

YAMAHA

ELECTRONIC PIANO

CP-20



SERVICE MANUAL

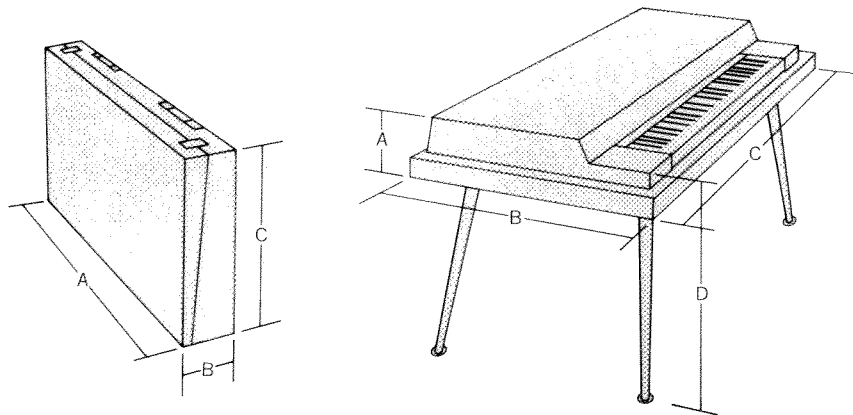
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SPECIFICATIONS

- KEYBOARD 61 KEYS
- TONE TABLETS
 - PIANO 1
 - PIANO 2
 - HARPSICHORD 1
 - HARPSICHORD 2
- CONTROL
 - VOLUME
 - PITCH
 - TONE BASS TREBLE
 - BALANCE (PIANO - HARPSICHORD)
 - DECAY
 - TREMOLO SPEED (0.5 ~ 13 Hz) INTENSITY
- OUTPUT TERMINAL (OUTPUT LEVEL/IMPEDANCE)
 - OUTPUT (-20 dBm/600Ω)
 - PHONES (-5 dBm/8Ω)
 - SUSTAIN FOOT SW.
- POWER REQUIREMENTS 120/220/240 Volts AC 50/60 Hz 25W
(120V 0.3A CSA Model)
- WEIGHT 40.5 kg (89.3 lbs)
- DIMENSIONS

A - 1,080 mm (42-1/2") B - 166.5 mm (6-1/2") C - 571 mm (22-1/2")	A - 155 mm (6-1/8") B - 571 mm (22-1/2") C - 1,080 mm (42-1/2") D - 738 mm (29") Height to Keyboard - 733.7 mm (28-7/8") Total Height - 790 mm (31-1/8")
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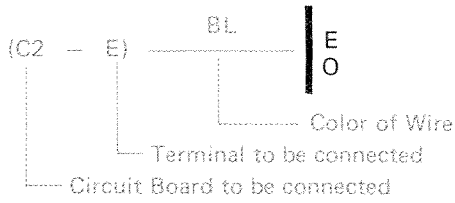


- ACCESSORY AC CORD, CP-20 LEGS
- OPTIONAL ATTACHMENTS SUSTAIN PEDAL (FC-4)

● CODING GUIDE

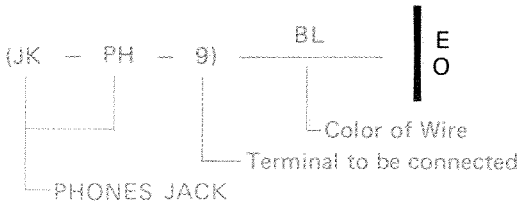
1. Designation of Wiring

All wiring of circuit boards are indicated, for example, as shown here-below:



NOTE: All above are applied, except JACKS.

- Jack : JK
- PHONES : PH
- FOOT SW : SUS
- OUTPUT : OUT

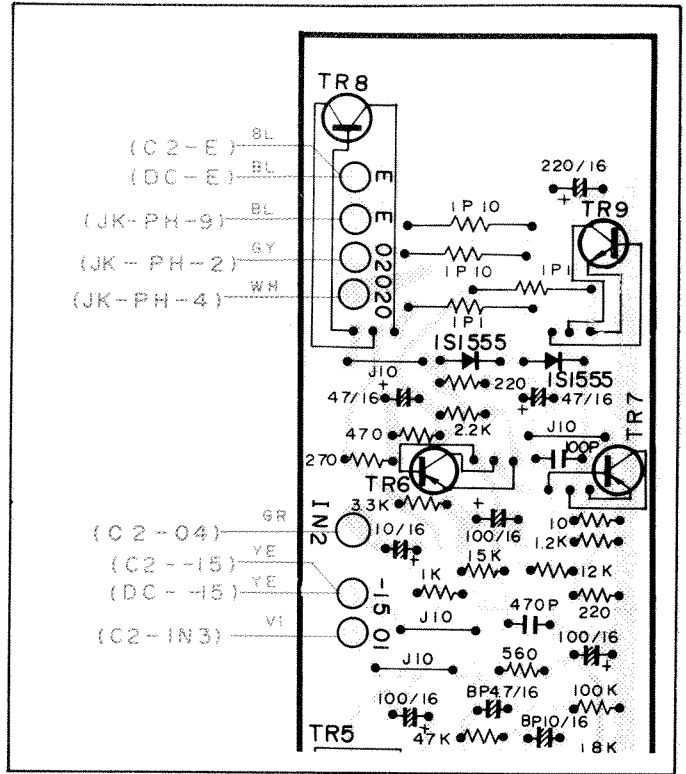


Also SUS stands for FOOT SW, OUT for OUTPUT.

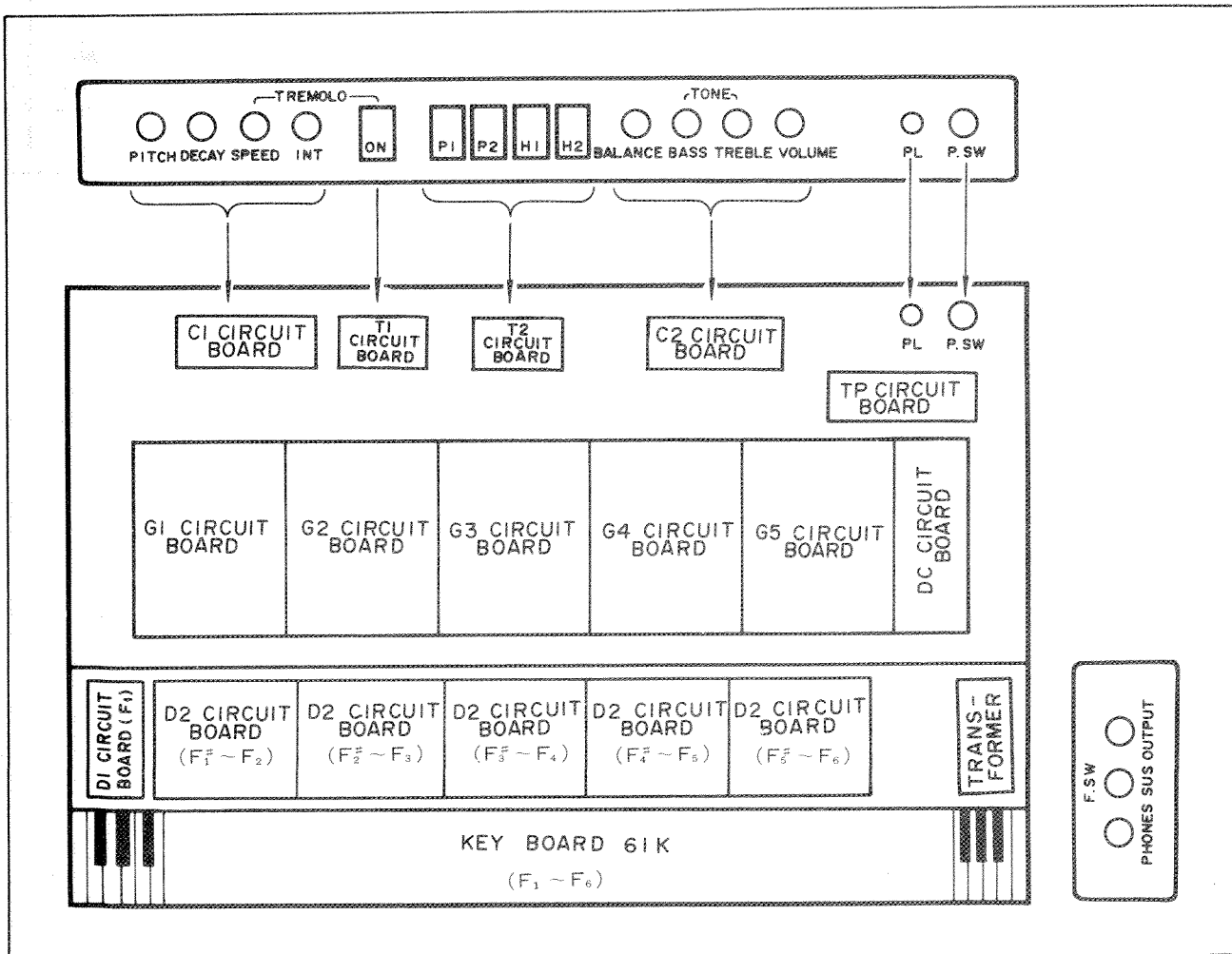
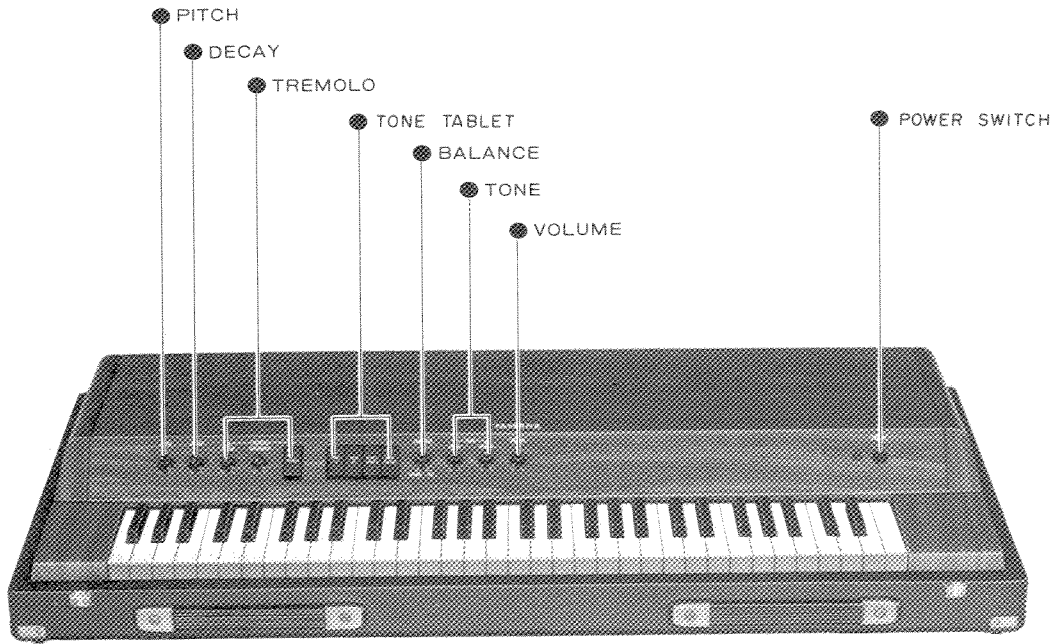
Designation of Wiring Materials

1. Color Designation (Only English letters are shown in patterns)

- | | |
|-------------|------------------|
| BL (Black) | WH (White) |
| BR (Brown) | GG (Grass Green) |
| RE (Red) | SB (Sky Blue) |
| OR (Orange) | PK (Pink) |
| YE (Yellow) | J (Jumper) |
| GR (Green) | |
| BE (Blue) | |



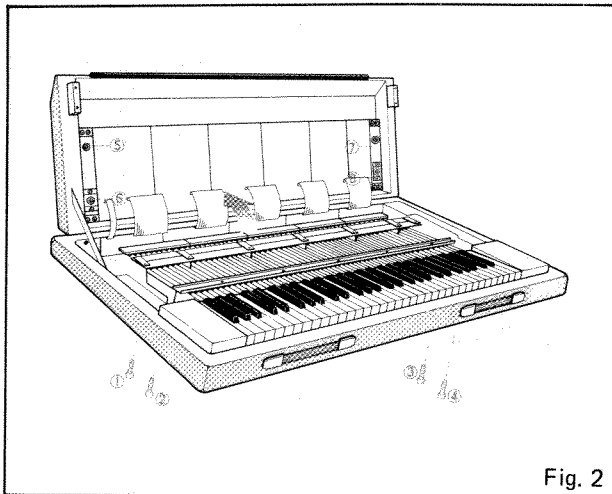
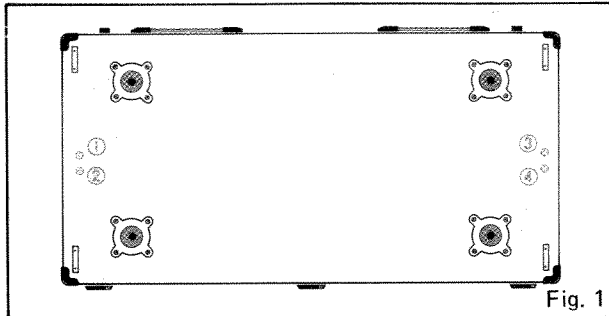
UNIT LAYOUT



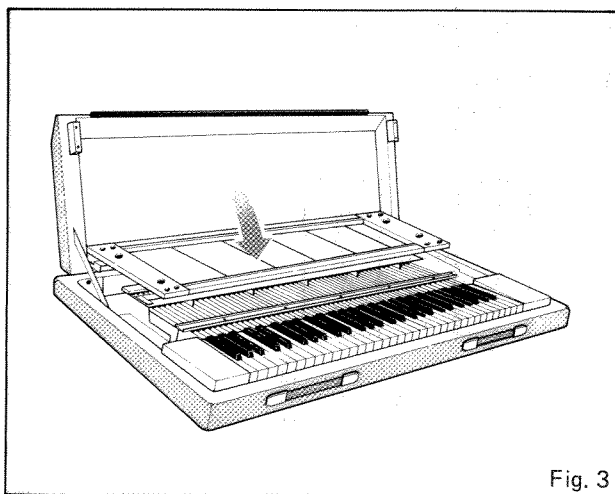
DISASSEMBLY PROCEDURES

1. Panel

Loosen the screws (1), (2), (3) and (4), which are located at the bottom of the main body. Then raise up the panel, as shown in Fig. 1 and 2.

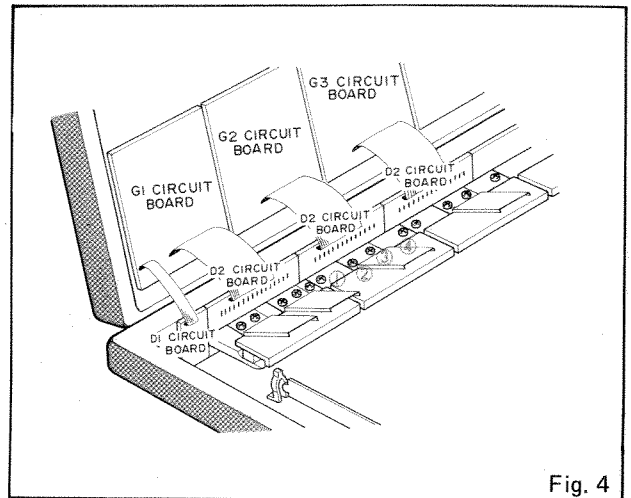


Remove screws (5) to (8). Fig. 1, Fig. 2



2. D Circuit Board

Open the panel according to procedure (1). Remove screws (1) to (4), and then remove the D circuit board, as shown in Fig. 4.

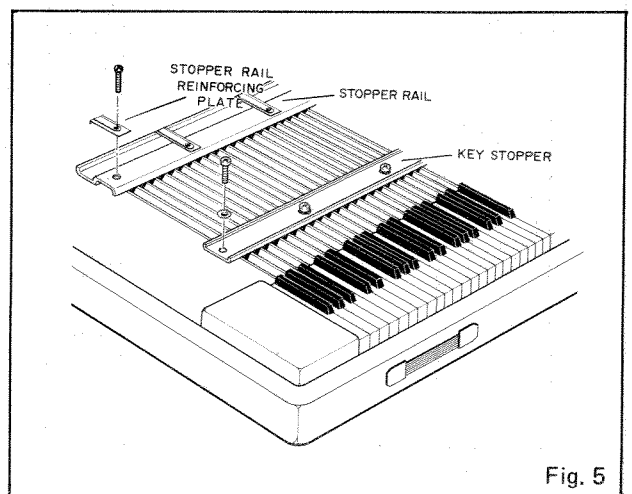


3. Keyboard

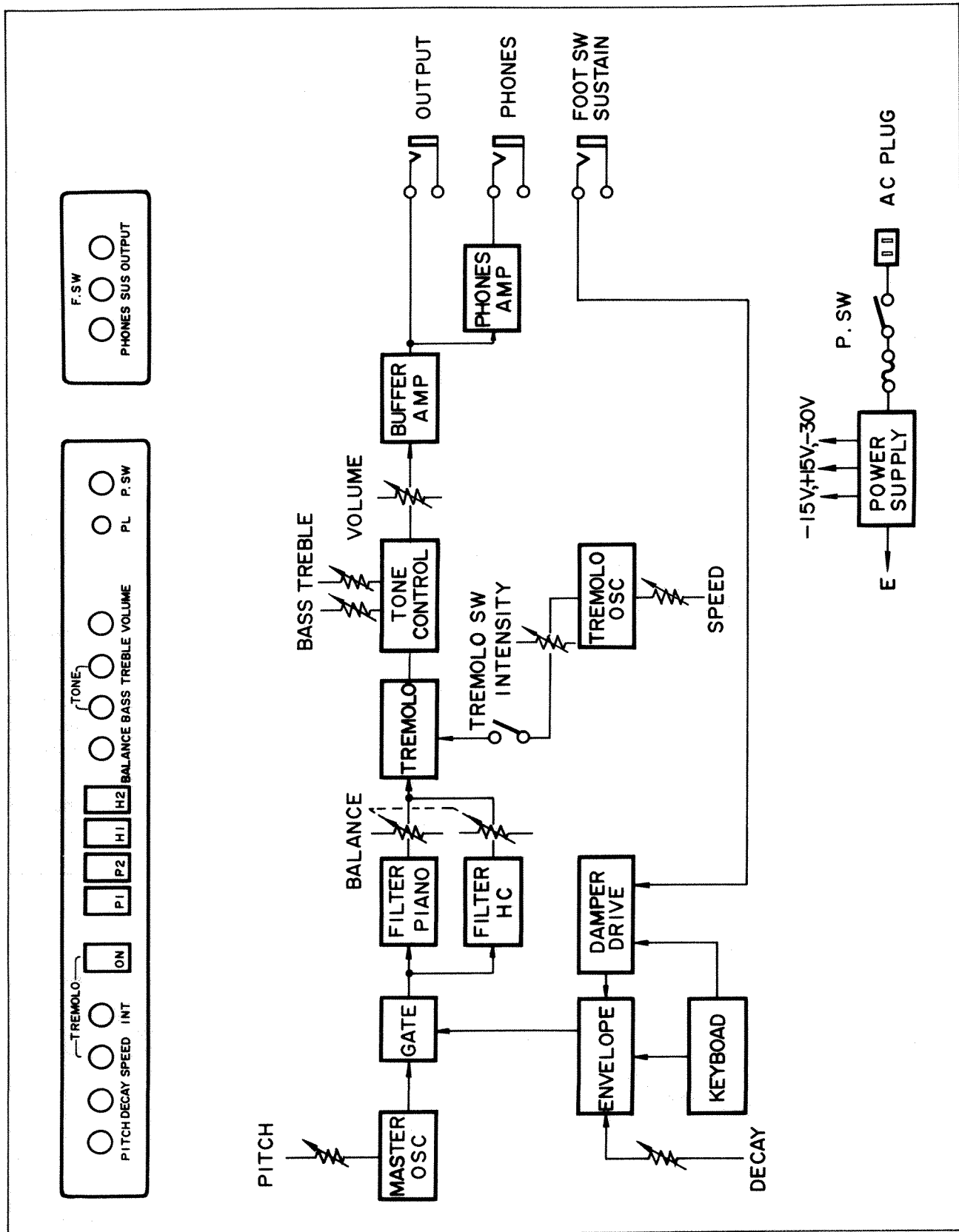
Open the panel according to procedure (1). Remove screws of the stopper rail and the key stopper, as shown in Fig. 5.

NOTE: Be sure to remove screws of the D board and draw back the D board, when the keyboard is removed. This is because, not to scratch the keyboard with switches.

Remove black keys first, white ones next, as shown in Fig. 5.

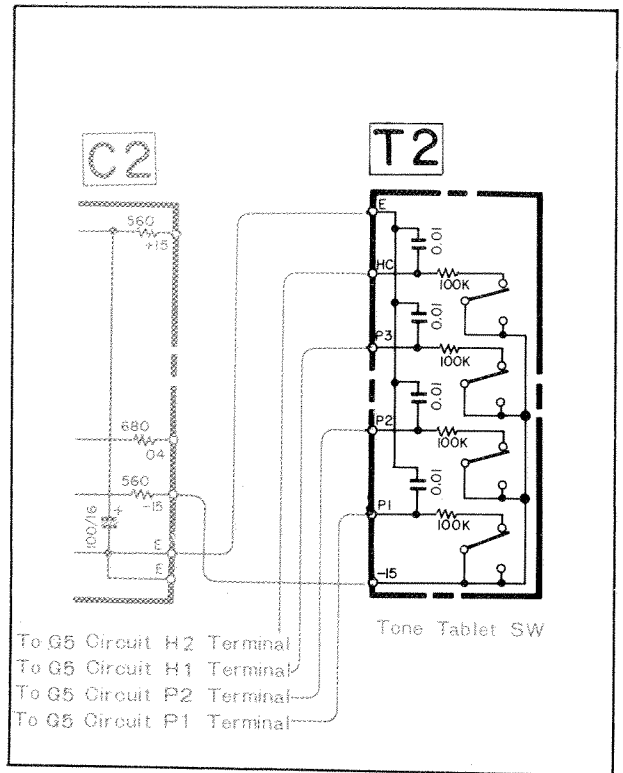
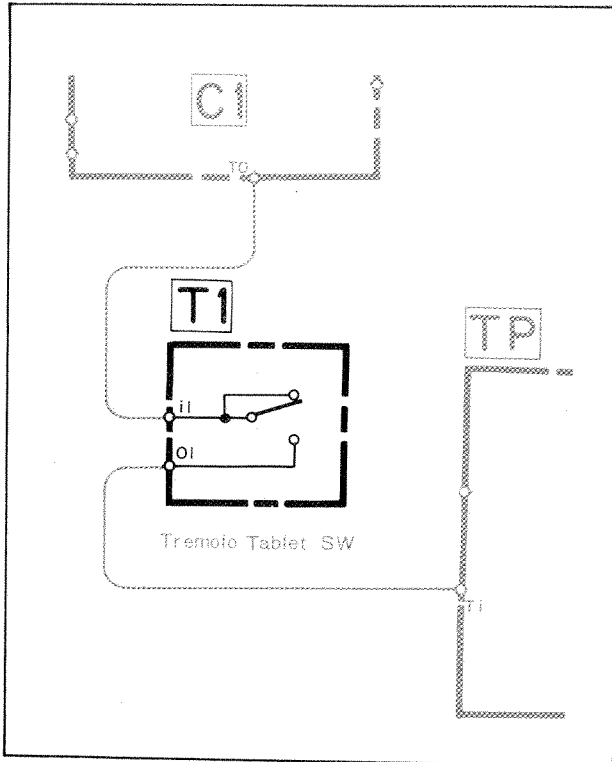


BLOCK DIAGRAM

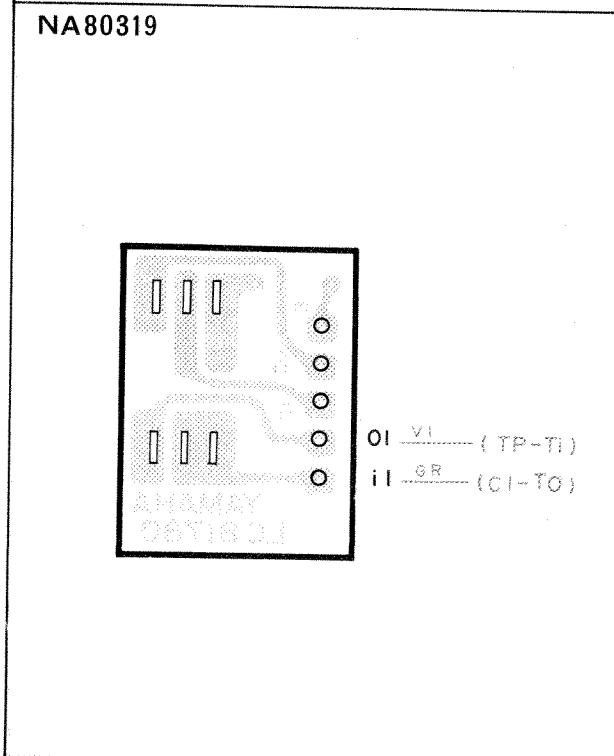


7. T1, T2 CIRCUIT BOARD

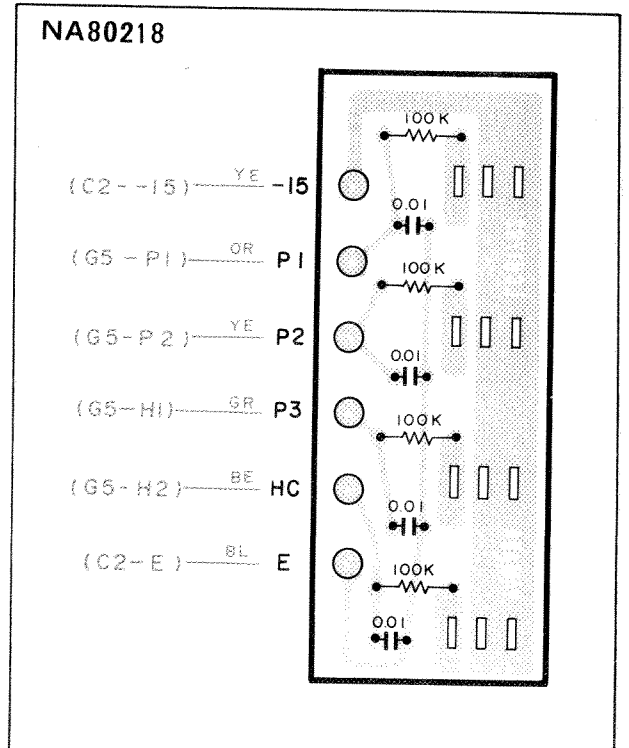
● T1 · T2 Circuit



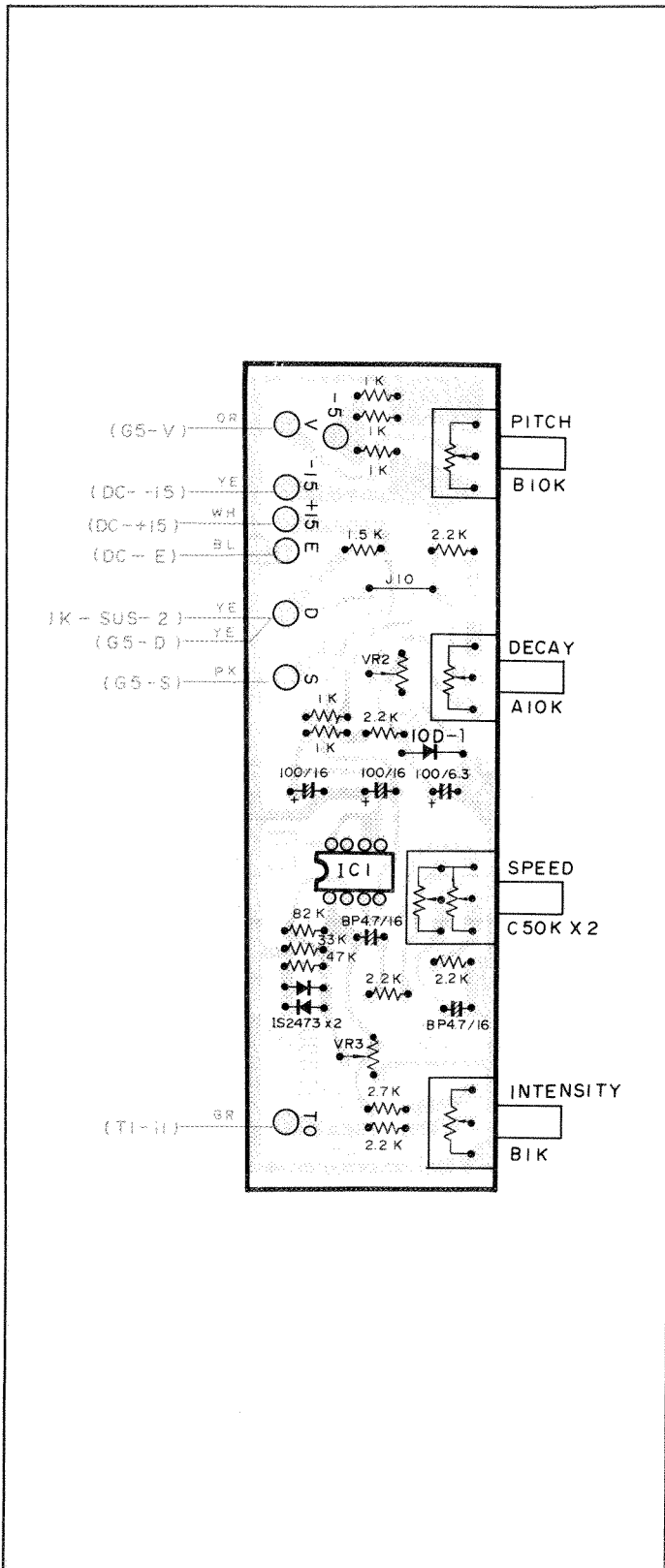
● T1 Circuit Board



● T2 Circuit Board



● C1 Circuit Board



▼ Semiconductors, to be used.

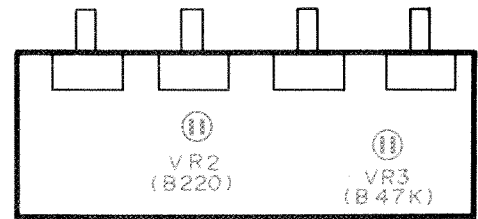
- iC
iC1 : NJM4558DN

▼ Applied Sections

- Pitch Control Circuit
- Decay Control Circuit
- Tremolo OSC Circuit

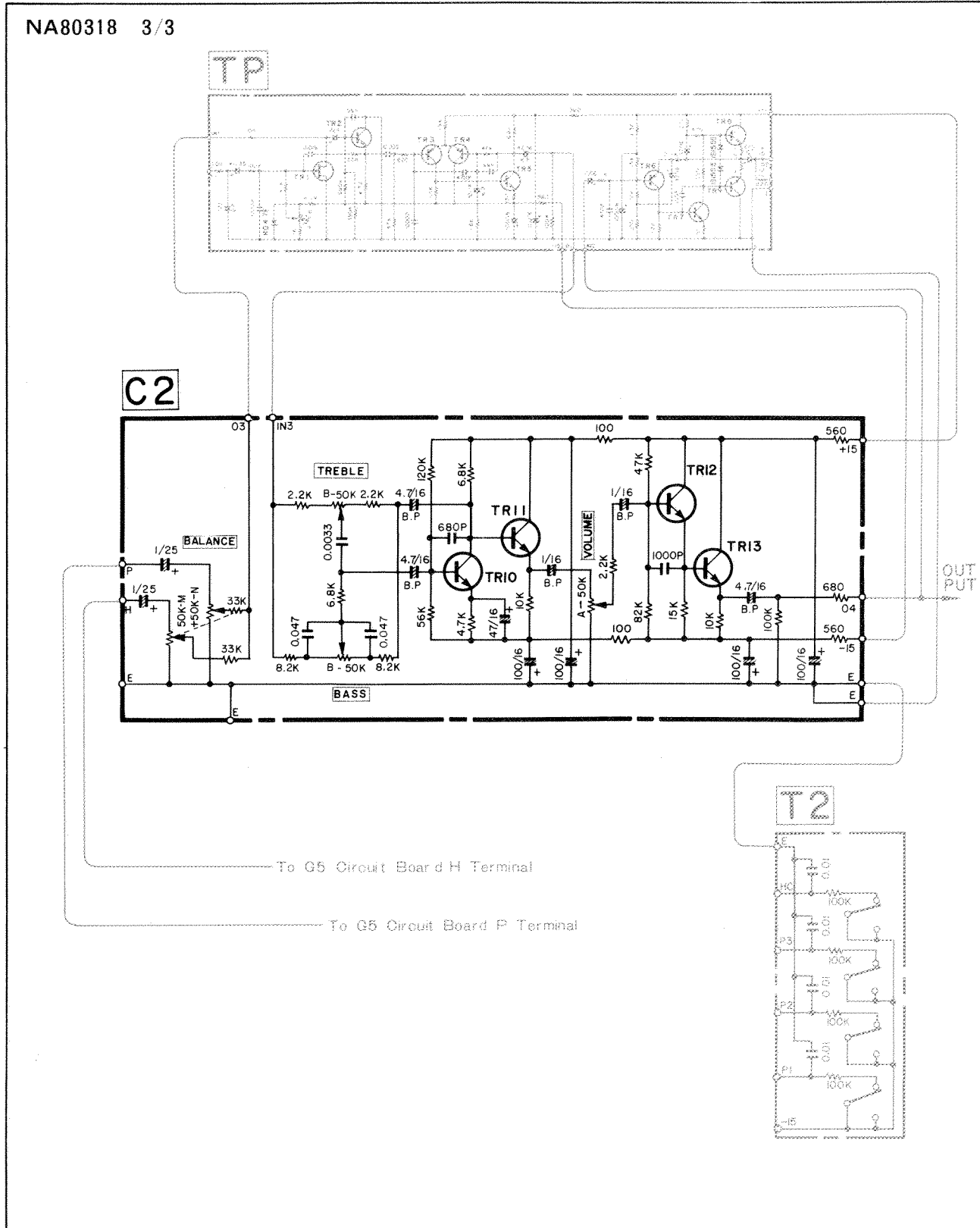
▼ Adjustment

- VR-2 (B220) Decay Control MIN Adjustment
- VR-3 (B47K) Tremolo OSC Output Adjustment

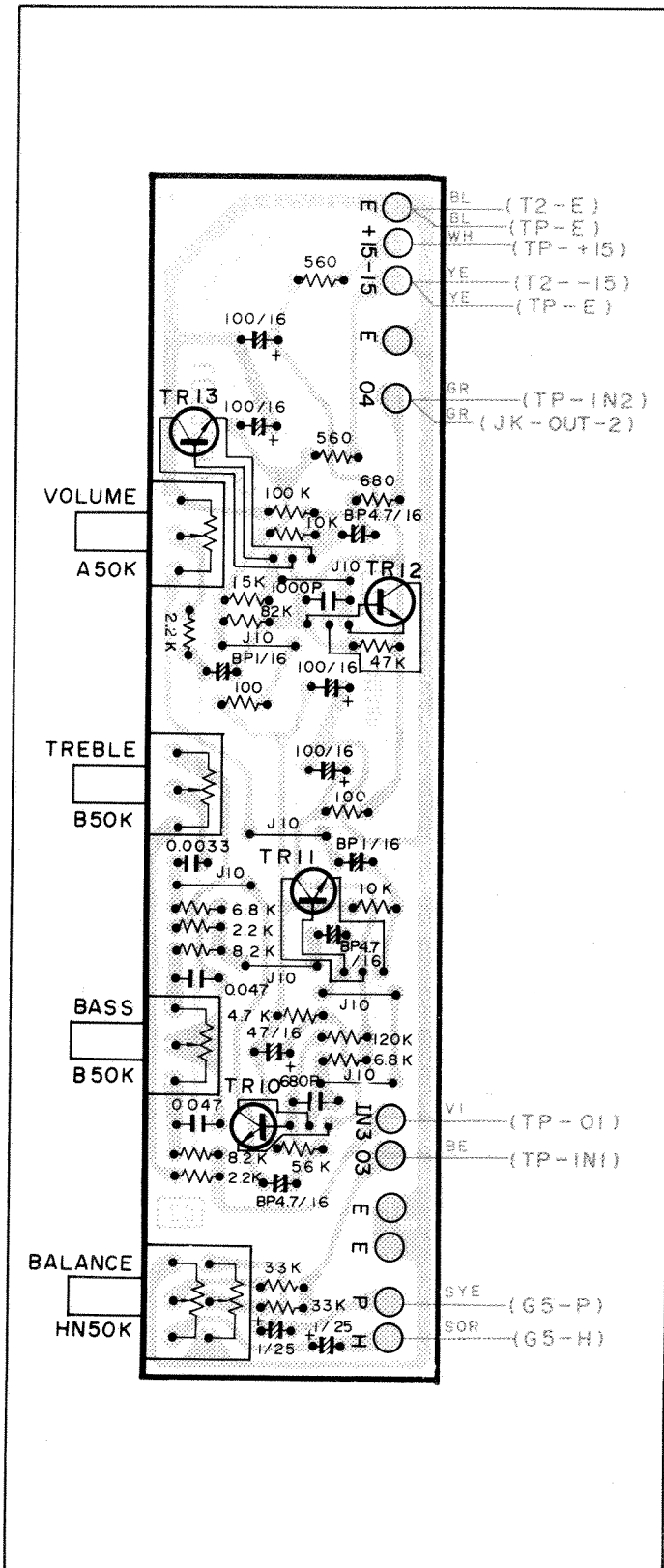


9. C2 CIRCUIT BOARD

● C2 Circuit Board



● C2 Circuit Board

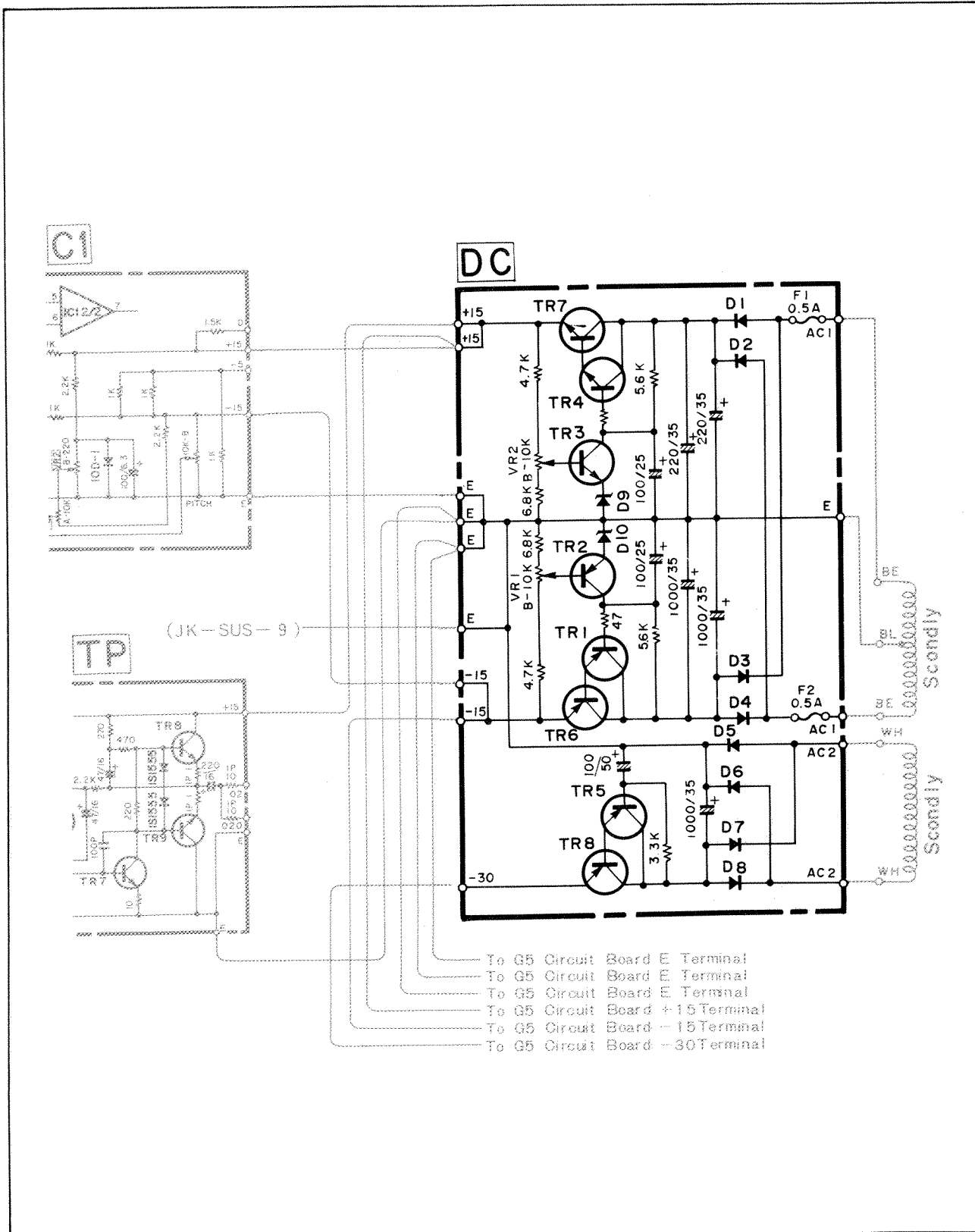


- ▼ Semiconductors, to be used.
 2. Transistor
 - Tr1 : 2SK30A (Y)
 - Tr10~13 : 2SC1681 (BC)

- ▼ Applied Sections
 1. Tone Control Circuit
 2. AMP Circuit

10. DC CIRCUIT BOARD

● DC Circuit Board

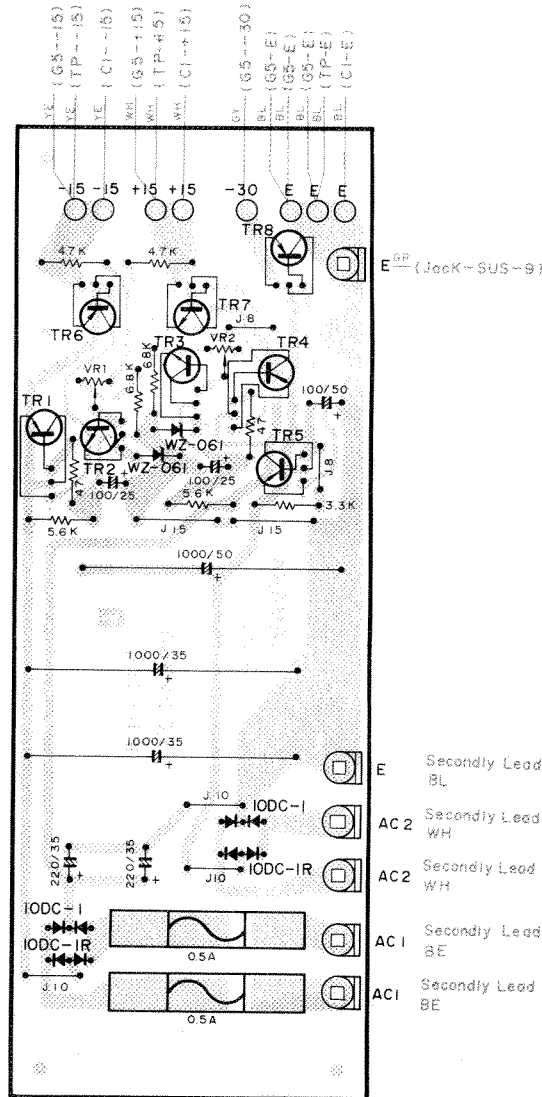


● DC Circuit Board

NA80313

NA80314

NA80315



▼ Semiconductors, to be used.

1. Transistor

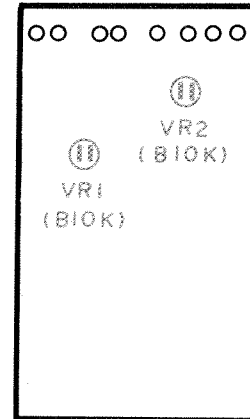
- Tr1, 2 : 2SA561 (Y)
- Tr3, 4 : 2SC1681 (BL)
- Tr5 : 2SA777 (R)
- Tr6, 8 : 2SB596 (R)
- Tr7 : 2SD526 (R)

2. Diode

- D1, 2, 5, 6: 10DC-1
- D3, 4, 7, 8: 10DC1R
- D9, 10 : WZ-061

▼ Adjustment

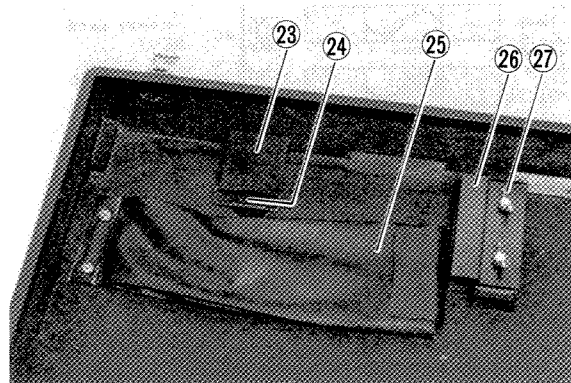
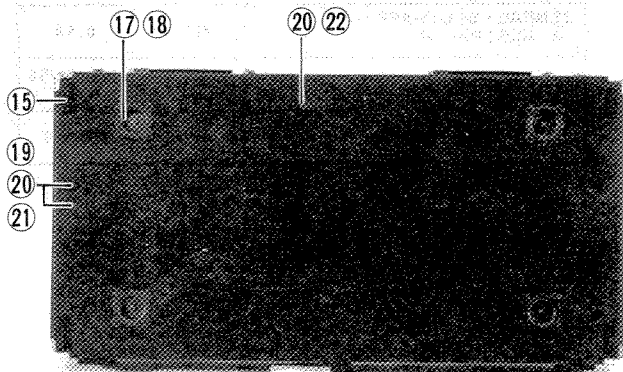
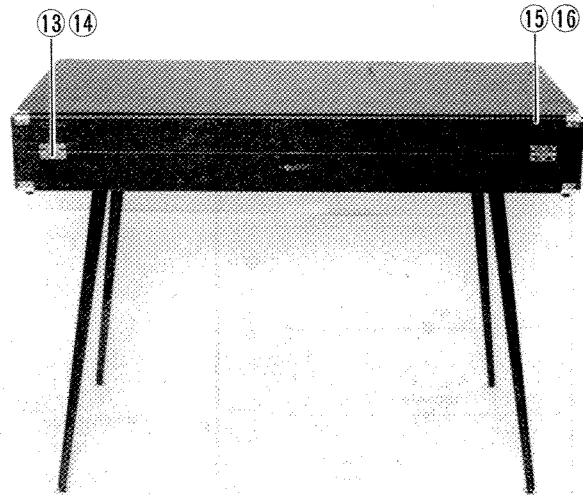
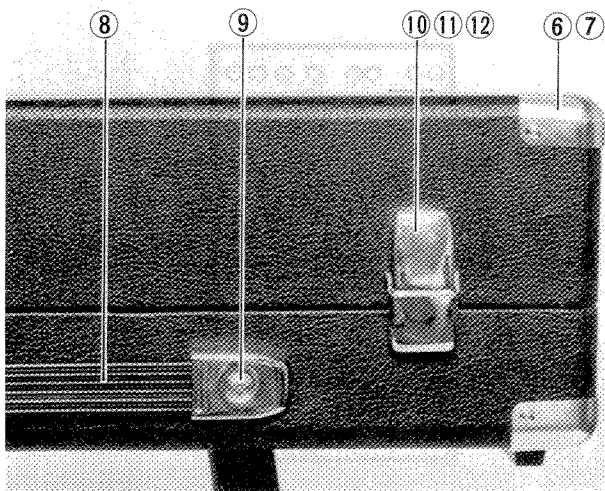
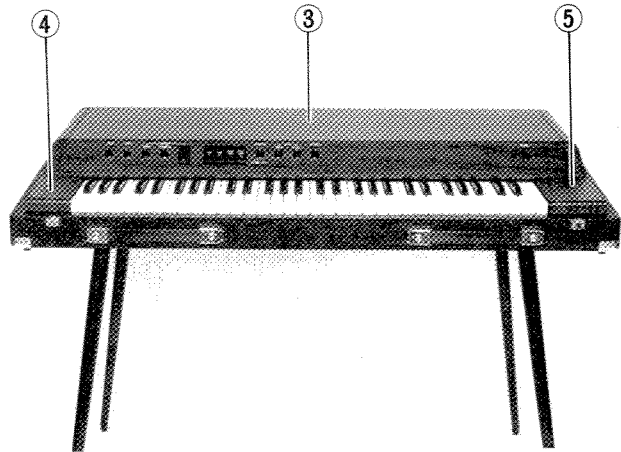
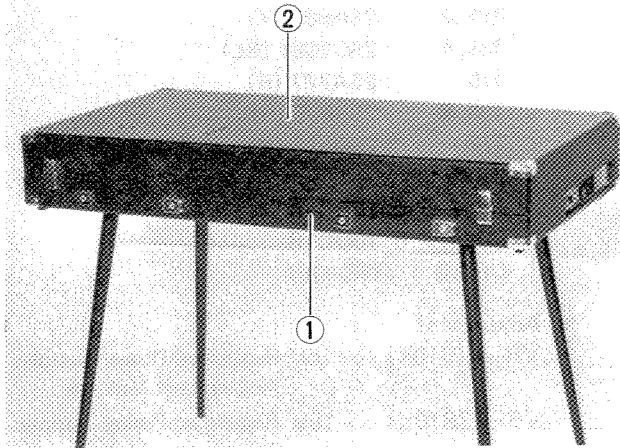
- VR-1 (B10K) +15V Regulated Power Supply Adjustment Volume
- VR-2 (B10K) -15V Regulated Power Supply Adjustment Volume



▼NOTE

	NA-NO.	CAPACITY
GENERAL • SOUTHAFRICAN & AUSTRALIAN	80313	0.5A
UL, CSA	80314	UL FUSE 0.5A
EUROPEAN BRITISH	80315	500mA

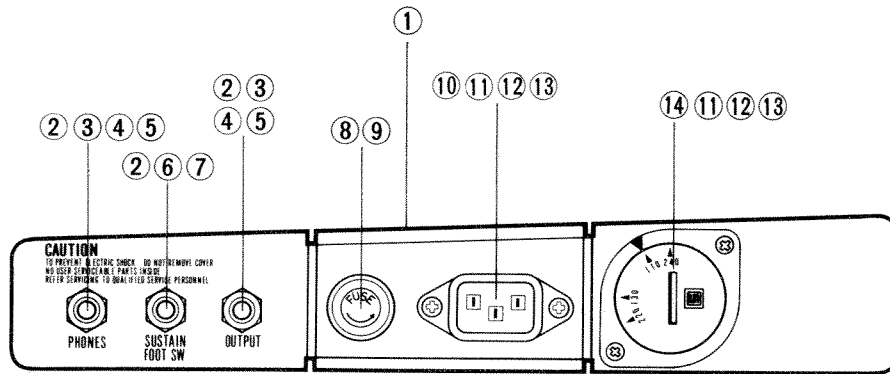
PARTS LIST



DESTINATION ABBREVIATIONS

Ge : General NE: North European Au : Australian CSA : Canadian
 UL: US BS: British SA: South African

Ref No.	Part No. (パーツ番号)	Description (部品名)	Remarks (備考)	Common Models (共通モデル)	卸 価	小売価
1	30122800021400	Bottom Frame	底 枠 集 成			
2	30122800021300	Cover	蓋 集 成			
3	30122800041010	Top Board	屋 根 集 成			
4	30122800045510	End Block (LEFT)	拍子木集成(左)			
5	30122800045520	End Block (RIGHT)	拍子木集成(右)			
6	3054000AA800790	Corner Holder Bracket	コーナール金具	CP-30		
7	4010000EZ980140	Truss Head Tapping Screw 3×12	トラスタッピングネジ 1種			
8	3010000NB805950	Handle Assembly	取 手 Ass'y	CP-30		
9	4010000EF250300	Oval Head Screw 5×30	⊕丸皿小ネジ			
10	4010000AA802450	Lock	パッチン錠	CP-30		
11	4010000EC230160	Truss Head Screw 3×16	⊕トラス小ネジ	Bottom Frame		
12	4010000EA230140	Pan Head Screw 3×14	⊕ナベ小ネジ	Cover		
13	3010000AA981810	Hanging Hinge	引 掛 蝶 番	CP-30		
14	4010000EB230100	Flat Head Screw 3×10	⊕皿小ネジ			
15	3010000CB010310	Case Leg	脚	CP-30		
16	4010000EP335200	Flat Head Wood Screw 3.5×20	⊕皿木ネジ			
17	3010000AA807200	Flange -Leg	脚 フ ラ ン ジ			
18	4010000ED340160	Bind Head Screw 4×16	⊕バインド小ネジ			
19	4010000EG350450	Oval Head Screw 5×45	尖先丸皿小ネジ			
20	4010000EK800030	Washer 5S	山形ワッシャ			
21	4010000CB010640	P-Nut	P ナ ッ ト			
22	4010000EB350350	Flat Head Screw 5×35	⊕皿小ネジ			
23	3010000NB805960	Pedal Stopper Bond Assembly	ペダール止めバンド Ass'y	CP-30		
24	3010000AA804320	Hanging Holder Bracket	引 掛 金 具	CP-30		
25	3010000CB811350	Case-AC Cord	コード収納袋			
26	3010000AA033750	Leg Stopper	脚 保 持 金 具			
27	4010000EV760200	Nut	蝶ネジM6×20	SY-2		



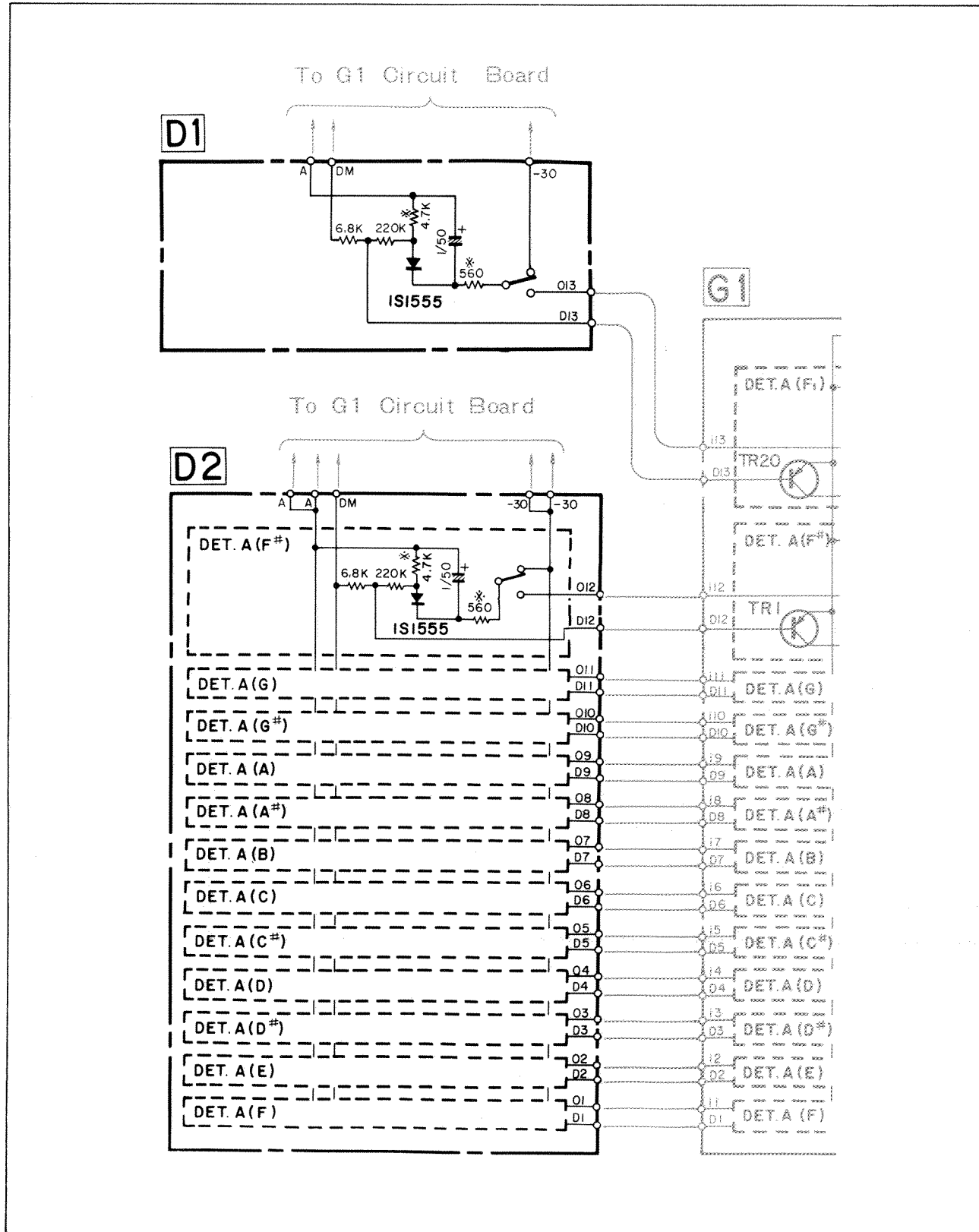
Ref. No.	Part No. (パーツ番号)	Description (部品名)	Remarks (備考)	Common Models (共通モデル)	卸 価	小売価
1	3:0:1:0:0:0:AA:8:0:6:2:6:0	Side Panel	サイドパネル	UL		
	3:0:1:0:0:0:AA:8:0:6:2:7:0	- do. -	"	CSA		
	3:0:1:0:0:0:AA:8:0:6:2:8:0	- do. -	"	Au		
	3:0:1:0:0:0:AA:8:0:6:2:9:0	- do. -	"	Ge, SA, BS, NE		
2	4:0:1:0:0:0:LB:2:0:1:1:2:0	Jack	ホーンジャック			
3	4:0:1:0:0:0:LX:2:0:0:0:1:0	Plain Washer For Phone Nut 9S	特殊平座金			
4	4:0:1:0:0:0:LX:2:0:0:0:6:0	Hexagonal Nut	特殊六角ナット			
5	4:0:1:0:0:0:EV:4:1:0:0:9:0	Toothed Lock Washer A9S	歯付座金			
6	4:0:1:0:0:0:EK:0:0:2:3:7:0	Washer	ファイバーワッシャー			
7	3:0:5:6:0:0:CB:0:6:2:0:1:0	Phone Nut	ホーンナット			
8	4:0:1:0:0:0:LB:2:0:0:4:8:0	Fuse Holder	ヒューズホルダー	BS, NE		
	4:0:1:0:0:0:LB:2:0:0:5:9:0	- do. -	ヒューズホルダー	BS, NE		
	3:0:1:0:0:0:AA:0:3:1:5:8:0	Washer - Fuse Holder	ヒューズホルダーワッシャー	BS, NE		
9	4:0:1:0:0:0:KB:0:0:0:3:1:0	Fuse 0.5A.250V	ヒューズ	GE, SA, Au		
	4:0:1:0:0:0:KB:0:0:1:1:5:0	0.5A.250V	ULヒューズ	UL, CSA		
	4:0:1:0:0:0:KB:0:0:0:7:1:0	0.5AT.250V	ミニヒューズ	BS, NE		
10	4:0:1:0:0:0:LB:3:0:0:5:6:0	AC Socket	ACソケット			
11	4:0:1:0:0:0:EA:3:3:0:0:8:0	Pan Head Screw 3×8	⊕ナベ小ネジ			
12	4:0:1:0:0:0:EV:4:1:0:0:3:0	Toothed lock Washer A3S	歯付座金			
13	4:0:1:0:0:0:EV:1:0:0:0:3:0	Hexagonal Nut M3	六角ナット			
14	4:0:1:0:0:0:LA:0:0:0:7:6:0	Lug Terminal	カラー端+板			
	4:0:1:0:0:0:EA:3:3:0:0:6:0	Pan Head Screw 3×6	⊕ナベ小ネジ			
	4:0:1:0:0:0:LB:2:0:0:2:5:0		電圧切換器	GE, SA, BS, NE		
	4:0:1:0:0:0:MG:0:0:0:5:8:0	AC Cord	電源コード	UL, CSA		
	3:0:1:2:0:0:MZ:8:0:0:6:5:0	- do. -	"	SA		
	3:0:1:2:0:0:MZ:8:0:1:7:4:0	- do. -	"	Au		
	4:0:1:0:0:0:MG:0:0:0:3:6:0	- do. -	"	NE		
	3:0:1:2:0:0:MG:8:0:1:7:5:0	- do. -	"	BS		
	4:0:1:0:0:0:MG:0:0:0:5:6:0	- do. -	"	GE		

Ref. No.	Part No. (パーツ番号)	Description (部品名)	Remarks (備考)	Common Models (共通モデル)	卸 価	小売価
	301228NA803080	G1 Circuit Board	G 1 シート			
	301228NA803090	G2 Circuit Board	G 2 シート			
	301228NA803100	G3 Circuit Board	G 3 シート			
	301228NA803110	G4 Circuit Board	G 4 シート			
	301228NA803120	G5 Circuit Board	G 5 シート			
	3010000IT253010	Integrated Circuit YM25301	iC		G 1 シート	
	3010000IG001400	-do.- YM25300	"		G 2 ~ G 5 シート	
	4010000IA084410	Transistor 2SA844 (DE)	トランジスター			
	4010000IC045850	-do.- 2SC458LG (C)	"			
	4010000IA049500	-do.- 2SA495 (QY)	"			
	4010000IC075230	-do.- 2SC752 (QY)	"			
	4010000IC082890	-do.- 2SC828 (P)	"			
	4010000IE000010	-do.- 2SK30A (Y)	"			
	4010000IF000460	Diode 1S1555	ダイオード			
	4010000IH000060	-do.- 10D-1 (10D-4)	"			
	4010000GB064560	Filter Coil 560mH	フィルターコイル			
	4010000GB064470	-do.- 470mH	"			
	4010000GB064330	-do.- 330mH	"			
	4010000GE900200	OSC Coil 1mH	O S C コイル			
	4010000GE300120	Coil 100 μ H	コイル			
	4010000FP146100	Tantalum Capacitor 1 μ F.25V	タンタルコンデンサー			
	4010000FP137100	-do.- 10 μ F.16V	"			
	4010000FD152560	Polystyrene Capacitor 560pf.50V	スチロール コンデンサー			
	4010000FD152150	-do.- 120pf.50V	"			
	301228NA803160	D1 Circuit Board SW付	D 1 シート			
	301230NA802200	D2 Circuit Board SW付	D 2 シート	CP-30		
	4010000IF000460	Diode 1S1555	ダイオード			
	4010000FJ866100	Electrolytic Capacitor 1 μ F 50V (\pm 10%)	電解コンデンサー			
	301200NA803180	C1, C2, TP Circuit Board	C1, C2, TPシート			
		C1, Circuit Board	C 1 シート			
	4010000IG001390	Integrated Circuit NJM4558DN	iC			
	4010000IF000070	Diode 1S2473	ダイオード			
	4010000IH000060	-do.- 10D-1 (10D-4)	"			
	4010000HS410490	Variable Resistor R1K	可変抵抗			
	4010000HS410480	-do.- B10K Ω	"			
	4010000HS410470	-do.- A10K Ω	"			
	4010000HS410530	-do.- C50K Ω \times 2	"			
	4010000HT410010	-do.- B220 Ω	半固定抵抗			
	4010000HT410140	-do.- B47K Ω	"			
		C2 Circuit Board	C 2 シート			
	4010000IC168120	Transistor 2SC1681(BL)	トランジスター			
	4010000HS410630	Variable Resistor A50K Ω	可変抵抗			
	4010000HS410640	-do.- B50K Ω	"			
	4010000HS410520	-do.- MN50K Ω \times 2	"			

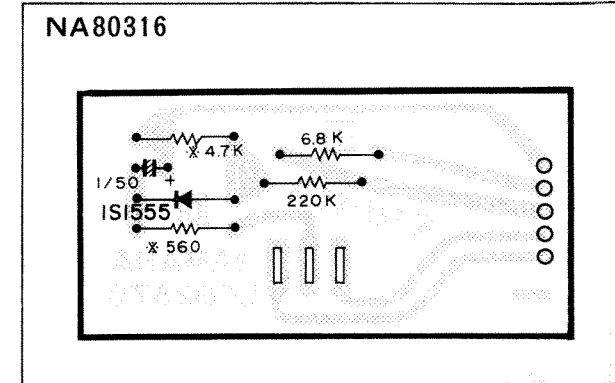


1. D1, D2 CIRCUIT BOARD

● D1 · D2 Circuit



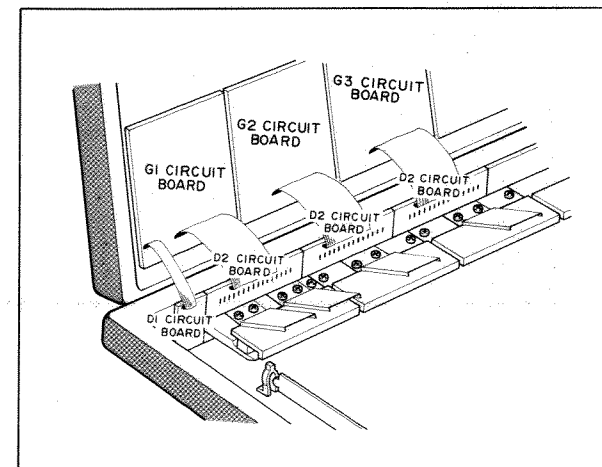
● D1 Circuit Board



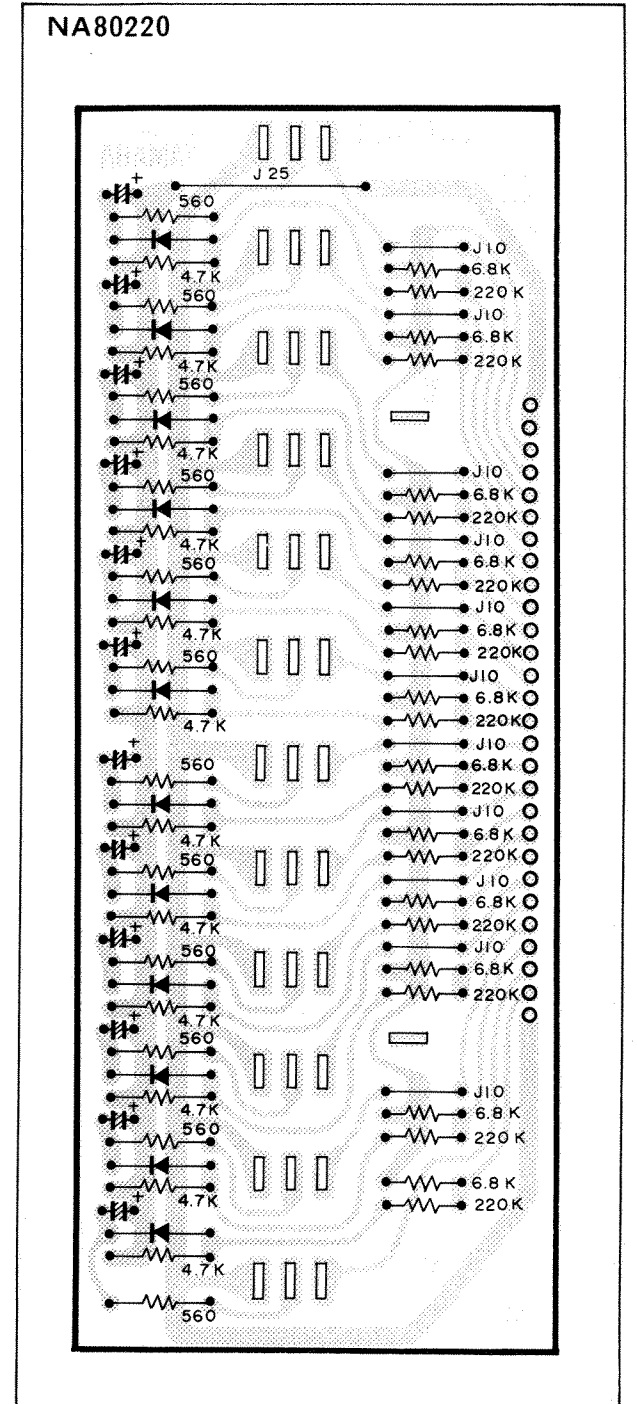
● D1, D2 Circuit Board

1. Diode
IS1555
2. Electrolytic capacitor
1/50 (±10%)
3. Resistor
Resistors, marked (*): 1/4W

● NOTE: The D circuit board and the G circuit board should be wired with jumper wires. Then fix them up with two-sided sticky tape from above.

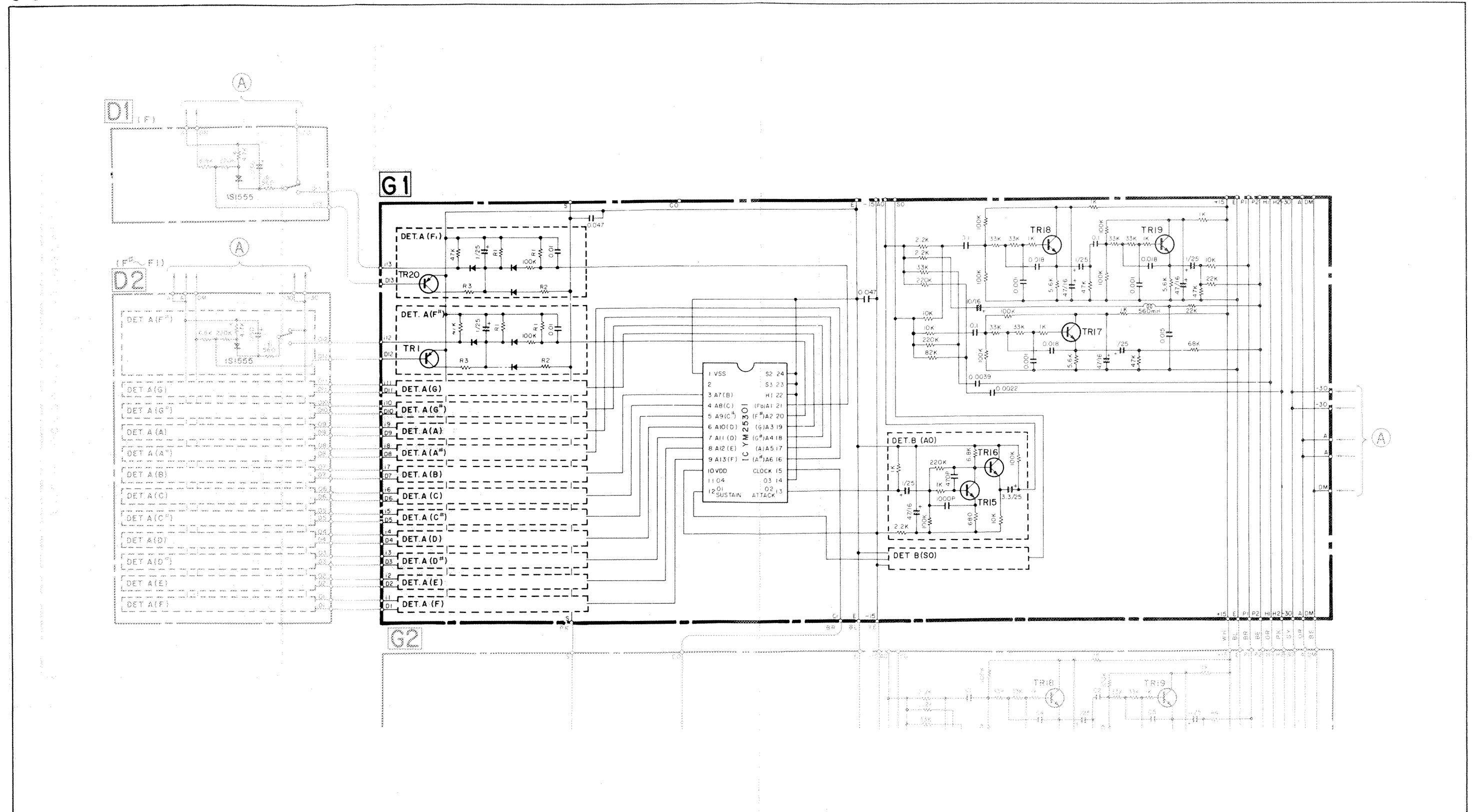


● D2 Circuit Board



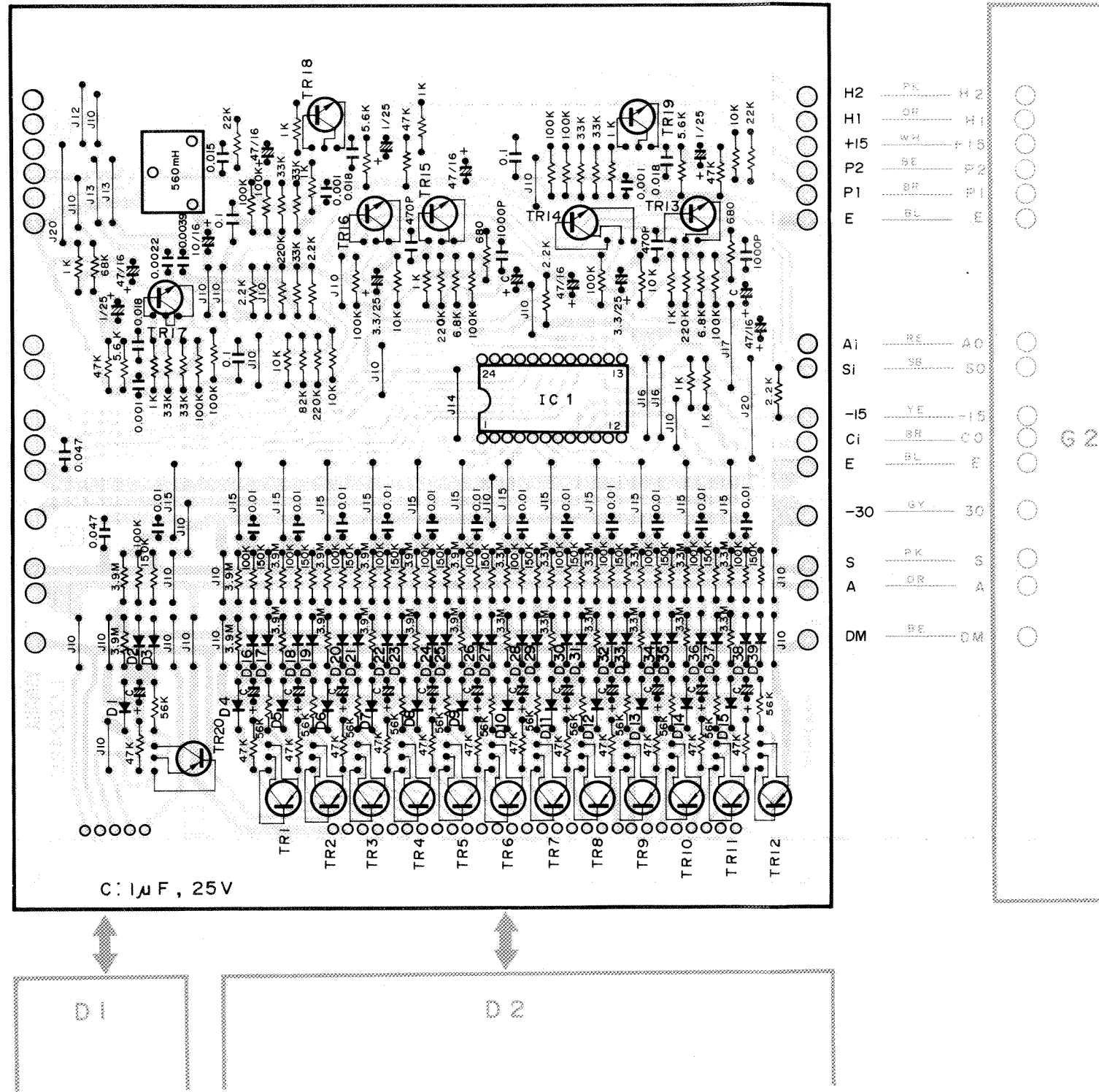
2. G1 CIRCUIT BOARD T

● G1 Circuit



● G1 Circuit Board

NA80308



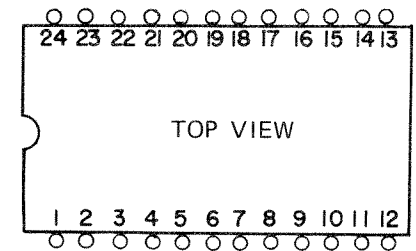
▼ Semiconductors, to be used.

1. IC1 : YM25301
2. Transistor
 Tr1 ~ 12, 20 : 2SA844 (D or E)
 Tr13 ~ 19 : 2SC458LG, (C)
3. Diode
 D1 ~ 39 : 1S1555

▼ Applied Sections

1. Drive Circuit (13 circuits)
2. Divider/Keying Circuit (iC YM25301)
3. AMP Circuit (2 circuits, Tr13, 14/15, 16)
4. RC Filter Circuit (2 circuits)
5. Active Filter Circuit (3 circuits, Tr17/18/19)
6. LC Filter Circuit

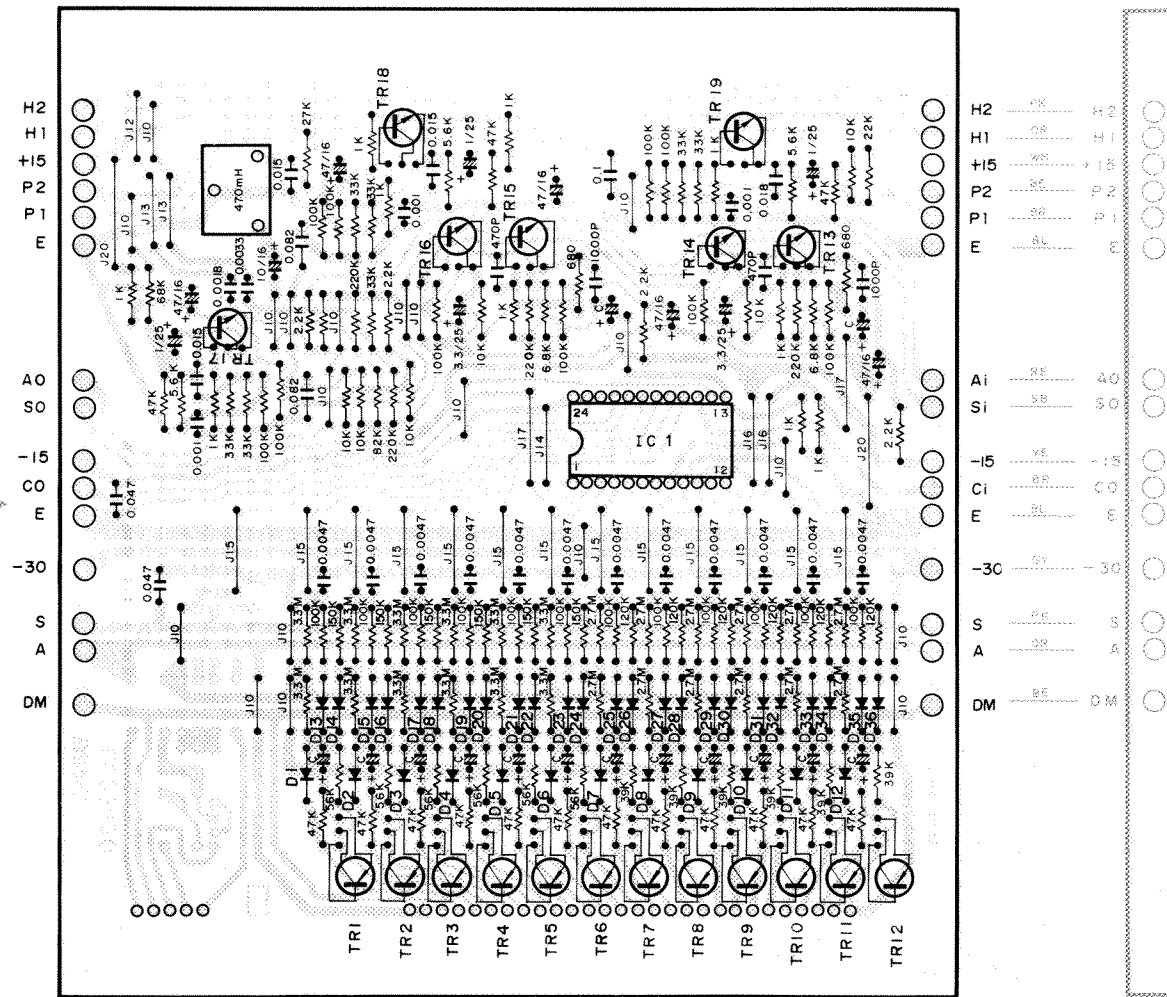
▼ (iC Terminal Description) YM253



Terminal No.	Terminal Name	Description	
1	VSS		
2	05 CLOCK OUT	Clock output terminal YM25300	
3	A7 (B)	input	
4	A8 (C)		
5	A9 (C++)		
6	A10 (D)		
7	A11 (D++)		
8	A12 (E)		
9	A13 (F)	input	
10	VDD		-15V
11	O4		
12	O1 SUSTAIN		Sustain output
13	O2 ATTACK		Attack output
14	O3		
15	CLOCK	Clock input terminal	
16	A6 (A++)	input	
17	A5 (A)		
18	A4 (G++)		
19	A3 (G)		
20	A2 (F++)		
21	A1 (F)		
22	H1		
23	S3		
24	S2		

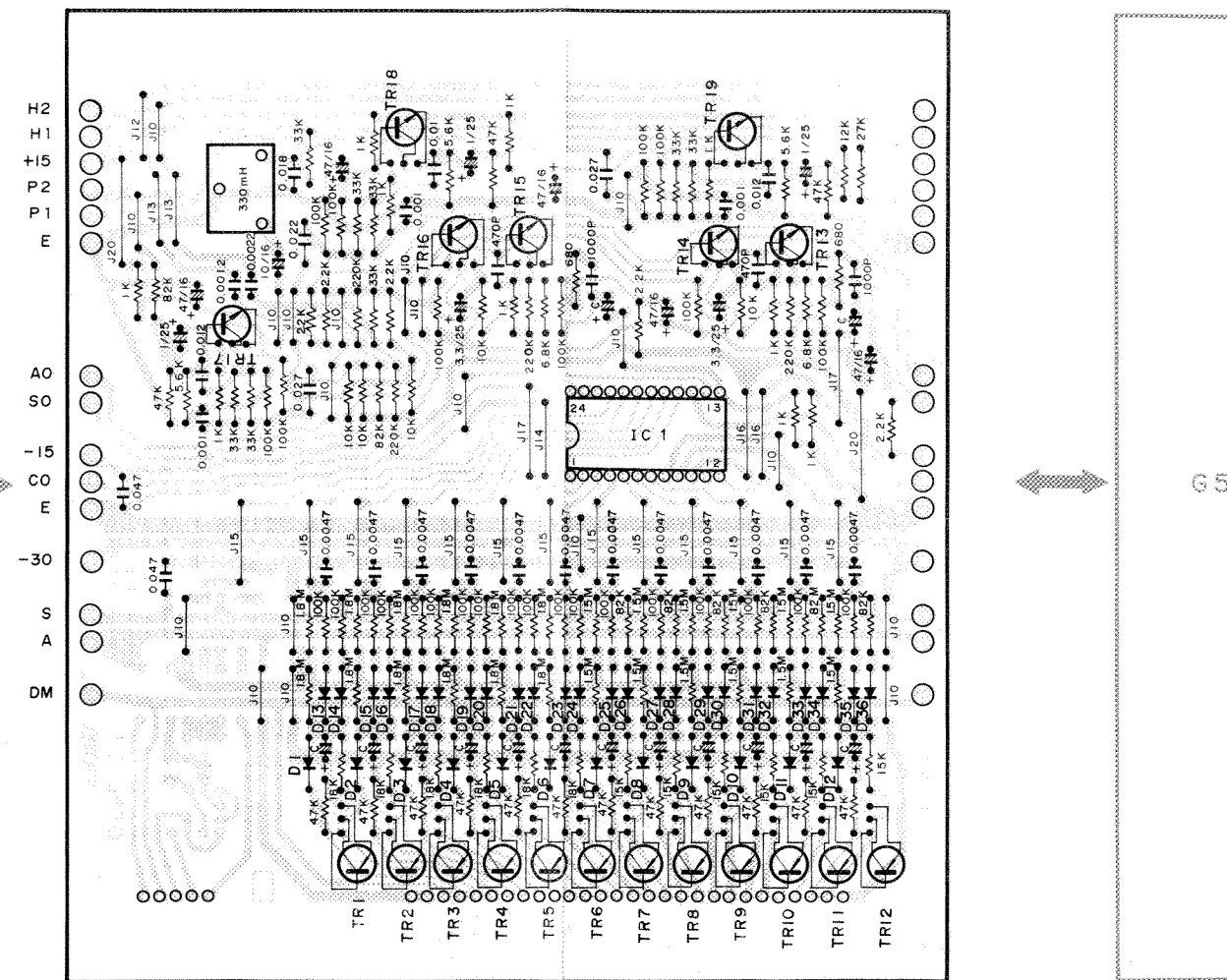
● G2 Circuit Board

NA80309



● G4 Circuit Board

NA80311



▼ Semiconductors, to be used.

1. iC
iC1 : YM25300
2. Transistor
Tr1~ 12 : 2SA844 (D or E)
Tr13~ 19 : 2SC458LG (C)

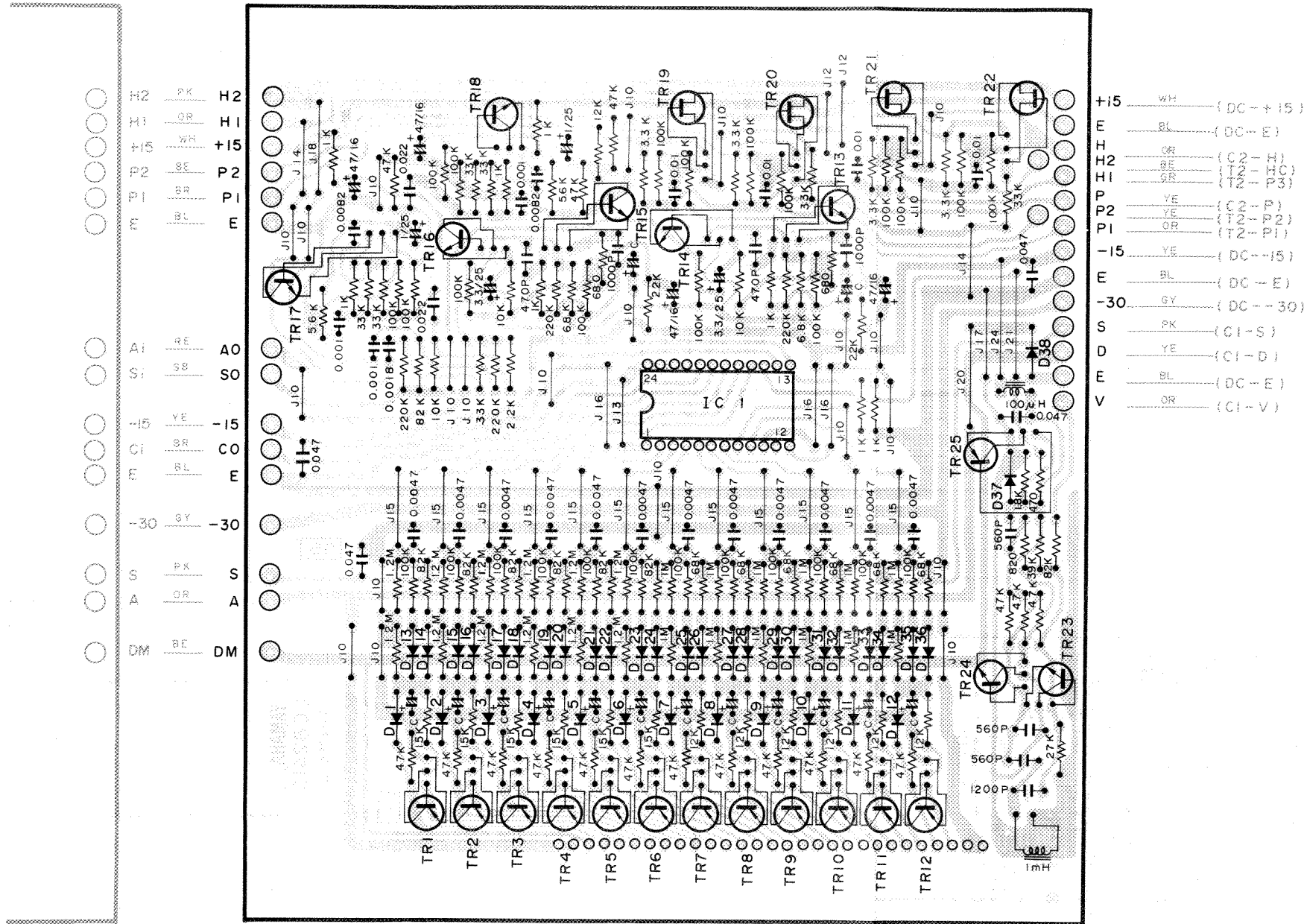
▼ Applied Sections

1. Drive Circuit (12 circuits)
2. Divider/Keying Circuit (iC YM25300)
3. AMP Circuit (2 circuits, Tr13, 14/15, 16)
4. RC Filter Circuit (2 circuits)
5. Active Filter Circuit (3 circuits, Tr17/18/19)
6. LC Filter Circuit

● G5 Circuit Board

NA80312

G4



02

▼ Semiconductors, to be used.

1. iC
iC1 : YM25300
2. Transistor
Tr1~12 : 2SA844 (D or E)
Tr13~18 : 2SC458LG (C)
Tr19~22 : 2SK30A (Y)
Tr23 : 2SC752 (O or Y)
Tr24 : 2SC828 (P)
Tr25 : 2SA495 (O or Y)
3. Diode
D1~37 : 1S1555
D38 : 1UD-1

▼ Applied Sections

1. MASTER OSC Circuit (Tr23 ~ 25)
2. Drive Circuit (12 circuits)
3. Divider/Keying Circuit (iC YM25300)
4. AMP Circuit (2 circuits, Tr13, 14/15, 16)
5. RC Filter Circuit (2 circuits)
6. Active Filter Circuit (2 circuits, Tr17/18)
7. FET SWITCHING Circuit (4 circuits Tr19/20/21/22)

