

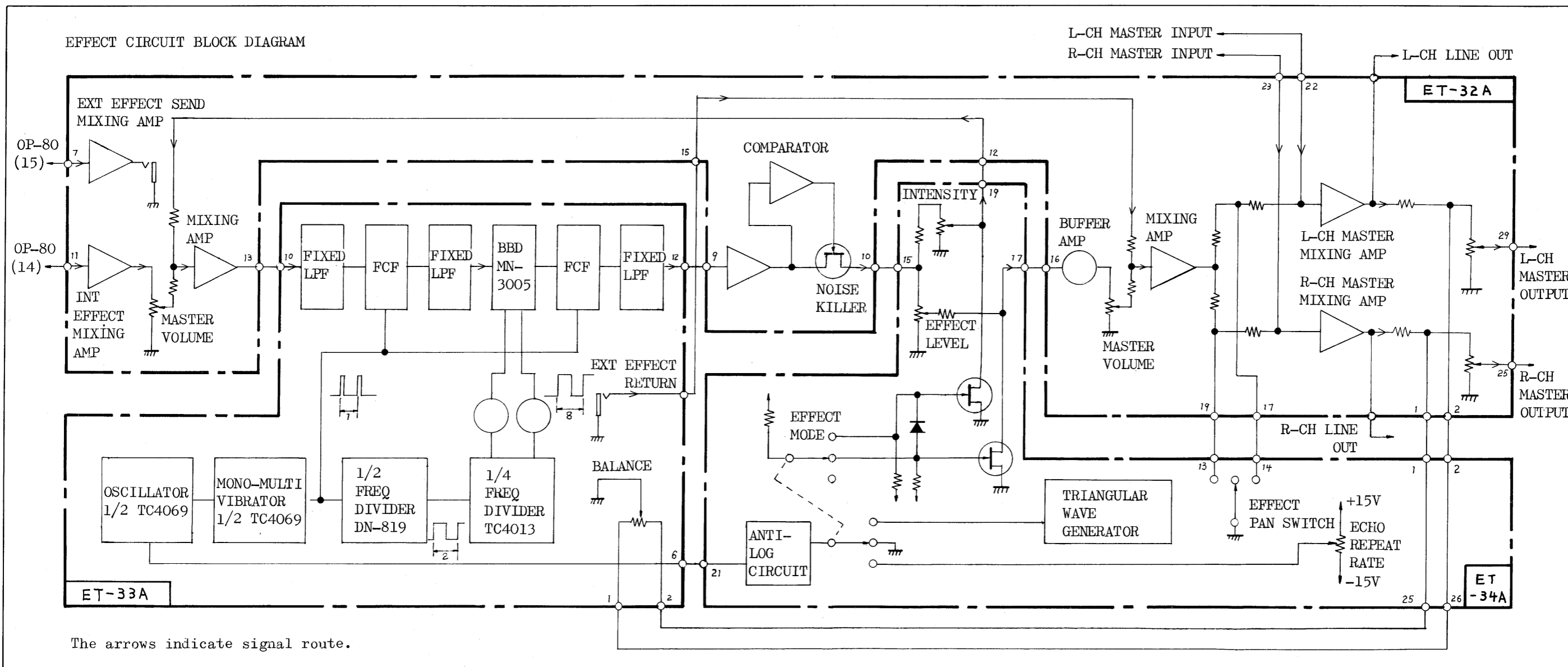
VX-120 SERVICE NOTES

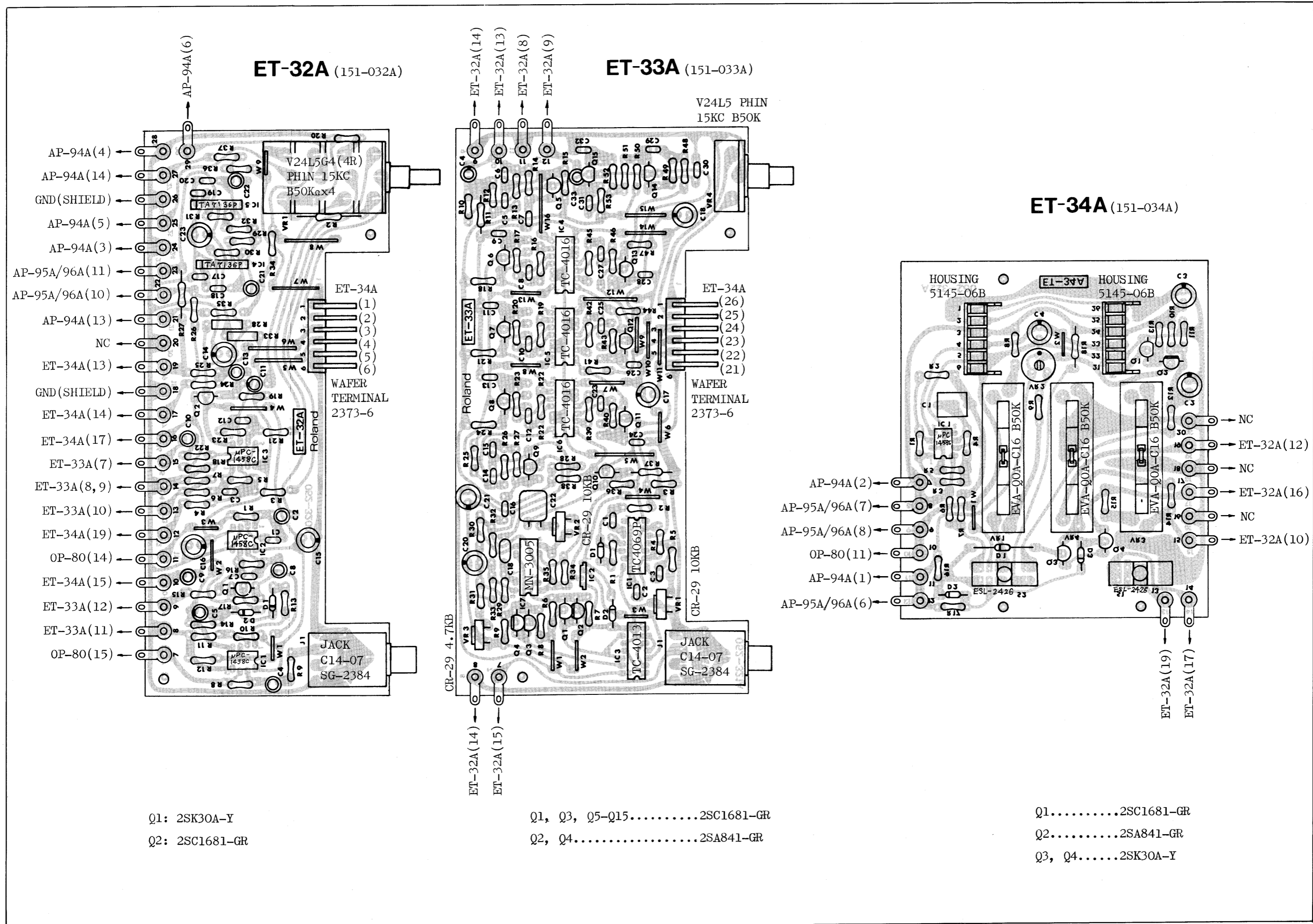
SPECIFICATIONS

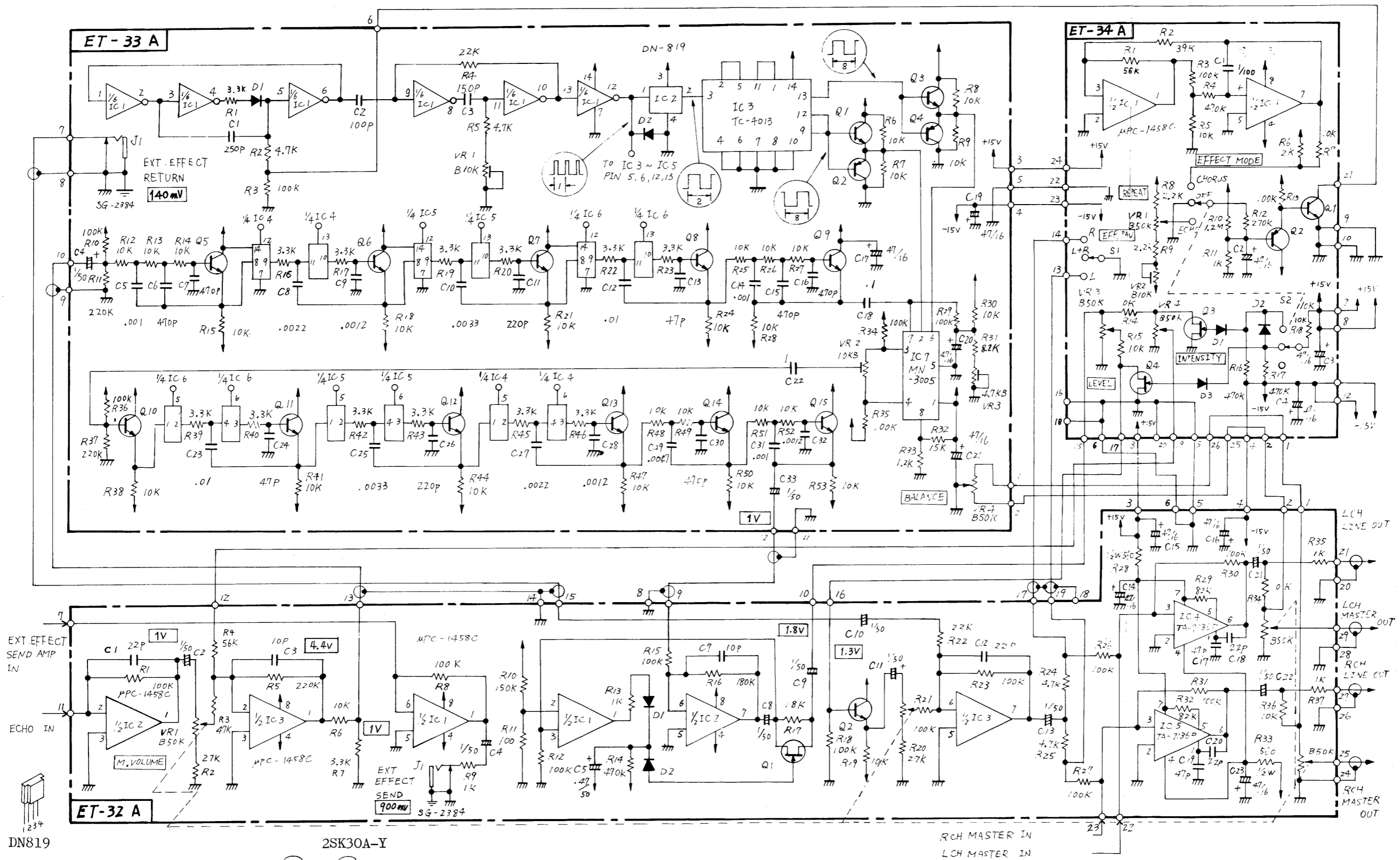
CHANNEL	6	(at 1KHz)
INPUT CH1, CH2 LOW IMPEDANCE MIC	2, 11mV, 4.7K-ohm	
AUX	2, 120mV, 50K-ohm	
PHONO	2, 11mV, 50K-ohm	
CH3-CH6 LOW IMPEDANCE MIC	4, 11mV, 4.7K-ohm	
HIGH IMPEDANCE MIC	4, 20mV, 50K-ohm	
LOW GAIN	4, 90mV, 50K-ohm	
EXT EFFECT RETURN	1, 140mV, 22K-ohm	

OUTPUT SPEAKER 4-OHM MIN/CHANNEL	4
120W (60W+60W) into 8-ohm loads	22V, 8-ohm
160W (80W+80W) into 4-ohm loads	18V, 4-ohm
LINE OUT Pin Jack (Stereo)	2, 1.3V, 1K-ohm
Phone Jack (Stereo)	2, 1.3V, 1K-ohm
EXT EFFECT SEND	1, 900mV, 1K-ohm
CONTROL PRE SECTION PANPOT, EFFECT VOLUME, TREBLE, BASS, CHANNEL VOLUME	
MASTER SECTION MASTER VOLUME, BALANCE, ECHO REPEAT, ECHO INTENSITY, EFFECT LEVEL	
SWITCH INPUT SELECTOR, INPUT ATTENUATOR, STAND-BY, EFFECT MODE, EFFECT PAN, POWER	
POWER CONSUMPTION	155W MAX.
DIMENSIONS	425(W) x 305(H) x 305(D)mm, 16.7(W) x 12.0(H) x 12.0(D)in
WEIGHT	15Kg, 33lbs

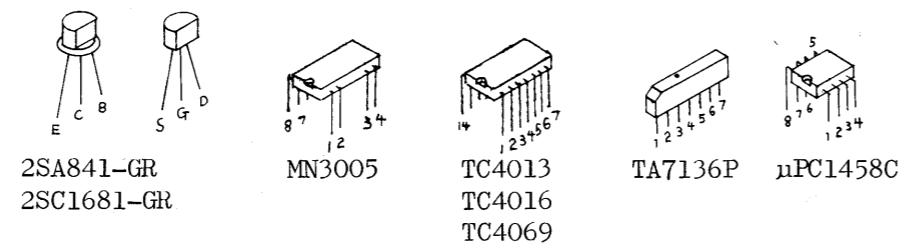
*Specifications are subject to change without notice.

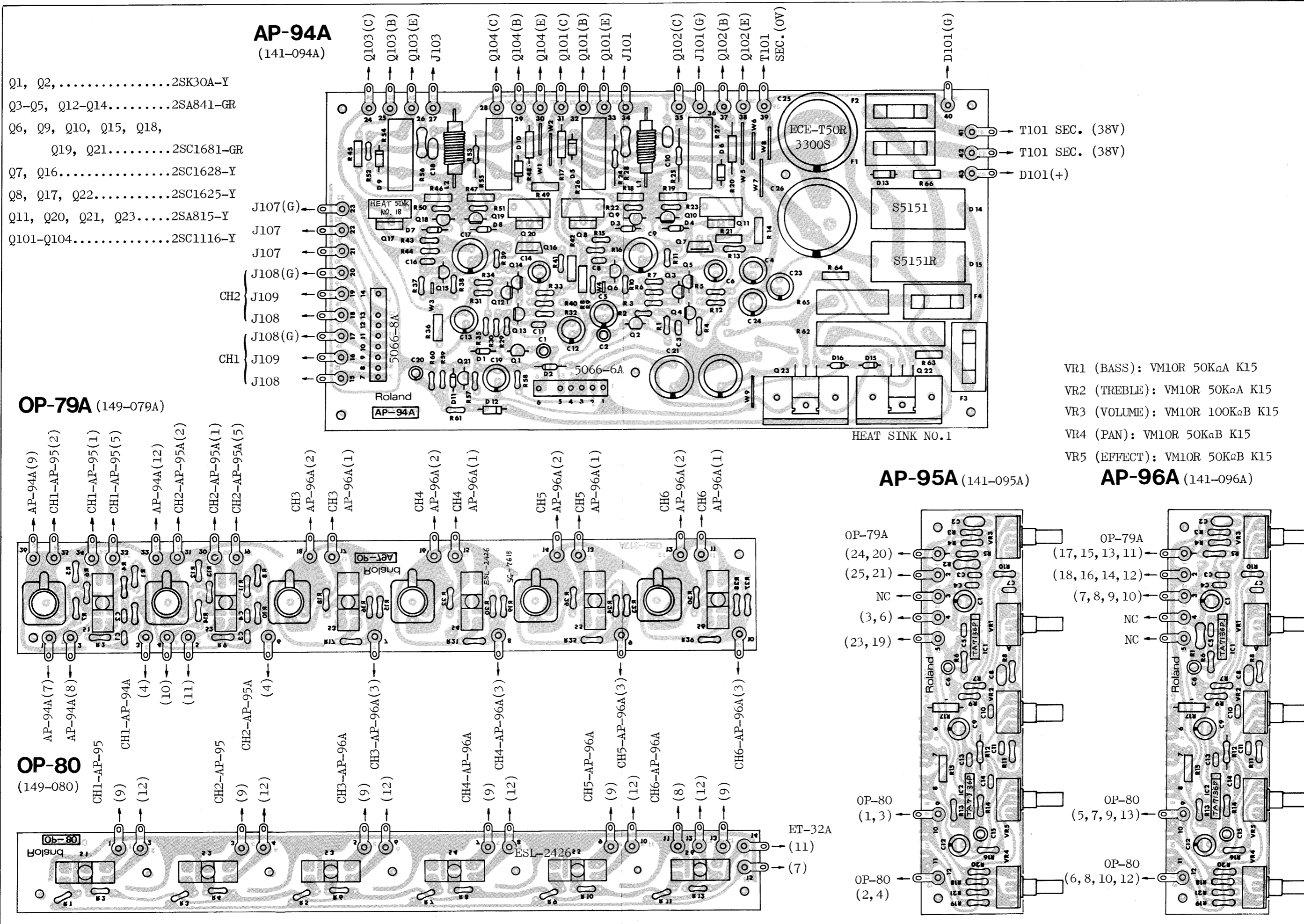


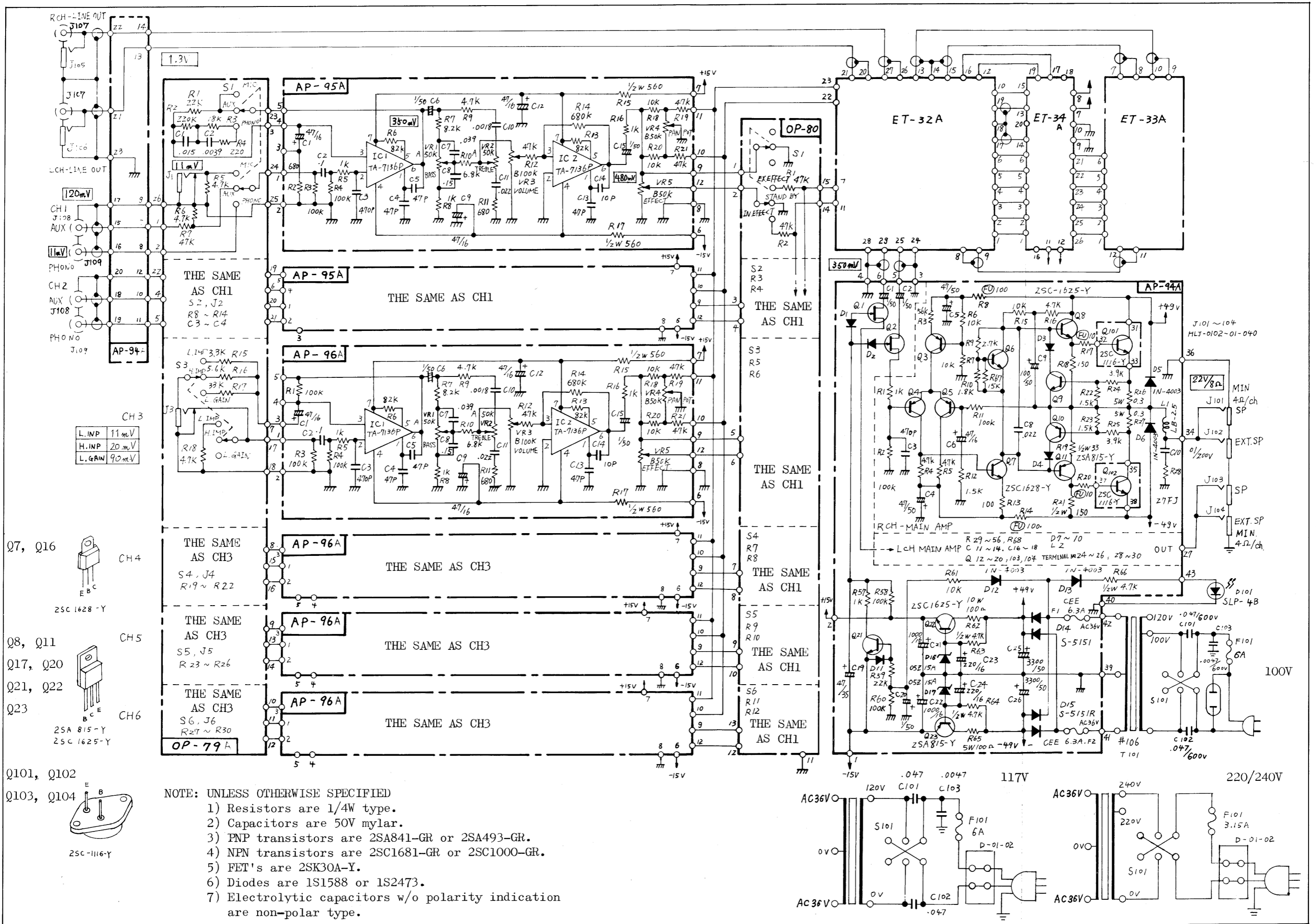




ET-33A: IC1.....TC4069P
 IC4-IC6.....TC4016
 ET-32A: IC1-IC3.....μPC1458C







ADJUSTMENT

Basic Settings

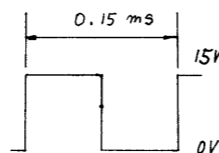
Pre Section: Stand-by Switch STAND-BY
 Treble/Bass 0 (Flat)
 Effect Level 10

Master Section: Repeat 10
 Intensity 0
 Effect Level 10
 Effect Mode ECHO

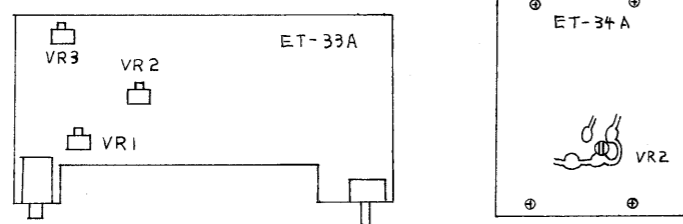
1. Maximum Repeat Delay Time

With controls at the basic settings, adjust trimmer pot VR2 on ET-34 so that the clock pulse period is 0.15msec by watching clock waveform from BBD MN3005 with an oscilloscope.

The delay time of BBD is set at about 300msec by the above adjustment.

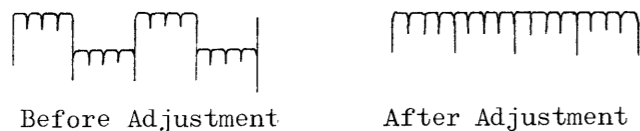


Test Point: Emitter of Q4 or Q1 on ET-33



2. Eliminating Clock Pulse Component From BBD Output

With controls at the basic settings, adjust pot VR2 on ET-33 so that clock pulse component is minimum by watching BBD output with an oscilloscope.

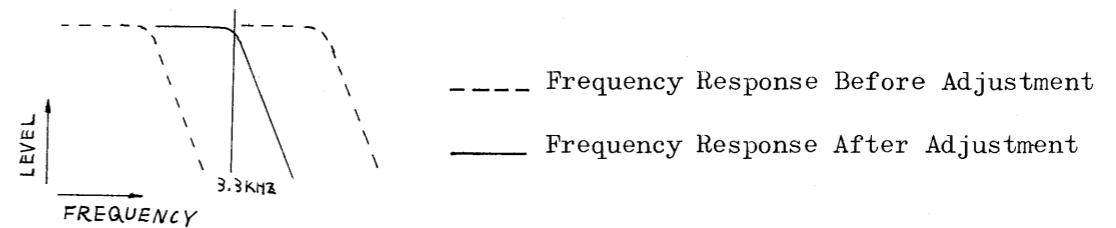


Test Point: Emitter of Q10 on ET-33

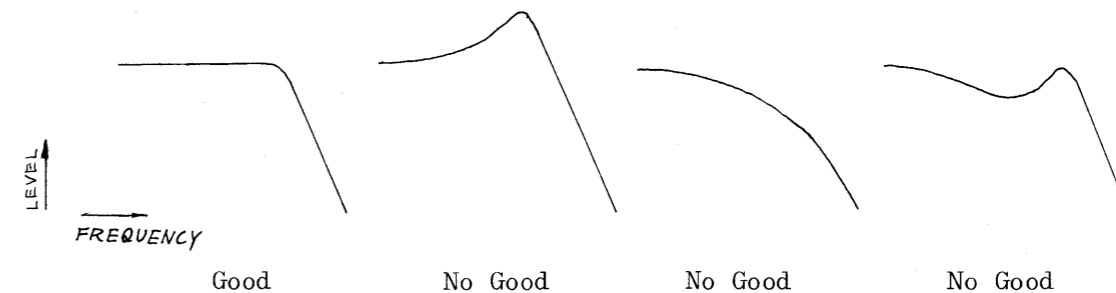
Important: Set the oscilloscope at AC range, since the BBD output contains DC component.

3. FCF (Frequency Controlled Filter)

- Adjust Repeat control so that the clock pulse frequency is 10KHz (0.1msec) by watching clock pulse waveform from BBD MN3005 with an oscilloscope.
- Connect an af oscillator to CH6 and set Stand-by switch at INT EFFECT to give a sine wave (500mV - 1V) to BBD MN3005.
- While varying input signal frequency from 1KHz to 10KHz, adjust VR1 on ET-33 to set FCF cutoff frequency at 3.3KHz by checking BBD MN3005 input signals (at emitter of Q9 on ET-33) with an oscilloscope and a millivoltmeter.



4. Make sure that no large peak or dip is caused around the cutoff frequency.



5. While varying input signal frequency, make sure that the cutoff frequency is around 3.3KHz and no large peak or dip is caused, by watching the output of ET-33 (terminal No. 12) with an oscilloscope.

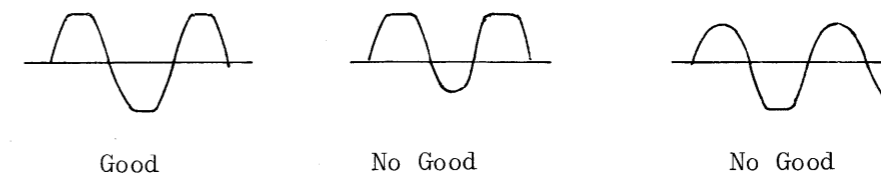
Note at this time, that the level around the cutoff frequency is a little lower than that in the step 4 due to influence of BBD MN3005 characteristic.



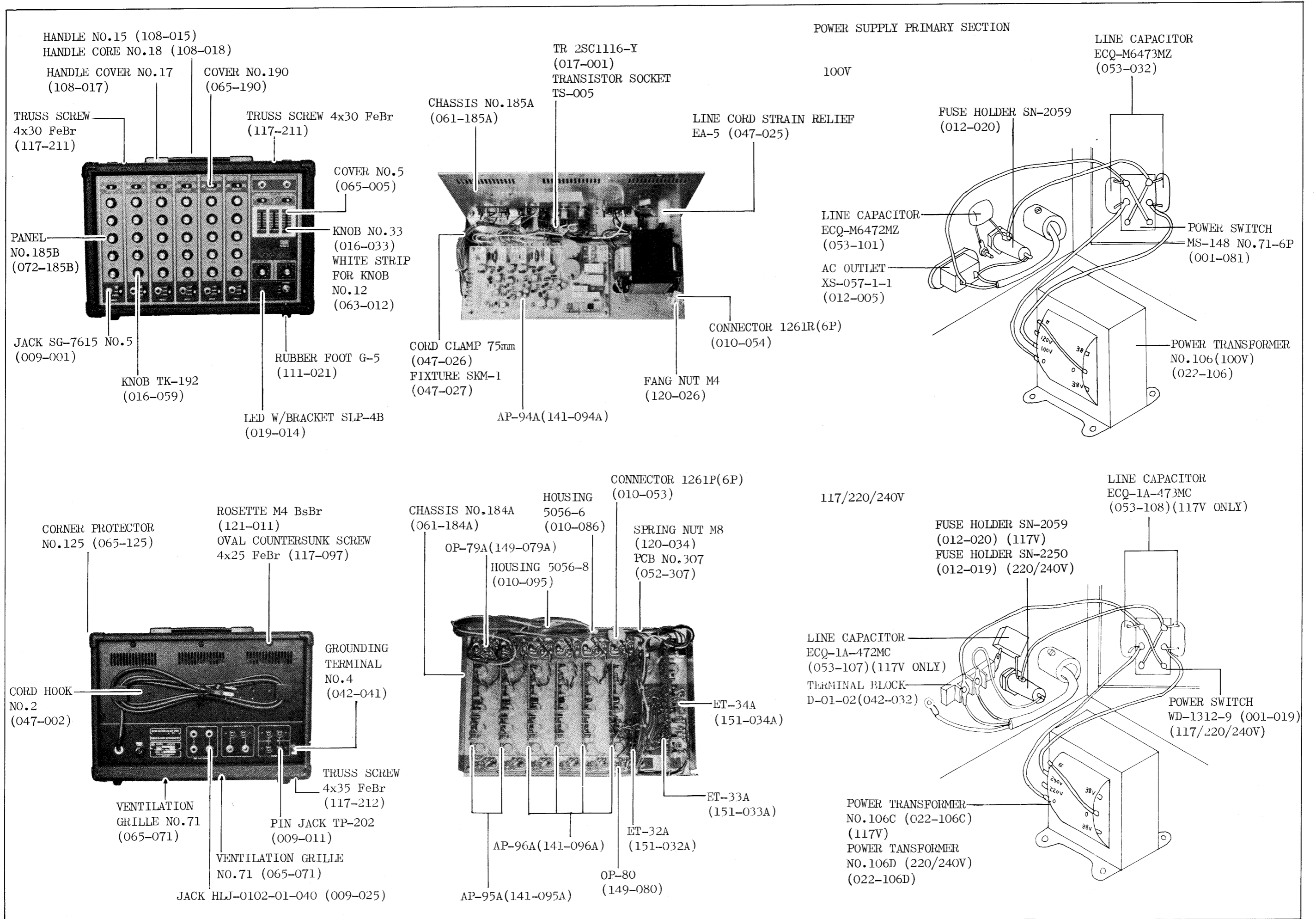
4. Bias Voltage Of BBD MN3005

- Set Stand-by switch at INT EFFECT and set Repeat control at 0. Keep other controls as the basic settings.
- Feed sine wave (1KHz) to CH6 and set to apply 1.5V - 2V to BBD.
- Adjust trimmer pot VR3 on ET-33 to obtain equally distorted waveform at the positive and negative tops by watching BBD MN3005 output with an oscilloscope.

Test Point: Emitter of Q10 or terminal No. 12



Caution: When putting AP-94 into operation, be sure to connect the connector to prevent capacitor C22 1000uF/16V from damage.



PART NO.	PART AND DESCRIPTION	PART NO.	PART AND DESCRIPTION
081-101	Cabinet No.101	009-001	Jack SG-7615 NO.5
111-021	Rubber Foot G-5	009-028	Jack C14-07-S-G-2384
065-071	Ventilation Grille No.71	009-025	Jack HLJ-0102-01-040
065-125	Corner Protector No.125	009-011	Pin Jack TP-202
131-102	Vinyl Cover No.102	012-001	Transistor Socket TS-005
130-204	Carton	012-033	IC Socket C03-014-350K, 14P
117-097	Screw 4x25 FeBr, oval countersunk	120-001	Sleeve Nut No.1 (10mm)(AP-94)
117-211	Screw 4x30 FeBr, truss	120-003	Sleeve Nut No.3 (18mm)(OP-80/ET-34)
117-212	Screw 4x35 FeBr, truss	042-041	Grounding Terminal No.41
121-011	Rosette M4 BSB	019-014	LED w/ Bracket SLP-4B
047-002	Cord Hook No.2	120-034	Spring Nut M8(LED)
108-015	Handle No.15	065-005	Cover No.5(SLIDER)
108-017	Handle Cover No.17	065-190	Cover No.190(ESL-2426)
047-025	Line Cord Strain Relief EA-5	010-053	Connector 1261P (6P)
012-005	AC Outlet XS-057-1-1 (100V)	010-054	Connector 1261R (6P)
042-032	Terminal Block D-01-02P	010-017	WAFER TERMINAL 2373-6
061-184A	Chassis No.184A(PRE)	010-098	HOUSING 5145-06B
061-185A	Chassis No.185A(MAIN)	010-086	Housing 5065-6
072-185B	Panel No.185B (Front)	010-095	Housing 5065-8
016-059	Knob TK-192	010-067	Housing 5066-6A
016-033	Knob No.33 (SLIDER)	010-068	Housing 5066-8A
063-012	White Strip for Knob No.33, No.12	042-045	Terminal Pin 2578T for 5065-6/8)
012-020	Fuse Holder SN2059 (100/117V)	042-012	Terminal Pin 1381T (for 1261P)
012-019	Fuse Holder SN2250 (220/240V)	042-011	Terminal Pin 1380T (for 1261R)
012-003	Fuse Holder TF-758 sec.	048-001	Heat Sink No.1 (Power Supply)
008-009	Fuse MGC JIS 6A (100/117V) prim.	048-018	Heat Sink No.18 (VERTICAL)
008-072	Fuse CEE 3.15A (220/240V) prim.	001-193	Switch ESL-2426, Lever
008-076	Fuse CEE 6.3A sec.	120-026	Fang Nut M4
008-072	Fuse SGA 125mA (117/220/240V) sec.	030-400	Pot VM10R50KQBK15
022-106	Power Transformer No.106 (100V)	030-387	Pot VM10R50KQAK15
022-106C	Power Transformer No.106C (117V)	030-401	Pot VM10R100KQBK15
022-106D	Power Transformer No.106D (220/240V)	028-503	Pot V24L5G4(4R)PHIN15KC-B50K x4
001-081	Power Switch MS-148 No.71-6P (100V)	030-284	Pot V24L5PHIN15KCB50K
001-019	Power Switch WD-1312-9(117/220/240V) (WD-1312 w/"CSA" mark)	028-025	Slide Pot EVA-Q0A-C16B54
141-094A	AP-94A (main amp pcb)	030-513	Trimmer Pot CR-29R 4.7KB
052-316A	AP-94A pcb less parts	030-514	Trimmer Pot CR-29R 10KB
141-095A	AP-95A (CH1/2 pre-amp pcb)	028-004	Trimmer Pot EVT-R4A B10K
141-096A	AP-96A (CH3/4/5/6 pre-amp pcb)	017-078	Tr 2SA815-Y
052-318A	AP-95A/96A pcb less parts	017-069	Tr 2SA841-GR
149-079A	OP-79A (input circuit pcb)	017-079	Tr 2SC1625-Y
052-317A	OP-79A pcb less parts	017-028	Tr 2SC1628-Y
149-080	OP-80 (stand-by circuit pcb)	017-062	Tr 2SC1681-GR
052-319	OP-80 pcb less parts	017-001	Tr 2SC1116-Y (POWER)
151-032A	ET-32A (master & effect pcb)	017-014	FET 2SK30A-Y
052-320A	ET-32A pcb less parts	020-042	IC TA7136P
151-033A	ET-33A (effect digital pcb)	020-062	IC uPC1458C
052-321A	ET-33A pcb less parts	020-041	IC TC4013
151-034A	ET-34A (effect control pcb)	020-083	IC TC4016
052-322A	ET-34A pcb less parts	020-084	IC TC4069P
052-307	PCB, LED mounting	020-039	IC DN819
		020-085	IC MN3005 (BBD)
		018-032	Di S-5151 (rectifier)
		018-033	Di S-5151R (rectifier)
		018-059	Di 1S1588
		018-022	Di 1N4003
		018-025	Zener 05Z-15A

PART NO.	PART AND DESCRIPTION
	RESISTORS
008-118	Fusing Resistor FRNB 1/4W 10-ohm
008-130	Fusing Resistor FRNB 1/4W 100-ohm
044-108	Carbon ERC-12GK 1/2W (+10%) 33-ohm
044-116	Carbon ERC-12GK 1/2W (+10%) 150-ohm
044-123	Carbon ERC-12GK 1/2W (+10%) 560-ohm
044-253A	Wire Wound M04P-5W 0.3-ohm
044-283A	Wire Wound M04P-5W 100-ohm
044-365A	Wire Wound M04P-10W 100-ohm
	CAPACITORS
053-101	ECQ-M6472 MZ (100V) line capacitor
053-102	ECQ-M6473 MZ (100V) line capacitor
053-107	ECQ-1A472 MC (117V) line capacitor
053-108	ECQ-1A473 MC (117V) line capacitor
035-103	Polyester ECQM-2103KZ 200V (+10%) 0.01u
035-092	Laminated Styrole Capacitor MHK 100V MJ 1u
032-036	Electro. 16MV 47u
032-038	Electro. 16MV 220u
032-041	Electro. 16MV 1000u
032-064	Electro. 35MV 47u
032-070	Electro. 50MV 0.47u
032-071	Electro. 50MV 1u
032-078	Electro. 50MV 47u
032-177	Electro. ECE-T50R3300S 50V 3300u
032-195	Bi-polar CEO4D1H010 50V 1u

1/4WR, R-25(J)+5% resistors, and ceramic and mylar capacitors (50V+10%) are omitted.

PARTS ORDERING INFORMATION

Name of part number of some of the parts is changed from those printed on previously issued parts list. When ordering replacement parts, be sure to follow the description on the present issue.

When ordering parts, be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A Description of the Part

This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the parts location and function as well as model and serial number of the unit.