	3632 0322	FUSE	NT1-1A	EV-600B Common	1	B
ICs						
IC100	2114 3150	IC	MB3776APNF-EF	EV-600B Common	1	C
IC200	2114 2471	IC/LINEAR	M51348AVP-T1	EV-600B Common	1	C
IC300	2114 3633	IC/LINEAR	IR3P90Y-1	EV-600B Common	1	C
IC400	2114 3367	IC	LZ93BA5-1	EV-600B Common	1	C
IC402	2114 5766	OP AMP	NJM3414AM-T1	EV-600B Common	1	C
IC403	2259 2733	TRANSISTOR ARRAY	FMC1A-T148	EV-600B Common	1	C
IC404	2114 2674	OP AMP	NJM2107F-TE1	EV-600B Common	1	C
IC500	2114 3374	IC	SED3950FOC	EV-600B Common	1	C
IC501	2116 0119	OP AMP	BA10358F-T1	EV-600B Common	1	C
IC502	2105 0777	IC/L-MOS	TC4S81F-TE85L	EV-600B Common	1	C
IC600	2114 2464	IC/LINEAR	NJM2070M-T1	EV-600B Common	1	C
IC900	2114 1736	IC	BA10393F-T1	EV-600B Common	1	C
Jacks						
JK100	3501 8281	JACK	HEC0811-010010	EV-600B Common	1	C
JK200, JK600	3501 5439	JACK	HSJ1456-01-210	EV-600B Common	2	C
JK300	3501 3773	JACK	HSJ6063-01-410	EV-600B Common	1	C
Transistors						
Q103, Q950, Q951	2253 0308	TRANSISTOR/CHIP	2SD1119-R(TX)	EV-600B Common	3	C
Q200	2252 0707	TRANSISTOR/CHIP	2SC4238-(TX)	EV-600B Common	1	C
Q300, Q500, Q504	2252 0637	TRANSISTOR/CHIP	2SC4081-T106R	EV-600B Common	3	C
Q400	2253 0665	TRANSISTOR/CHIP	2SC4182-T2T33,34	EV-600B Common	1	C
Q501	7911 0126	TRANSISTOR/DIGITAL	DTC144EUA-T106	EV-600B Common	1	C
Q502, Q503	2259 2625	TRANSISTOR/DIGITAL	DTC144TUA-T106	EV-600B Common	2	C
Q900	7911 3045	TRANSISTOR/DIGITAL	DTA114YUA-T106	EV-600B Common	1	C
Switches						
SW100	3412 0798	SWITCH/SLIDE	ESD-11H231	EV-600B Common	1	C
SW900	3412 0840	SWITCH/SLIDE	ESD-11H121	EV-600B Common	1	C
Converter						
T100	3701 0637	DC-DC CONVERTER	CEE98-04	EV-600B Common	1	B
T950	3012 1078	INVERTER TRANS	ETJ-11K010AM	EV-600B Common	1	B
Tuner						
TU200	1013 5511	TUNER	TEPU5-02	EV-600B Common	1	C
Variable resistor						
VR301	2775 0077	RESISTOR/SEMI-FIXED	H0614D-47KB	EV-600B Common	1	C

Notes: Q – Quantity used per unit
R – Rank

KEY PCB

Item	Code No.	Parts Name	Specification	Applicable	Q	R
LED						
D120	2370 1260	LED	SLC-22VR3F	EV-600B Common	1	C
Switch						
SW300,SW301,SW302	3412 1029	SWITCH	SKHHAL	EV-600B Common	3	C
Variable resistors						
VR303	2765 0623	VOLUME	RK09H11T-20KB	EV-600B Common	1	C
VR600	2765 1582	VOLUME	RK09H11T-100KB	EV-600B Common	1	C

Notes: Q – Quantity used per unit
R – Rank

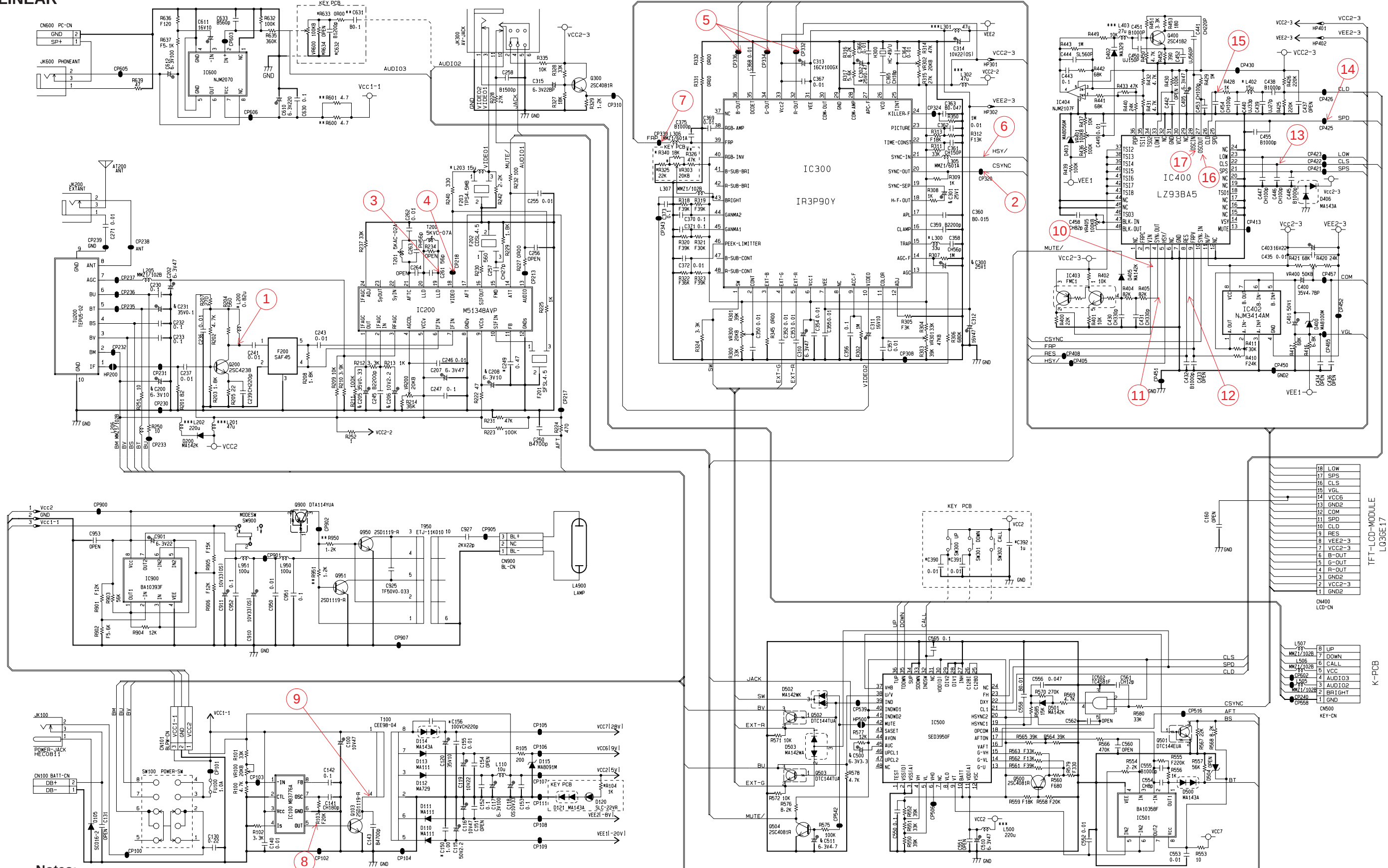
COMPONENT

Item	Code No.	Parts Name	Specification	Applicable	Q	R
1	6611 5990	CASE/UPPER	K110721-2	EV-600B Common	1	X
2	6608 8860	BUTTON/TUNING	K311429-1	EV-600B Common	1	X
3	6612 4662	HOOD ASS'Y	K311459*3	EV-600B Common	1	X
3-1	6608 8790	SPRING	K411897-1	EV-600B Common	1	X
4	6608 8810	FRAME/DISPLAY	K211097-1	EV-600B Common	1	X
5	6608 8830	KNOB/LOCK	K311427-1	EV-600B Common	1	X
6	6608 8840	SPRING	K411896-1	EV-600B Common	1	X
7	6612 4690	LABEL/CHANNEL	K411906-2	EV-600B Common	1	X
8	2725 0945	LCD	LQ3GE17	EV-600B Common	1	C
9	6608 8880	CABLE/FLAT	K411903-1	EV-600B Common	1	X
10	6611 5817	BL ASS'Y	K240581*1	EV-600B Common	1	B
10-1	3851 1554	LAMP/FLUORESCENT	K-CA613-2CAS	EV-600B Common	1	A
11	6612 4661	PCB ASS'Y/KEY	K311458A*2	EV-600B Common	1	X
11-1	6607 5530	INSULATION SEAL	K411407-1	EV-600B Common	1	X
11-2	6608 8900	CABLE/FLAT	K411902-1	EV-600B Common	1	X
12	6608 8970	CUSHION	K411959-1	EV-600B Common	2	X
13	6612 4711	LABEL/DIRECTION	K412056A-2	EV-600B Common	1	X
14	6608 8960	HOLDER/BATTERY	K211098-1	EV-600B Common	1	X
15	6608 8890	WIRE/SPEAKER	K411901-1	EV-600B Common	1	X
16	3831 0847	SPEAKER	23-4F-03	EV-600B Common	1	C
17	6612 4657	PCB ASS'Y/LINEAR	K311457A*2	EV-600B Common	1	B
17-1	6608 8980	CABLE/FLAT	K411924-1	EV-600B Common	1	X
18	6608 8650	KNOB/SWITCH	K311428-1	EV-600B Common	2	X
19	3851 1547	ANTENNA/ROD	YH830106	EV-600B Common	1	C
20	6608 8940	SPRING/BATTERY	K411905-1	EV-600B Common	1	X
21	6608 8930	SPRING/BATTERY	K411904-1	EV-600B Common	1	X
22	6608 8950	WIRE/BATTERY	K411900-1	EV-600B Common	1	X
23	6020 7658	SPRING/BATTERY	P408A-1	EV-600B Common	1	X
24	6603 8924	KNOB/C	K3741D-1	EV-600B Common	1	X
25	6612 4680	CASE/LOWER	K110722-3	EV-600B Common	1	X
26	6608 0920	LABEL/CAUTION	K411564-2	EV-600B Common	1	X
27	6611 5840	COVER/BATTERY	K211101-2	EV-600B Common	1	X
28	6612 4670	PLATE/RATING	K411907-3	EV-600B Common	1	X
29	6611 5820	STAND	K211102-2	EV-600B Common	1	C
30	6609 9680	CAP/JACK	K340237-1	EV-600B Common	2	X
31	6605 0010	SCREW	K410096-1	EV-600B Common	1	C
32	5860 0420	SCREW	BT3 1.7X4 Ni	EV-600B Common	10	C
33	5860 1022	SCREW	BT3 1.7X6 Bk	EV-600B Common	10	C

Notes: Q – Quantity used per unit
R – Rank

SCHEMATIC DIAGRAMS

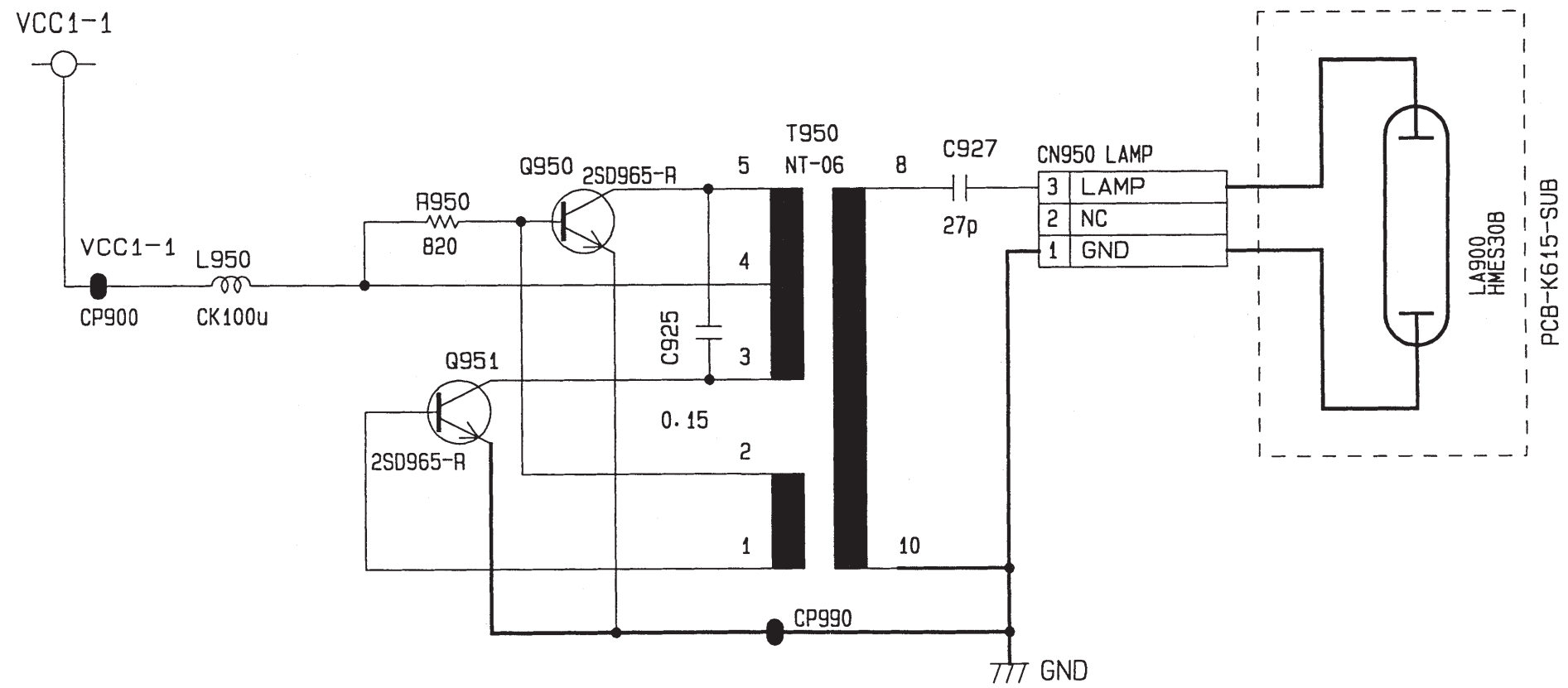
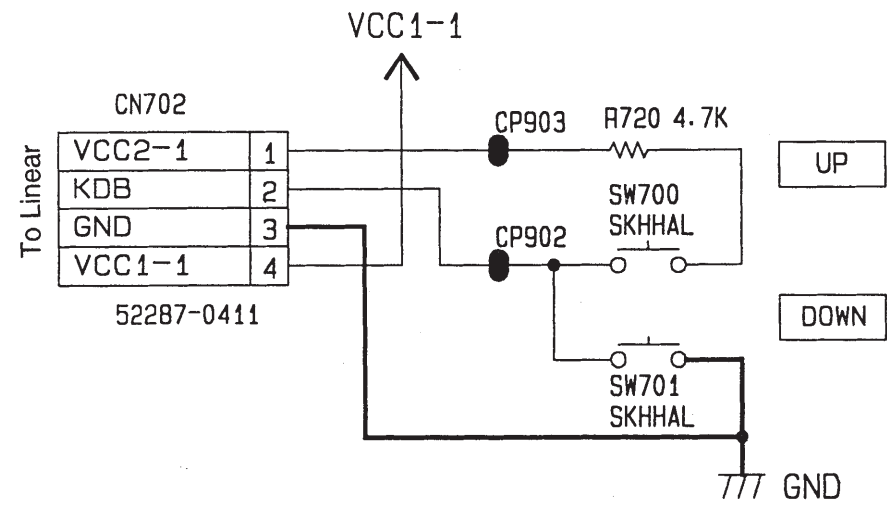
LINEAR



Notes:

1. All resistance values are indicated in "ohms" (k=10³ ohms, M=10⁶ ohms).
2. All capacitance values are indicated in "μF" (p=10⁻⁶ μF).
3. All inductance values are indicated in "μH".

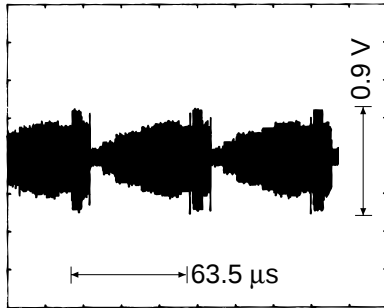
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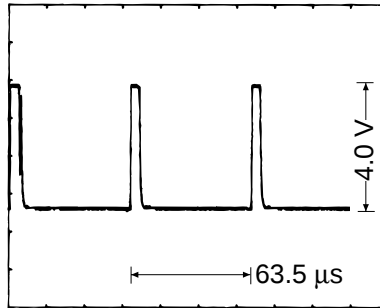
Notes:

1. All resistance values are indicated in "ohms" ($k=10^3$ ohms, $M=10^6$ ohms).
2. All capacitance values are indicated in " μF " ($p=10^{-6}$ μF).
3. All inductance values are indicated in " μH ".

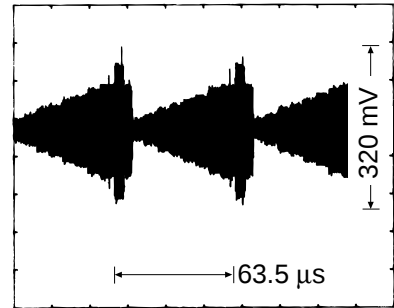
WAVEFORMS



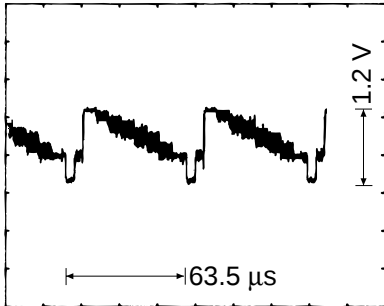
① Q200 collector



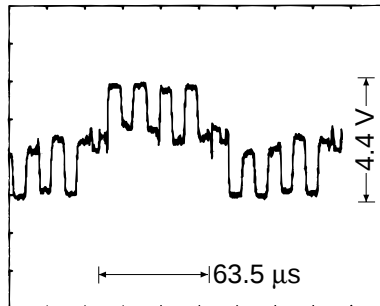
② IC300 pin 20



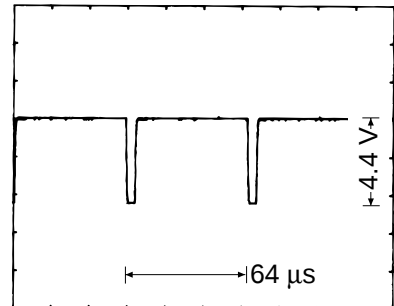
③ IC200 pin 19



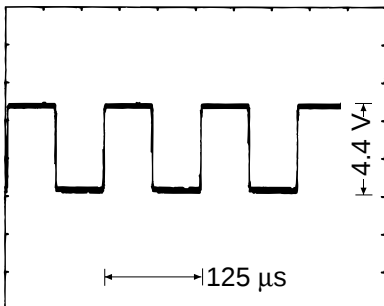
④ IC200 pin 18



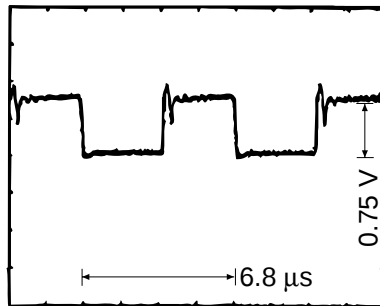
⑤ IC300 pins 32, 34, 36



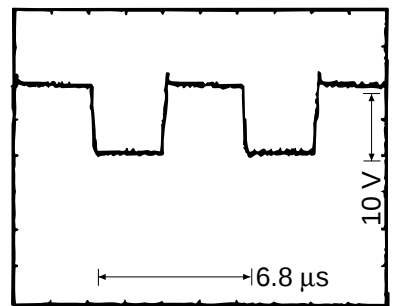
⑥ IC300 pin 21



⑦ IC300 pin 39



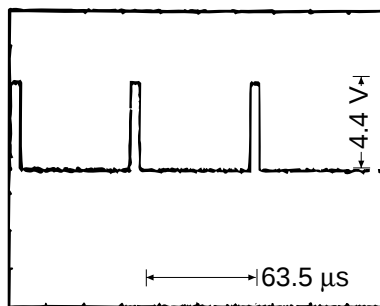
⑧ Q103 base



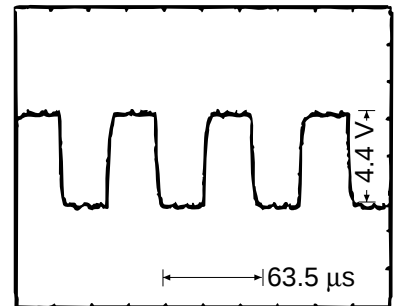
⑨ Q103 collector



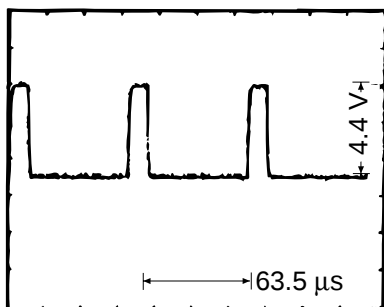
⑩ IC400 pin 3



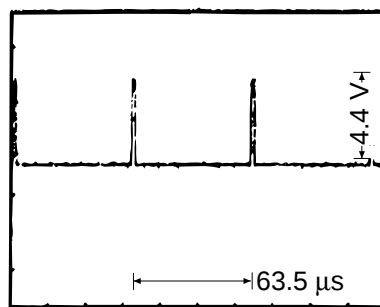
⑪ IC400 pin 4



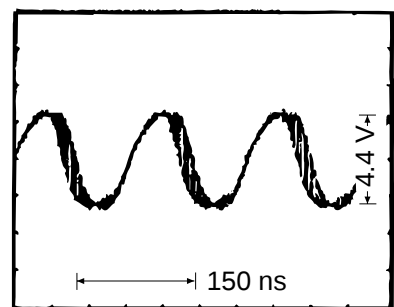
⑫ IC400 pin 8



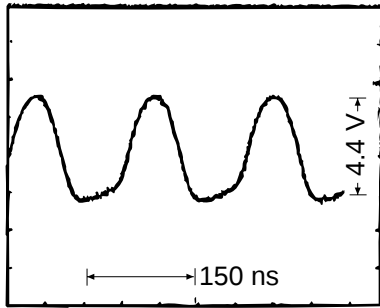
⑬ IC400 pin 22



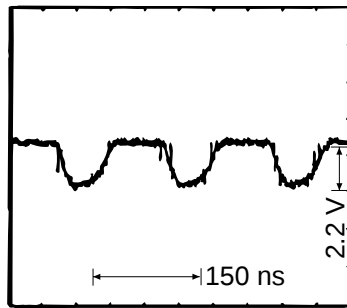
⑭ IC400 pin 25



⑮ IC400 pin 26



⑩ IC400 pin 27



⑪ IC400 pin 28

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