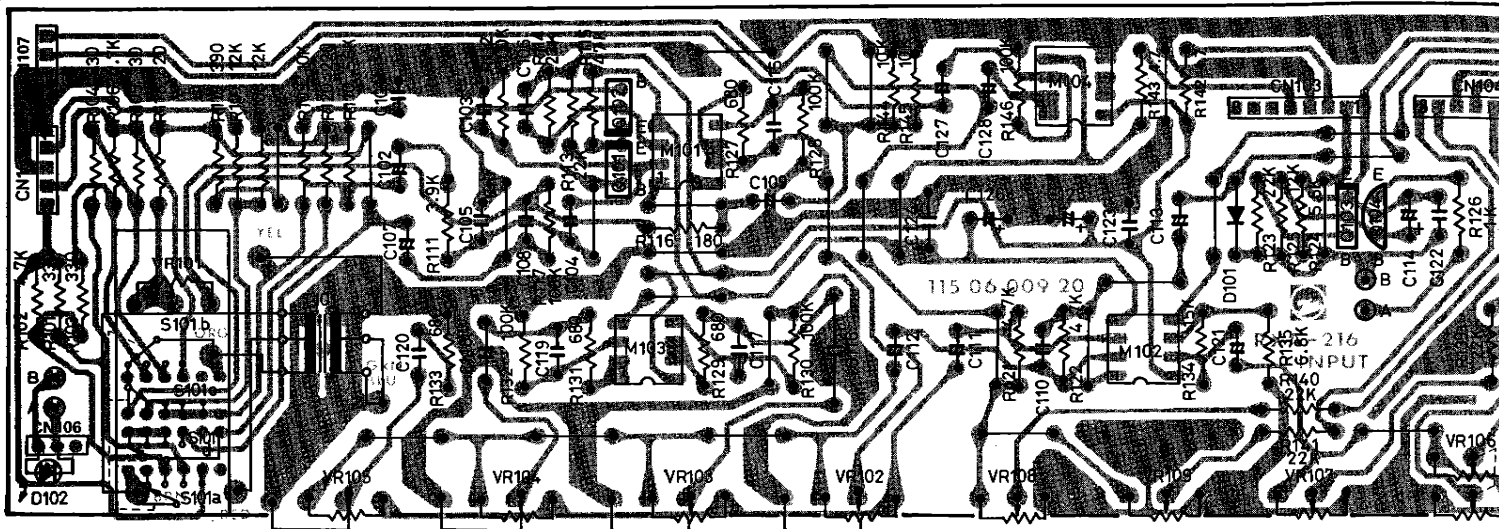
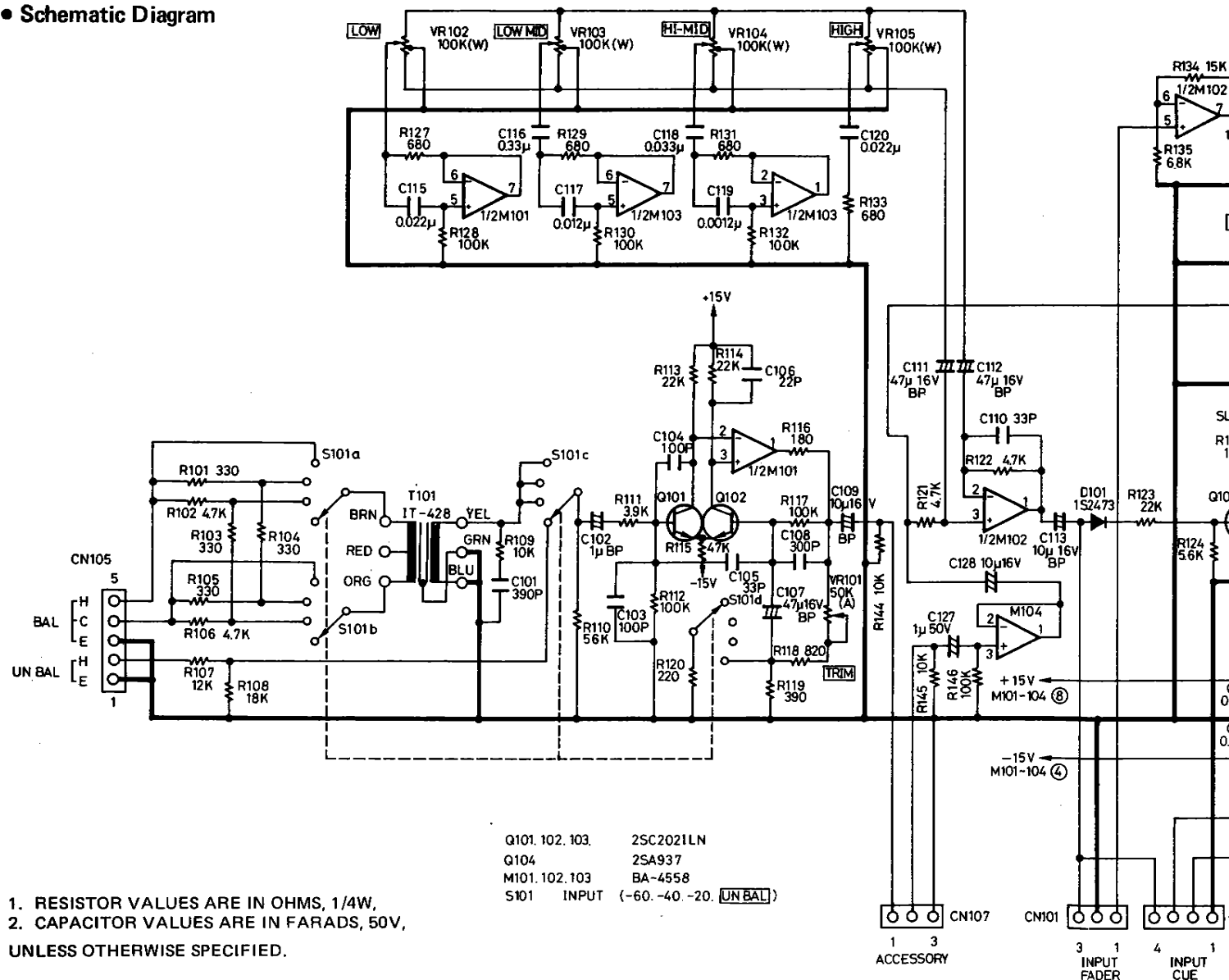


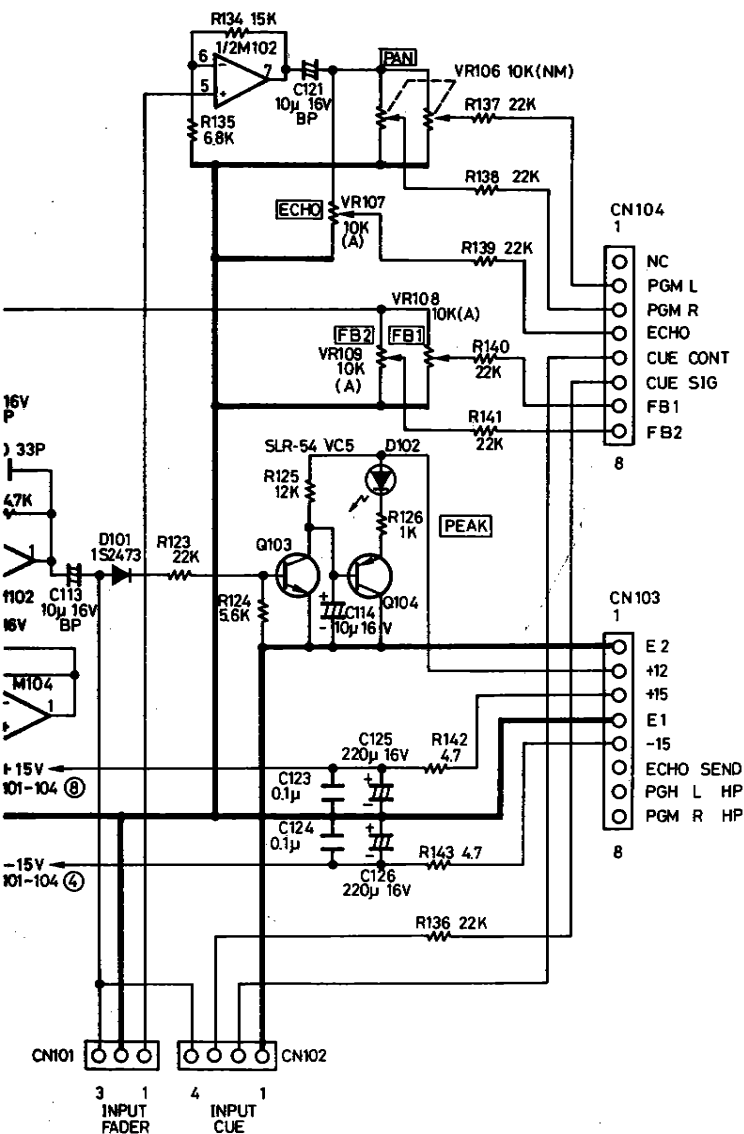
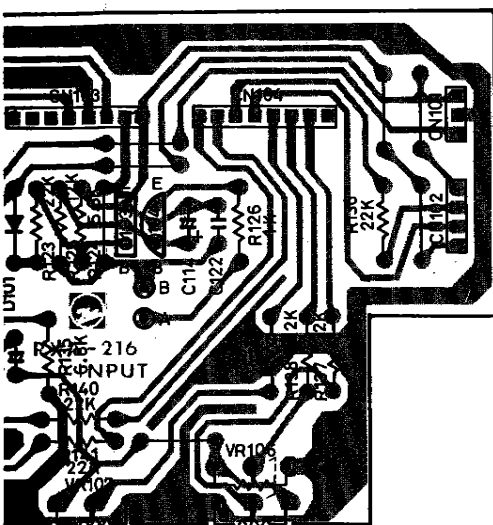
6. MOUNTING and SCHEMATIC DIAGRAMS

■ Input PCB Assembly



● Schematic Diagram



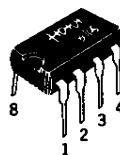


Parts List

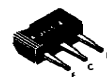
Designator	Part Code	Description
ICs		
M101 - 104	111-06-237-90	BA-4558
Transistors		
Q101 - 103	111-02-207-20	2SC2021LN
Q104	111-01-112-60	2SA937
Diodes		
D101	111-03-132-60	1S2473
D102	111-08-025-60	LED, SLR54VC
Potentiometers		
VR101 (S101)	112-70-003-2A	50k(A) w/switch, SBU44
VR102 - 105	112-04-139-10	VR16P20K, 100k(W)
VR106	112-04-140-90	VR16P20K, 10k(NM)
VR107 - 109	112-04-109-60	VR16P15K, 10k(A)
Resistors		
All the standard resistors are separately listed for their part codes. Resistance values are in ohms.		
R142, 143	112-64-025-70	4.7, 1/4W, 5%, nonflammable
Capacitors		
C101	113-35-095-70	390pF, 50V, ceramic
C102	113-02-113-80	1μF, 50V, bipolar
C103, 104	113-35-081-40	100pF, 50V, ceramic
C105	113-35-051-90	33pF, 50V, ceramic
C106	113-35-039-90	22pF, 50V, ceramic
C107	113-02-204-30	47μF, 16V, bipolar
C108	113-35-092-60	300pF, 50V, ceramic
C109	113-02-201-80	10μF, 16V, bipolar
C110	113-35-051-90	33pF, 50V, ceramic
C111, 112	113-02-204-30	47μF, 16V, bipolar
C113	113-02-201-80	10μF, 16V, bipolar
C114	113-02-323-70	10μF, 16V, elec.
C115	113-30-017-00	0.022μF, 50V, polyester
C116	113-30-031-40	0.33μF, 50V, polyester
C117	113-30-014-70	0.012μF, 50V, polyester
C118	113-30-019-20	0.033μF, 50V, polyester
C119	113-30-002-20	0.0012μF, 50V, polyester
C120	113-30-017-00	0.022μF, 50V, polyester
C121	113-02-201-80	10μF, 16V, bipolar
C122	113-06-006-50	0.01μF, 50V, mylar
C123, 124	113-06-012-60	0.1μF, 50V, mylar
C125, 126	113-02-328-20	220μF, 16V, elec.
C127	113-02-113-80	1μF, 50V, bipolar
C128	113-02-201-80	10μF, 16V, bipolar
Transformer		
T101	114-03-085-20	Input, IT-428
Connectors (PCB mount)		
CN101	123-06-304-10	3P, 171826-3
CN102	123-06-305-00	4P, 171826-4
CN103, 104	123-06-308-90	8P, 171826-8
CN105	123-06-171-50	5P, 171826-5
CN106	123-16-011-90	3P, SHVQ, LED
CN107	123-06-304-10	3P, 171826-3
E7200		PCB assembly, INPUT

As for the part codes of the standard resistors (1/4W, ±5%), refer to the list of CARBON RESISTORS on page 37.

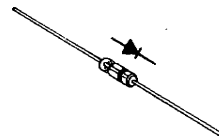
Semiconductors



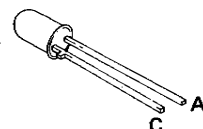
• BA-4558
(M101 ~ 104)



• 2SC2021LN (Q101 ~ 103)
• 2SA937 (Q104)

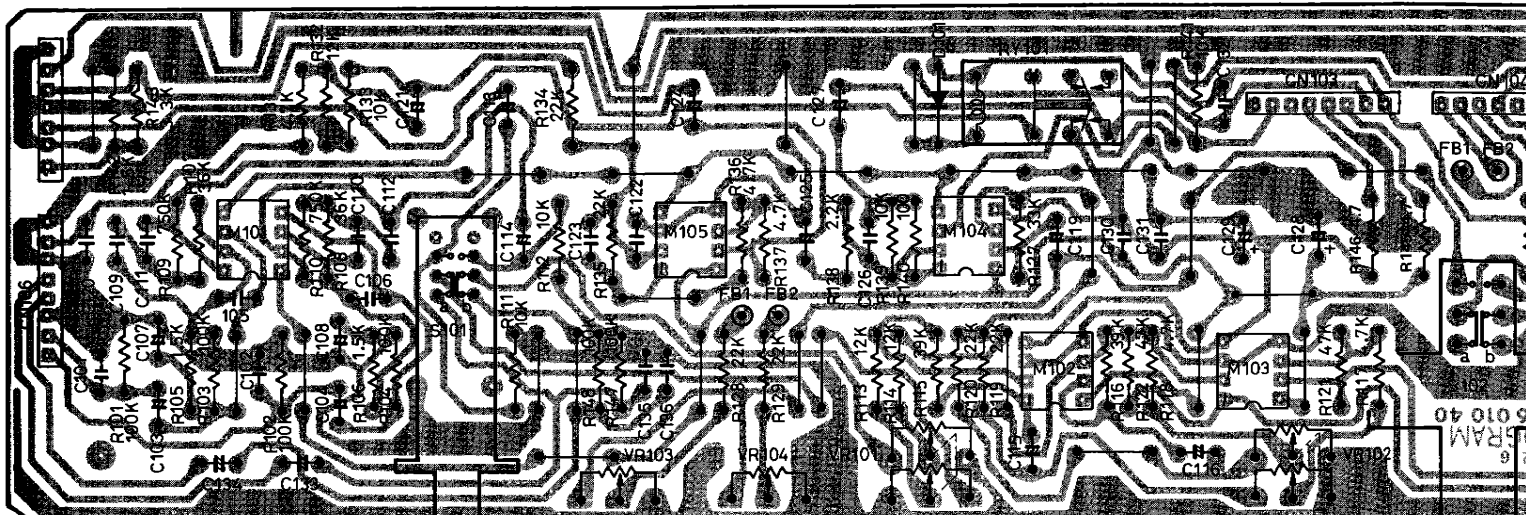


• 1S2473 (D101)

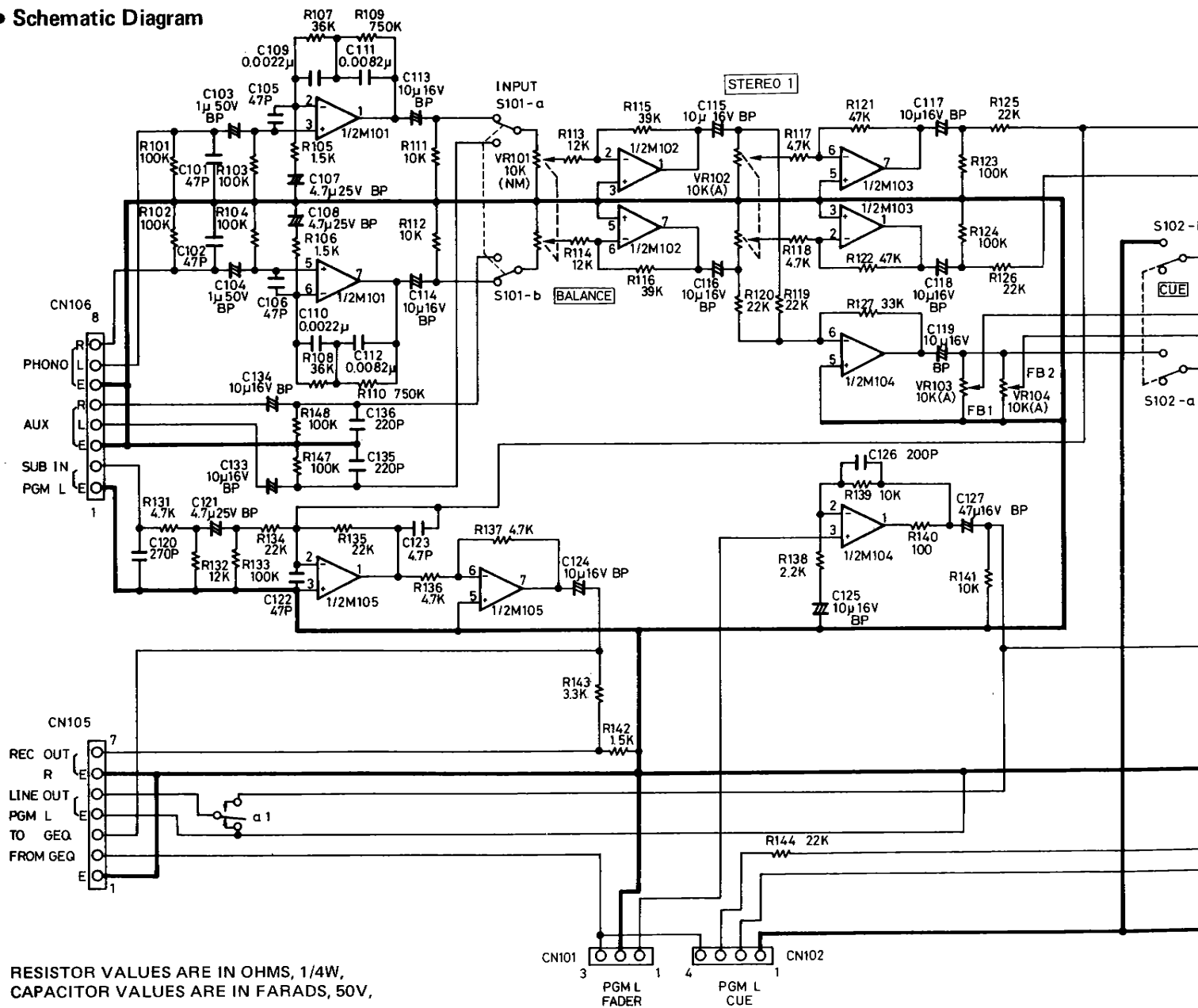


• SLR-54VC (D102)

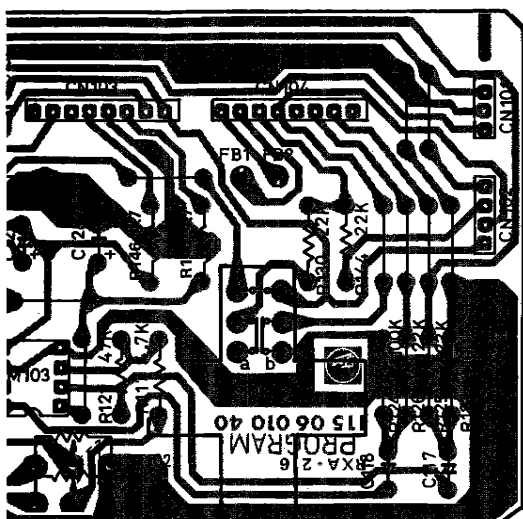
■ Program L PCB Assembly



- **Schematic Diagram**



1. RESISTOR VALUES ARE IN OHMS, 1/4W,
2. CAPACITOR VALUES ARE IN FARADS, 50V,
UNLESS OTHERWISE SPECIFIED.

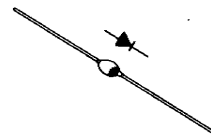
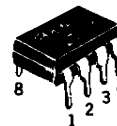
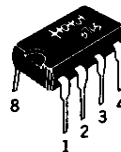


• Parts List

Designator	Part Code	Description
ICs		
M101 - 103	111-06-237-90	BA-4558
M104	111-06-198-70	NJM4556
M105	111-06-237-90	BA-4558
Diode		
D101	111-03-052-70	V06C
Potentiometers		
VR101	112-04-140-90	VR16P20K, 10k(NM)
VR102	112-02-017-60	VR16P20K, 10k(A) x 2
VR103, 104	112-04-109-60	VR16P15K, 10k(A)
Resistors		
All the standard resistors are separately listed for their part codes. Resistance values are in ohms.		
R145, 146	112-64-025-70	4.7, 1/4W, 5%, nonflammable
Capacitors		
C101, 102	113-35-063-00	47pF, 50V, ceramic
C103, 104	113-02-113-80	1μF, 50V, bipolar
C105, 106	113-35-063-00	47pF, 50V, ceramic
C107, 108	113-02-150-10	4.7μF, 25V, bipolar
C109, 110	113-30-005-30	0.0022μF, 50V, polyester
C111, 112	113-30-012-50	0.0082μF, 50V, polyester
C113 - 119	113-02-201-80	10μF, 16V, bipolar
C120	113-35-091-30	270pF, 50V, ceramic
C121	113-02-150-10	4.7μF, 25V, bipolar
C122, 123	113-35-063-00	47pF, 50V, ceramic
C124, 125	113-02-201-80	10μF, 16V, bipolar
C126	113-35-088-70	200pF, 50V, ceramic
C127	113-02-204-30	47μF, 16V, bipolar
C128, 129	113-02-328-20	220μF, 16V, elec.
C130, 131	113-06-012-60	0.1μF, 50V, mylar
C132	113-06-006-50	0.01μF, 50V, mylar
C133, 134	113-02-201-80	10μF, 16V, bipolar
C135, 136	113-35-089-40	220pF, 50V, ceramic
Relay		
RY101	115-16-060-20	G2V-2 DC12V
Switches		
S101	115-10-065-10	Lever, SLR022
S102	115-14-133-70	Push, 1FOA
Connectors (PCB mount)		
CN101	123-06-304-10	3P, 171826-3
CN102	123-06-305-00	4P, 171826-4
CN103, 104	123-06-308-90	8P, 171826-8
CN105	123-06-307-40	7P, 171826-7
CN106	123-06-308-90	8P, 171826-8
E7210		PCB assembly, PROGRAM L

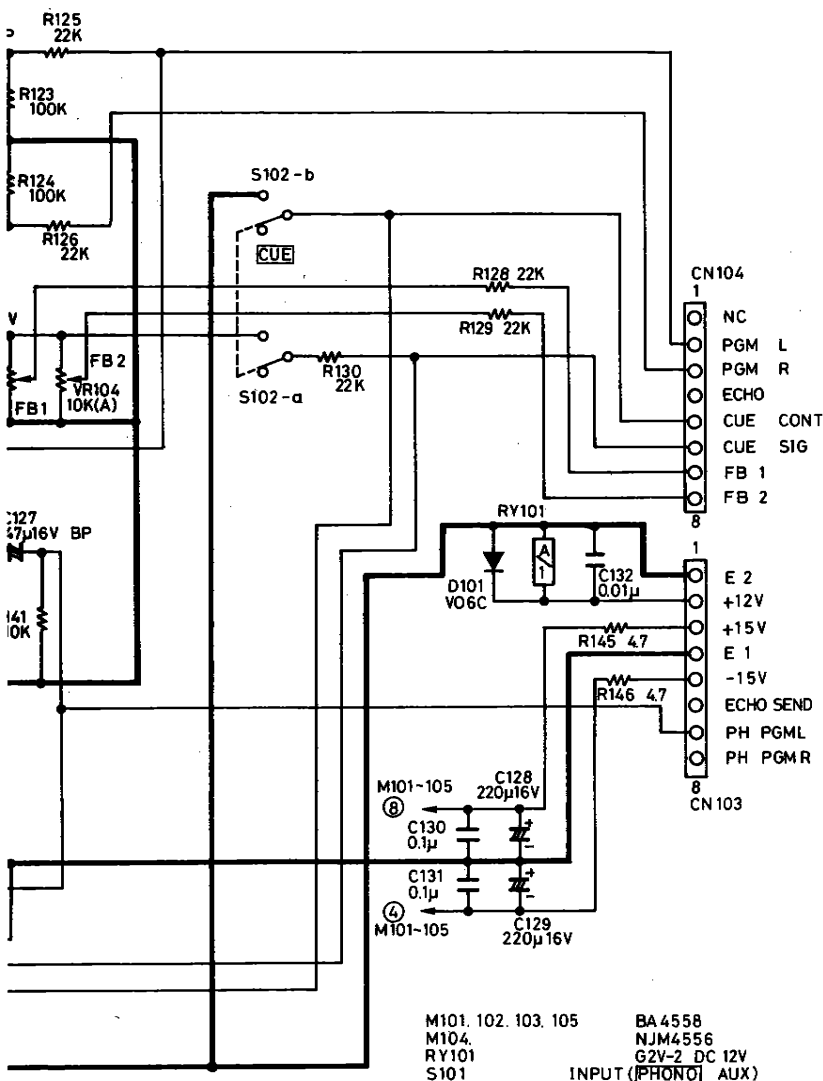
As for the part codes of the standard resistors (1/4W, ±5%), refer to the list of CARBON RESISTORS on page 37.

• Semiconductors

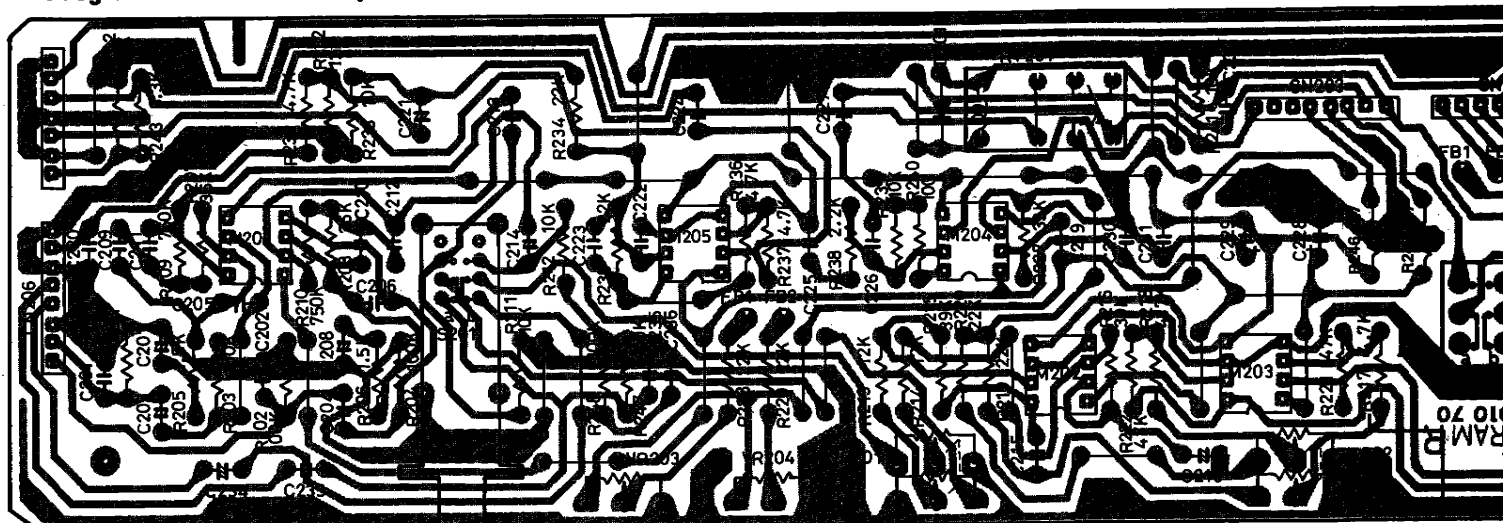


• BA-4558
(M101 ~ 103, 105)

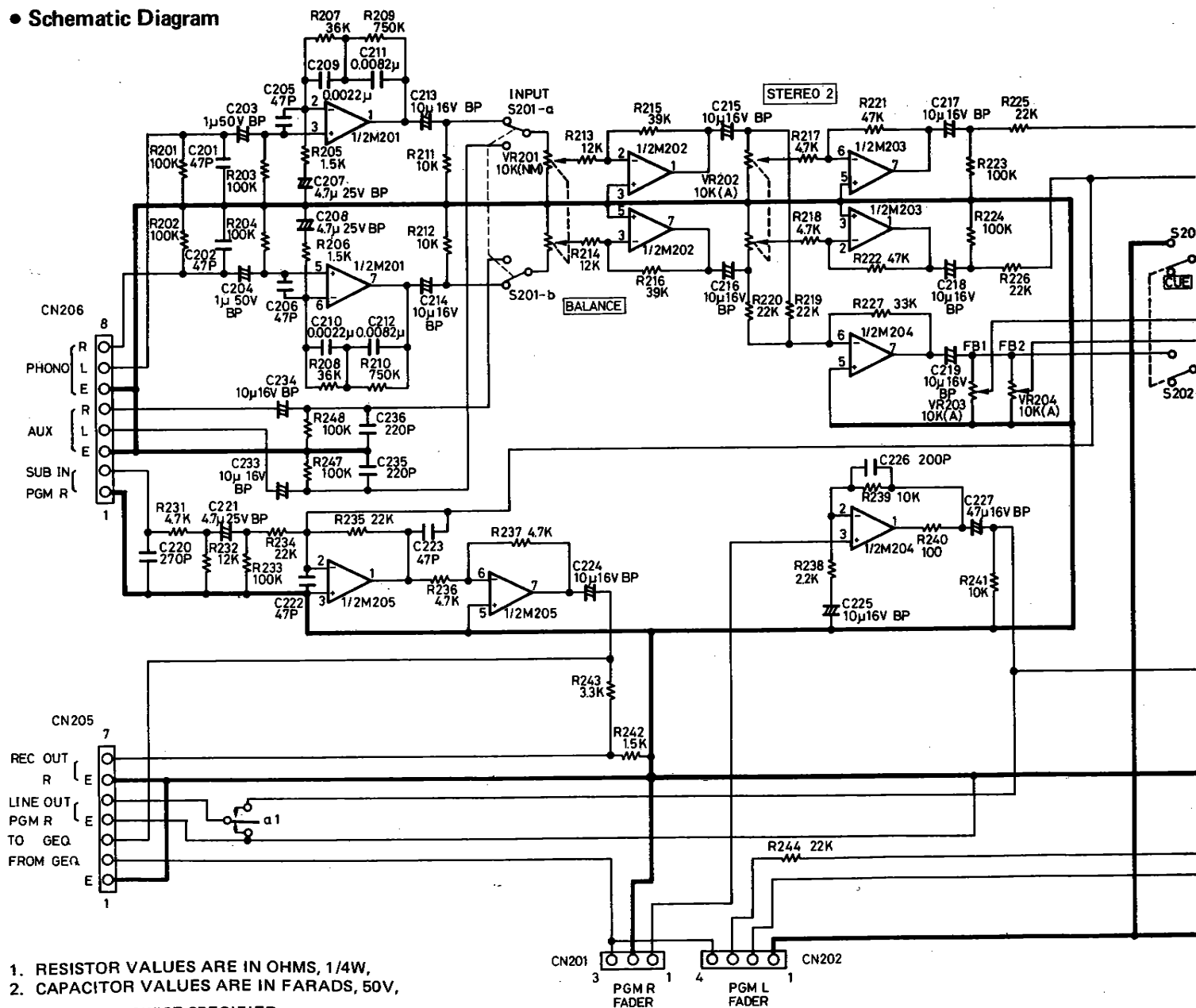
• NJM4556 (M104) • V06C (D101)

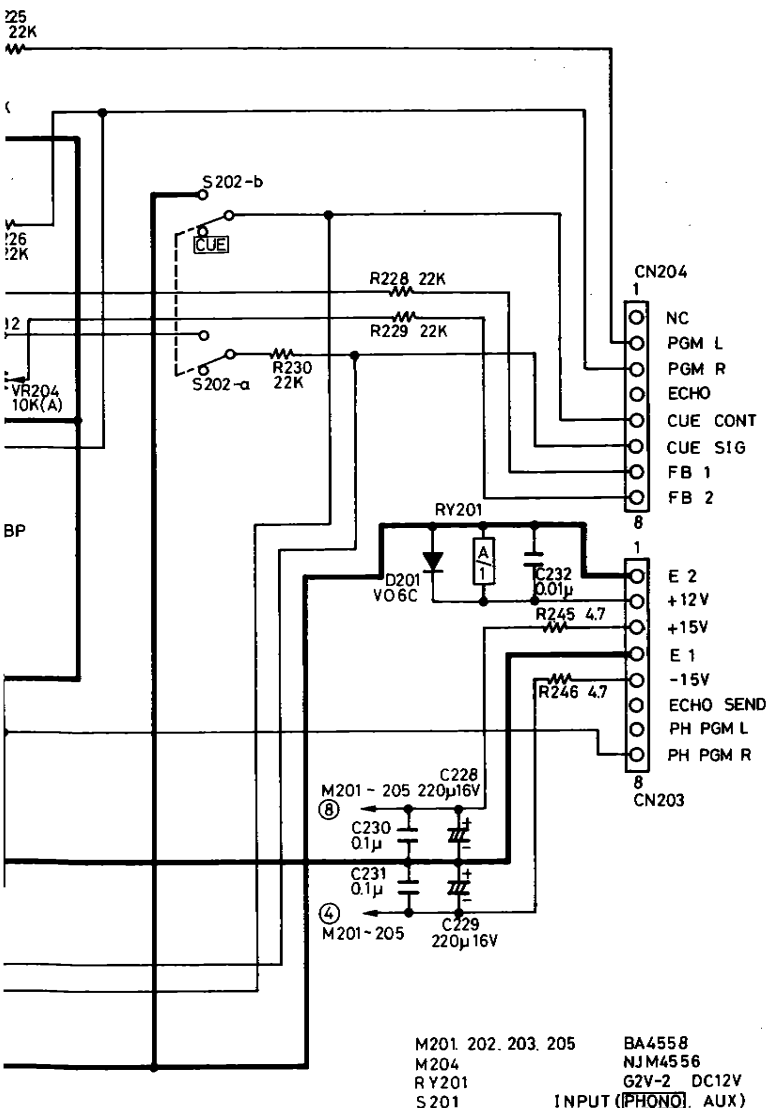
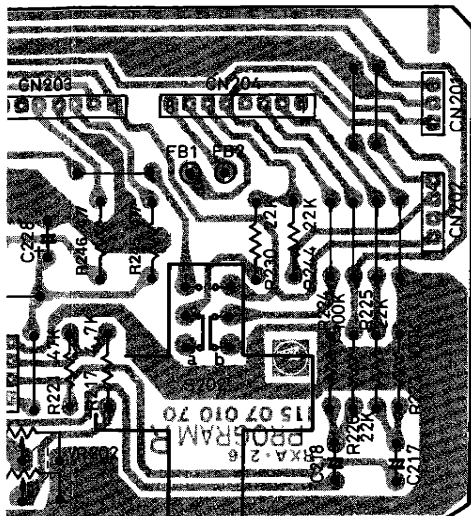


■ Program R PCB Assembly



● Schematic Diagram



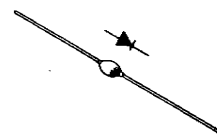
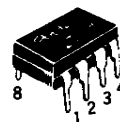
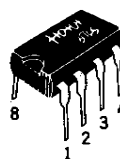


• Parts List

Designator	Part Code	Description
ICs		
M201 - 203	111-06-237-90	BA-4558
M204	111-06-198-70	NJM4556
M205	111-06-237-90	BA-4558
Diode		
D201	111-03-052-70	VO6C
Potentiometers		
VR201	112-04-140-90	VR16P20K, 10k(NM)
VR202	112-02-017-60	VR16P20K, 10k(A) x 2
VR203, 104	112-04-109-60	VR16P15K, 10k(A)
Resistors		
All the standard resistors are separately listed for their part codes. Resistance values are in ohms.		
R245, 246	112-64-025-70	4.7, 1/4W, 5%, nonflammable
Capacitors		
C201, 202	113-35-063-00	47pF, 50V, ceramic
C203, 204	113-02-113-80	1μF, 50V, bipolar
C205, 206	113-35-063-00	47pF, 50V, ceramic
C207, 208	113-02-150-10	4.7μF, 25V, bipolar
C209, 210	113-30-005-30	0.0022μF, 50V, polyester
C211, 212	113-30-012-50	0.0082μF, 50V, polyester
C213 - 219	113-02-201-80	10μF, 16V, bipolar
C220	113-35-091-30	270pF, 50V, ceramic
C221	113-02-150-10	4.7μF, 25V, bipolar
C222, 223	113-35-063-00	47pF, 50V, ceramic
C224, 225	113-02-201-80	10μF, 16V, bipolar
C226	113-35-088-70	200pF, 50V, ceramic
C227	113-02-204-30	47μF, 16V, bipolar
C228, 229	113-02-328-20	220μF, 16V, elec.
C230, 231	113-06-012-60	0.1μF, 50V, mylar
C232	113-06-006-50	0.01μF, 50V, mylar
C233, 234	113-02-201-80	10μF, 16V, bipolar
C235, 236	113-35-089-40	220pF, 50V, ceramic
Relay		
RY201	115-16-060-20	G2V-2 DC 12V
Switches		
S201	115-10-065-10	Lever, SLR022
S202	115-14-133-70	Push, 1FOA
Connectors (PCB mount)		
CN201	123-06-304-10	3P, 171826-3
CN202	123-06-305-00	4P, 171826-4
CN203, 104	123-06-308-90	8P, 171826-8
CN205	123-06-307-40	7P, 171826-7
CN206	123-06-308-90	8P, 171826-8
E7220		PCB assembly, PROGRAM R

As for the part codes of the standard resistors (1/4W, ±5%), refer to the list of CARBON RESISTORS on page 37.

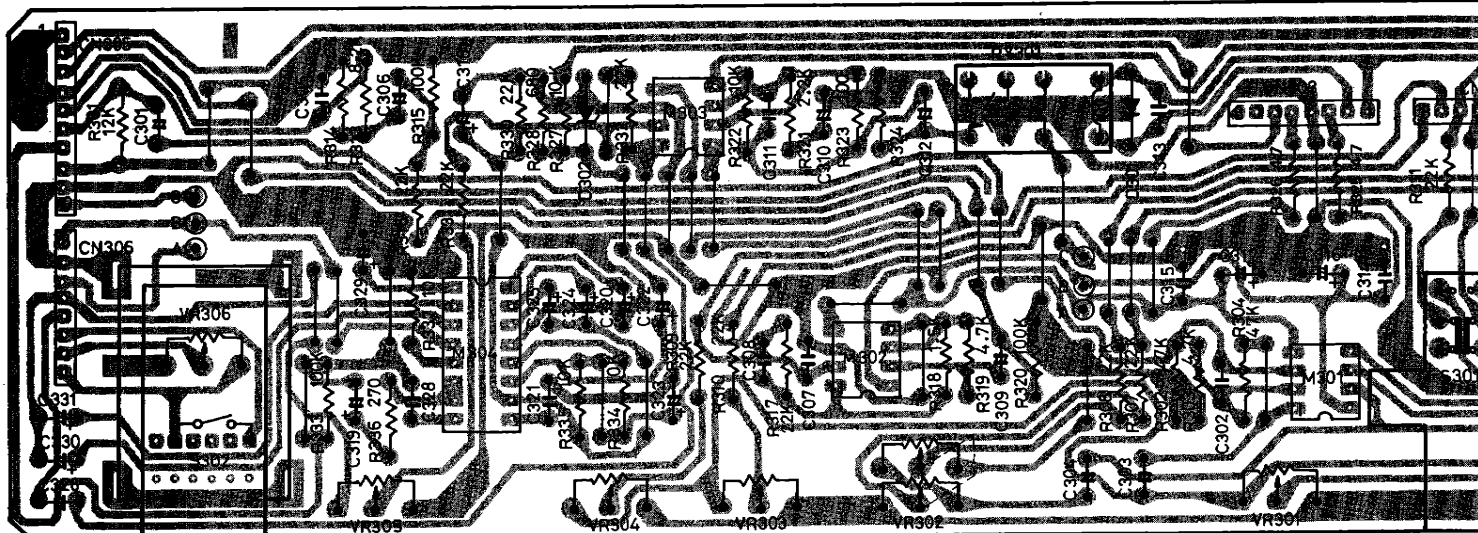
• Semiconductors



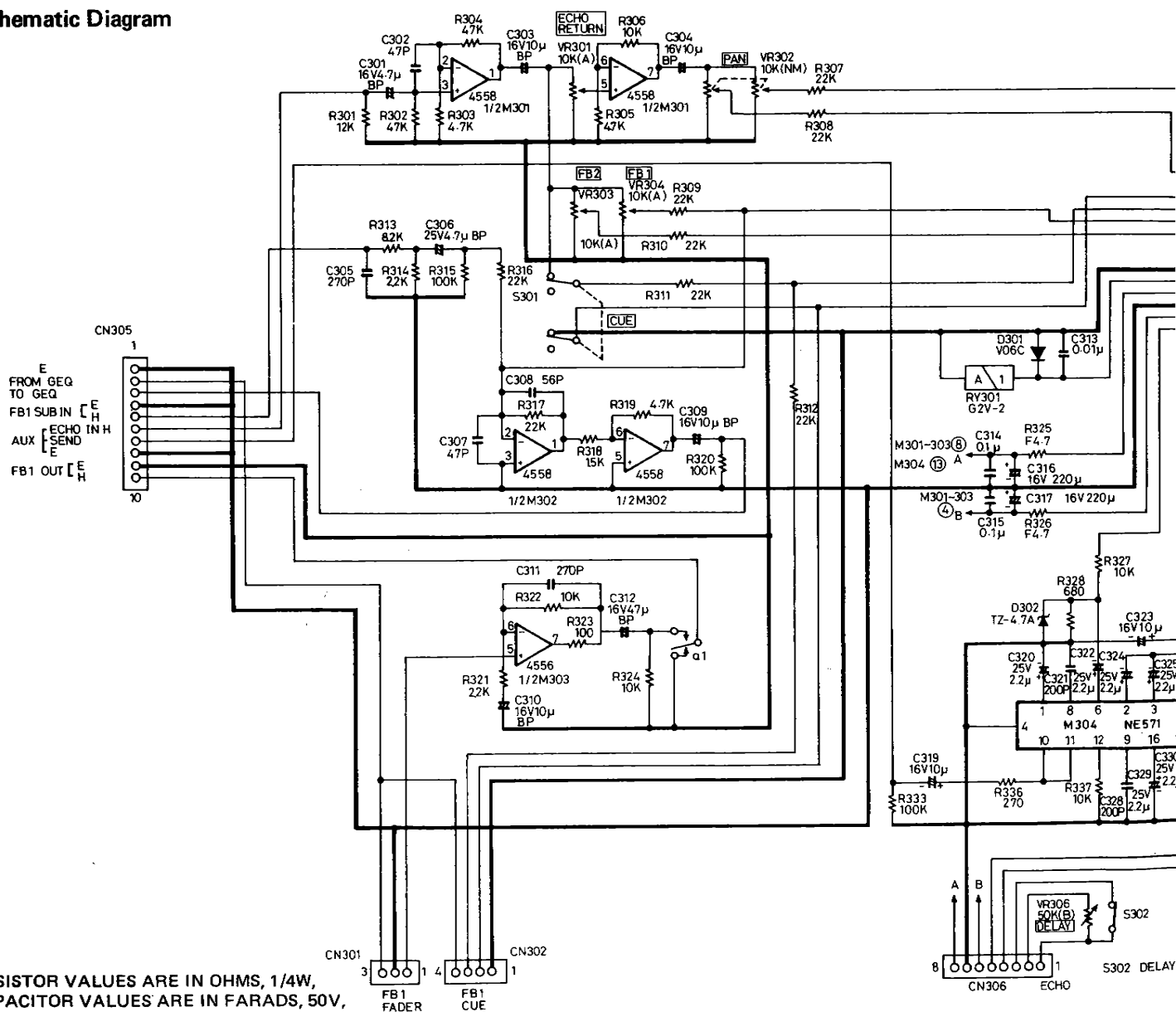
• BA-4558
(M201 ~ 203, 205)

• NJM4556 (M204)

• VO6C (D201)

B

D



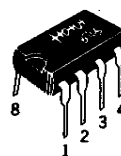
1. RESISTOR VALUES ARE IN OHMS, 1/4W,
2. CAPACITOR VALUES ARE IN FARADS, 50V,
UNLESS OTHERWISE SPECIFIED.

• Parts List

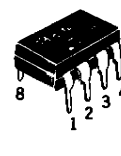
Designator	Part Code	Description
ICs		
M301, 302	111-06-237-90	BA-4558
M303	111-06-198-70	NJM4556
M304	111-06-239-10	NE571
Diodes		
D301	111-03-052-70	VO6C
D302	111-03-331-70	TZ-4.7A
Potentiometers		
VR301	112-04-085-10	VR16P20K, 10k(A)
VR302	112-04-140-90	VR16P20K, 10k(NM)
VR303, 304	112-04-109-60	VR16P15K, 10k(A)
VR305	112-04-078-30	VR16P20K, 10k(B)
VR306 (S302)	112-70-002-7A	50k(B) w/switch, SBU22
Resistors		
All the standard resistors are separately listed for their part codes. Resistance values are in ohms.		
R325, 326	112-64-025-70	4.7, 1/4W, 5%, nonflammable
Capacitors		
C301	113-02-150-10	4.7 μ F, 25V, bipolar
C302	113-35-063-00	47pF, 50V, ceramic
C303, 304	113-02-201-80	10 μ F, 16V, bipolar
C305	113-35-091-30	270pF, 50V, ceramic
C306	113-02-150-10	4.7 μ F, 25V, bipolar
C307	113-35-063-00	47pF, 50V, ceramic
C308	113-35-069-20	56pF, 50V, ceramic
C309, 310	113-02-201-80	10 μ F, 16V, bipolar
C311	113-35-091-30	270pF, 50V, ceramic
C312	113-02-204-30	47 μ F, 16V, bipolar
C313	113-06-006-50	0.01 μ F, 50V, mylar
C314, 315	113-06-012-60	0.1 μ F, 50V, mylar
C316, 317	113-02-328-20	220 μ F, 16V, elec.
C318	113-02-336-10	2.2 μ F, 25V, elec.
C319	113-02-323-70	10 μ F, 16V, elec.
C320	113-02-336-10	2.2 μ F, 25V, elec.
C321	113-35-088-70	200pF, 50V, ceramic
C322	113-02-336-10	2.2 μ F, 25V, elec.
C323	113-02-323-70	10 μ F, 16V, elec.
C324, 325	113-02-336-10	2.2 μ F, 25V, elec.
C326	113-02-201-80	10 μ F, 16V, bipolar
C328	113-35-088-70	200pF, 50V, ceramic
C329 - 331	113-02-336-10	2.2 μ F, 25V, elec.
Relay		
RY301	115-16-060-20	G2V-2 DC 12V
Switch		
S301	115-14-133-70	Push, 1FOA
Connectors (PCB mount)		
CN301	123-06-304-10	3P, 171826-3
CN302	123-06-305-00	4P, 171826-4
CN303, 304	123-06-308-90	8P, 171826-8
CN305	123-06-590-60	10P, 1-171826-0
CN306	123-06-308-90	8P, 171826-8
	102-22-187-90	Shield cover, switch
	E7230	PCB assembly, FB 1

As for the part codes of the standard resistors (1/4W, $\pm 5\%$), refer to the list of CARBON RESISTORS on page 37.

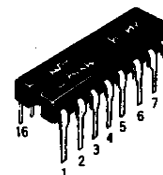
• Semiconductors



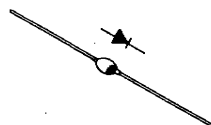
• BA-4558 (M301, 302)



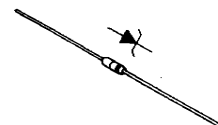
• NJM4556 (M303)



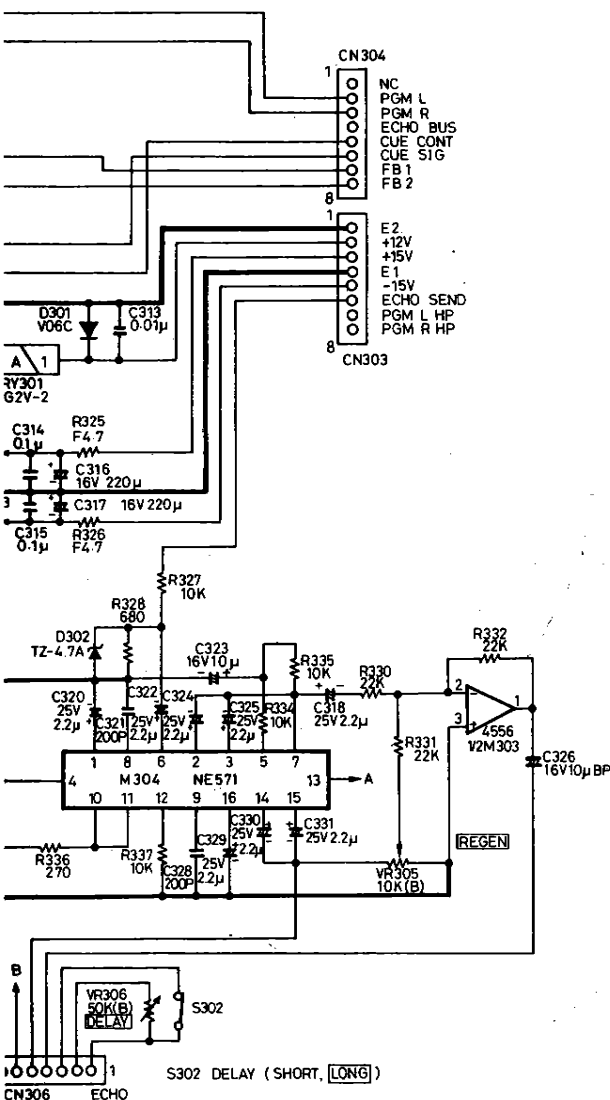
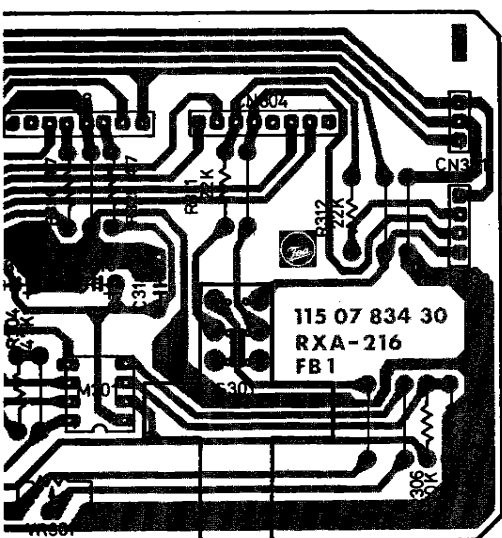
• NE571 (M304)



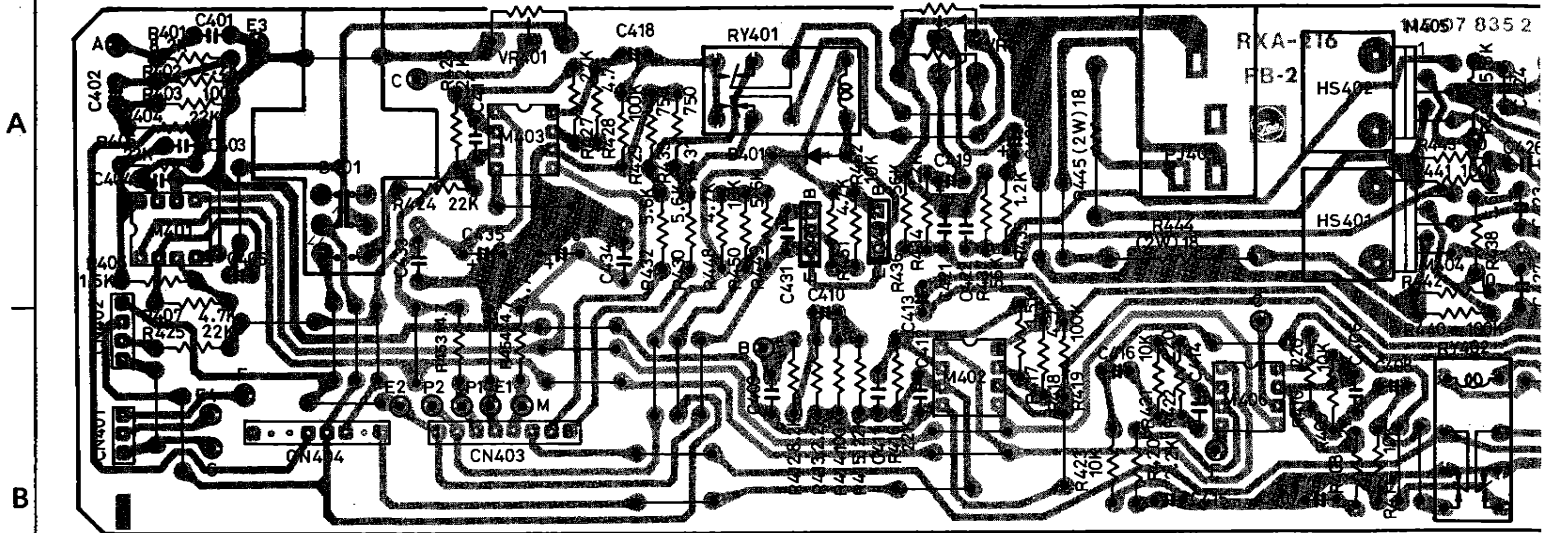
• VO6C (D301)



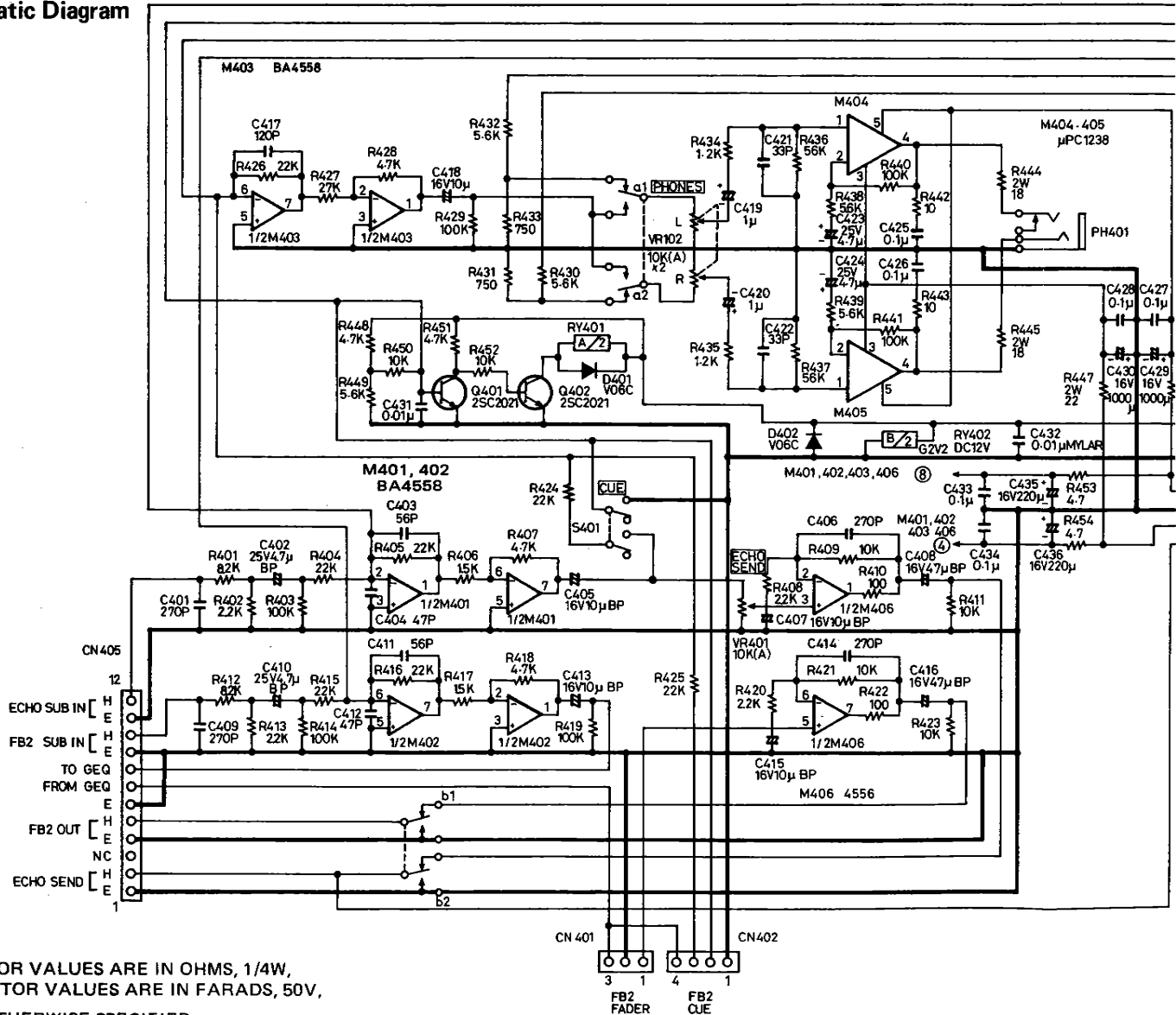
• TZ-4.7A (D302)



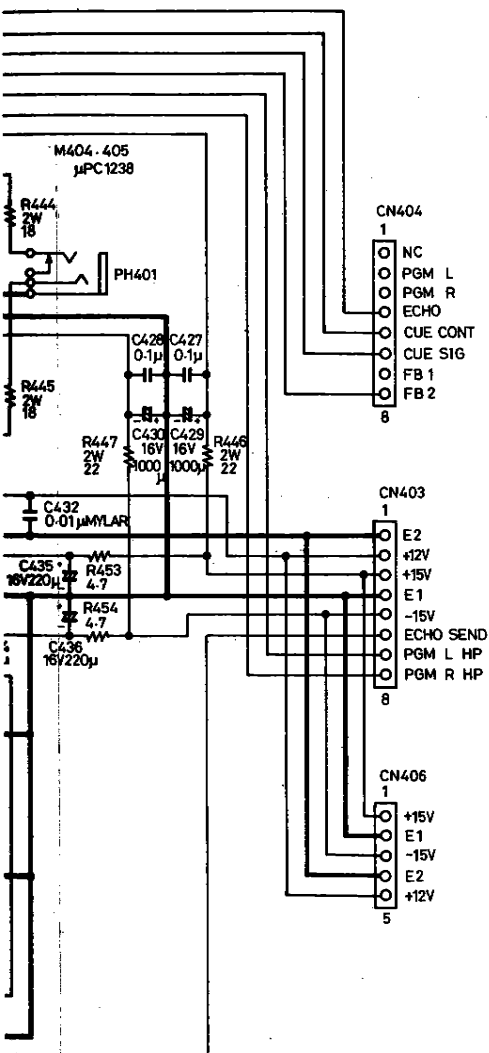
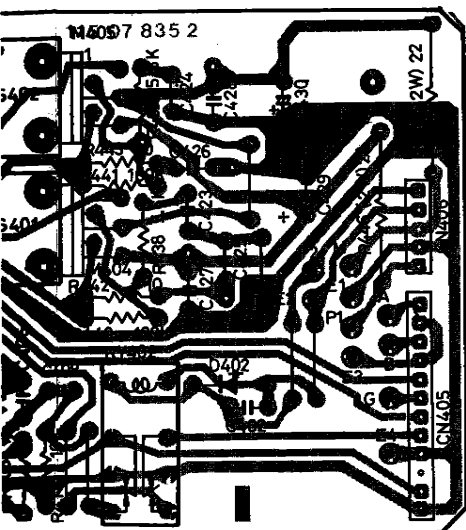
■ FB 2 (Foldback) PCB Assembly



• Schematic Diagram



1. RESISTOR VALUES ARE IN OHMS, 1/4W,
2. CAPACITOR VALUES ARE IN FARADS, 50V,
UNLESS OTHERWISE SPECIFIED.

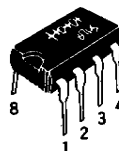


Parts List

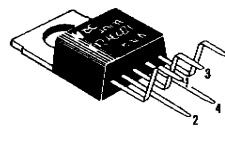
Designator	Part Code	Description
ICs		
M401 ~ 403	111-06-237-90	BA-4558
M404, 405	111-06-240-90	μPC1238
M406	111-06-198-70	NJM4556
Transistors		
Q401, 402	111-02-207-20	2SC2021LN
Diodes		
D401, 402	111-03-052-70	VO6C
Potentiometers		
VR401	112-04-085-10	VR16P20K, 10k(A)
VR402	112-02-017-60	VR16P20K, 10k(A) x 2
Resistors		
All the standard resistors are separately listed for their part codes. Resistance values are in ohms.		
R444, 445	112-62-048-00	18, 2W, 5%, metal film
R446, 447	112-62-050-70	22, 2W, 5%, metal film
R453, 454	112-64-025-70	4.7, 1/4W, 5%, nonflammable
Capacitors		
C401	113-35-091-30	270pF, 50V, ceramic
C402	113-02-150-10	4.7μF, 25V, bipolar
C403	113-35-069-20	56pF, 50V, ceramic
C404	113-35-063-00	47pF, 50V, ceramic
C405	113-02-201-80	10μF, 16V, bipolar
C406	113-35-091-30	270pF, 50V, ceramic
C407	113-02-201-80	10μF, 16V, bipolar
C408	113-02-204-30	47μF, 16V, bipolar
C409	113-35-091-30	270pF, 50V, ceramic
C410	113-02-150-10	4.7μF, 25V, bipolar
C411	113-35-069-20	56pF, 50V, ceramic
C412	113-35-063-00	47pF, 50V, ceramic
C413	113-02-201-80	10μF, 16V, bipolar
C414	113-35-091-30	270pF, 50V, ceramic
C415	113-02-201-80	10μF, 16V, bipolar
C416	113-02-204-30	47μF, 16V, bipolar
C417	113-35-349-10	120pF, 50V, ceramic
C418	113-02-201-80	10μF, 16V, bipolar
C419, 420	113-02-362-20	1μF, 50V, elec.
C421, 422	113-35-275-10	33pF, 50V, ceramic
C423, 424	113-02-338-90	4.7μF, 25V, elec.
C425 ~ 428	113-06-012-60	0.1μF, 50V, mylar
C429, 430	113-02-331-60	1000μF, 16V, elec.
C431	113-35-223-00	0.01μF, 50V, ceramic
C432	113-06-006-50	0.01μF, 50V, mylar
C433, 434	113-06-012-60	0.1μF, 50V, mylar
C435, 436	113-02-328-20	220μF, 16V, elec.
Relays		
RY401, 402	115-16-060-20	G2V-2 DC 12V
Switch		
SW401	115-14-133-70	Push, 1FOA
Connectors (PCB mount)		
CN401	123-06-304-10	3P, 171826-3
CN402	123-06-305-00	4P, 171826-4
CN403, 404	123-06-308-90	8P, 171826-8
CN405	123-06-320-30	12P, 1-171826-2
CN406	123-06-171-50	5P, 171826-5
PH401	123-03-133-80	Phone jack, 6T-21K0001
HS401, 402	101-08-173-30	Heat sink
E7240		PCB assembly, FB 2

As for the part codes of the standard resistors (1/4W, ±5%), refer to the list of CARBON RESISTORS on page 37.

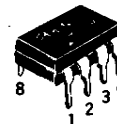
Semiconductors



• BA-4558
(M401 ~ 403)



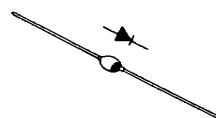
• μPC1238
(M404, 405)



• NJM4556 (M406)



• 2SC2021LN
(Q401, 402)



• VO6C
(D401, 402)