

Service manual

SUB FOCUS

Powered Subwoofer
featuring

ace-bass
TECHNOLOGY

World patents:
Australia 508491
Great Britain 1565858
Canada 1083490
Sweden 7603585.6
USA 4.118.600



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Audio Pro AB. Box 1015. S-251 10 HELSINGBORG
SWEDEN


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Technical data Sub Focus

Enclosure:	400W ACE Bass powered, bass reflex.
Drive units, Woofer:	10" long throw woofer
Effective frequency range:	23-100 Hz
Crossover -Lo Pass:	50-100 Hz, variable 24dB / octave
High Pass:	100 Hz 6dB / octave
Power requirements:	AC 230V 50HZ
Power consumption (max):	400W

Adjustment of negative output resistance in Sub Focus amplifier

Set jumper "Set 1" on power amp pcb in Trim position.

Connect a signal generator to input and an AC voltmeter to speaker output.

Set level and frequency controls to maximum (fully clockwise) and switch amplifier on.

Set signal generator to 40 Hz and adjust level until AC voltmeter on speaker output reads 1.00 V under no load condition.

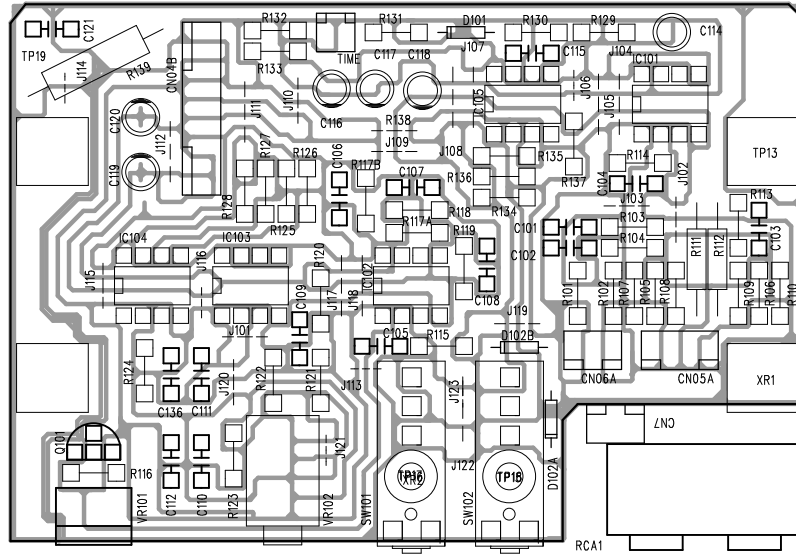
Connect a resistor 4.00 Ohm (1%, 5W) to speaker output.

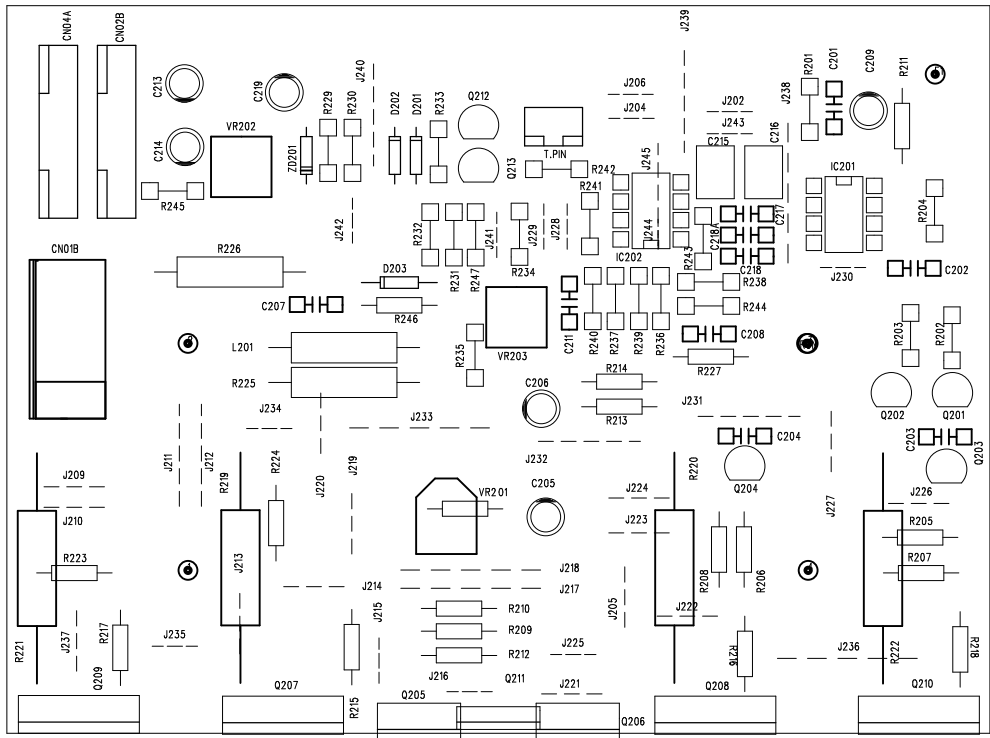
Adjust trim-potentiometer VR 202 until AC voltmeter reads 3.00V.

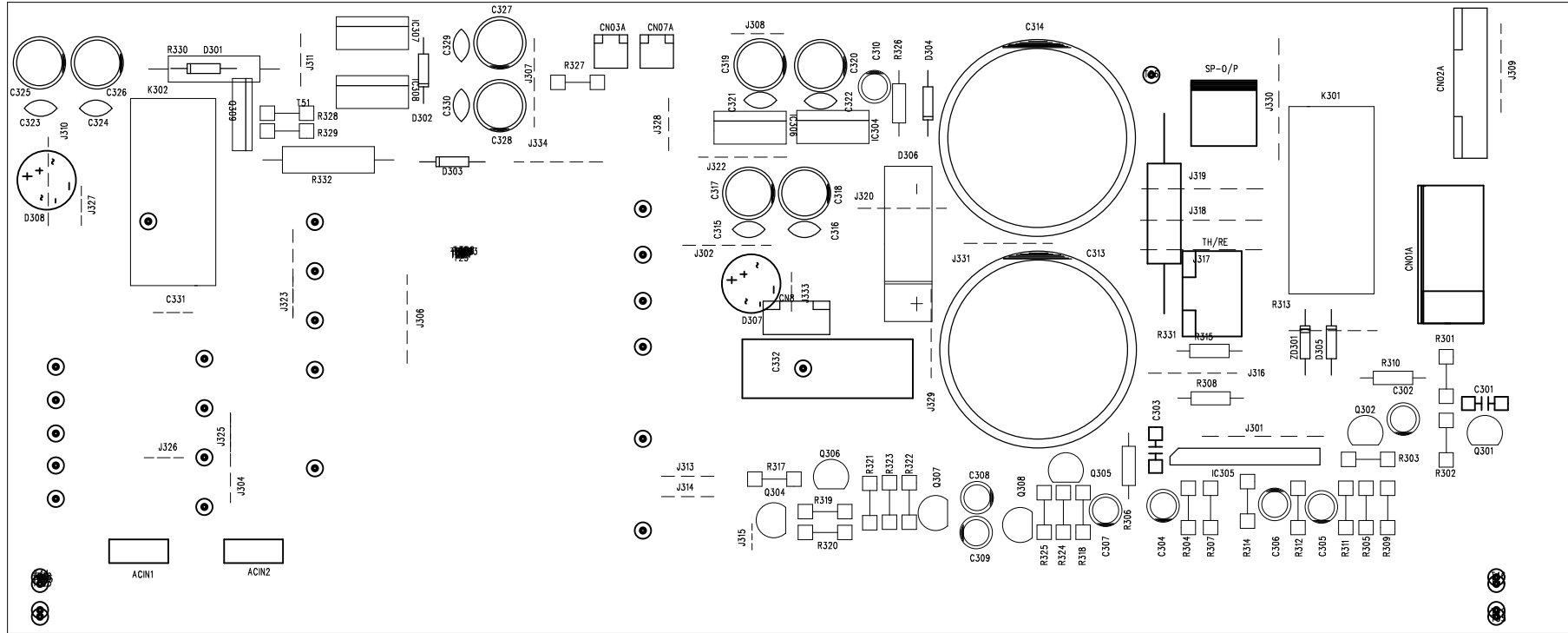
Switch amplifier off and set jumper in Run position.

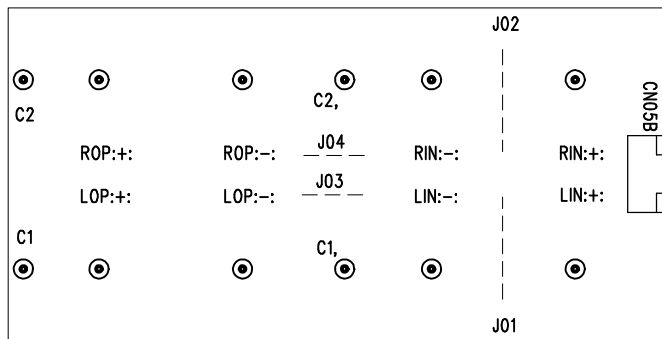
Important note!

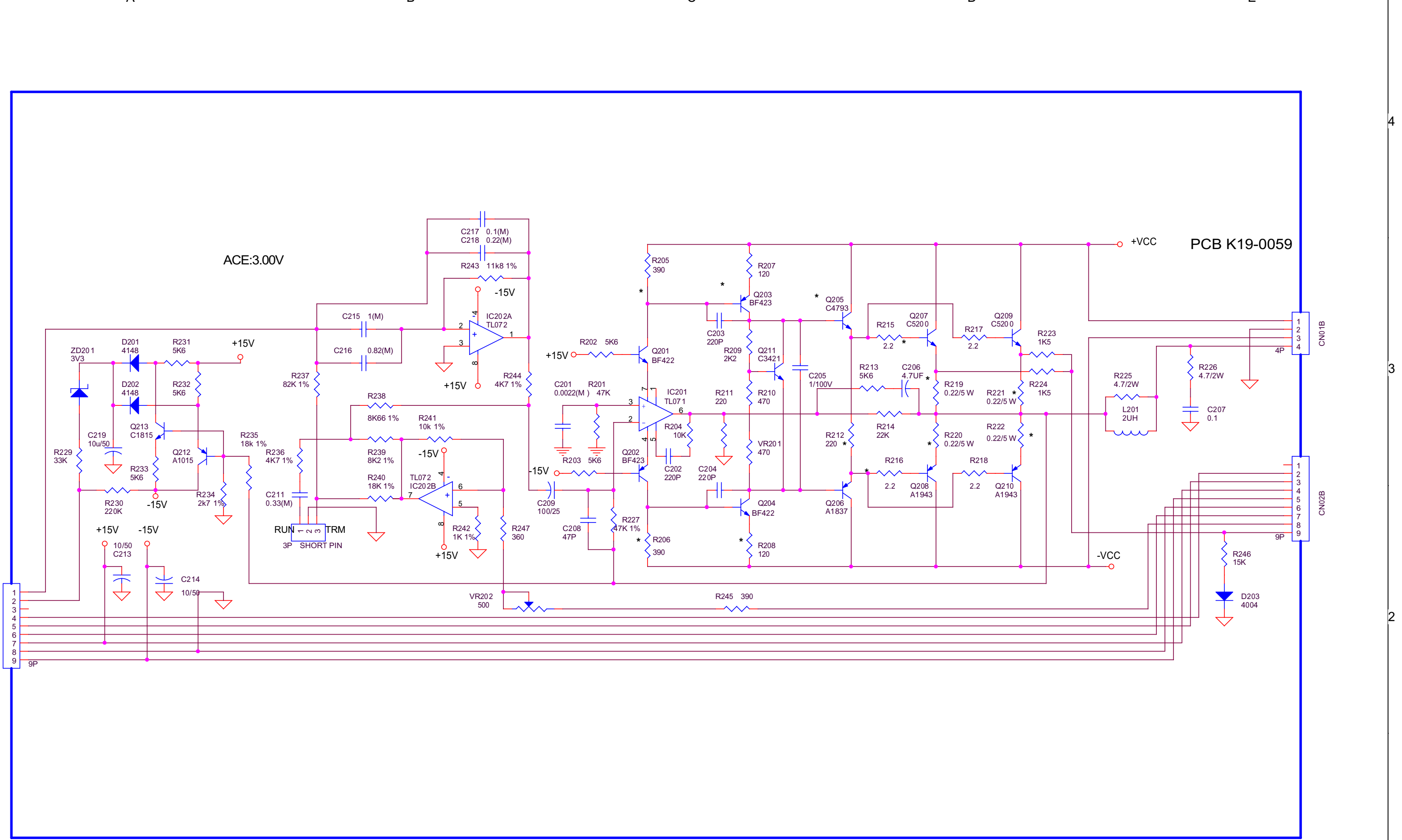
This is an amplifier using ACE Bass technique. It can only be used with the driver to which the specific ACE Bass circuit is designed.



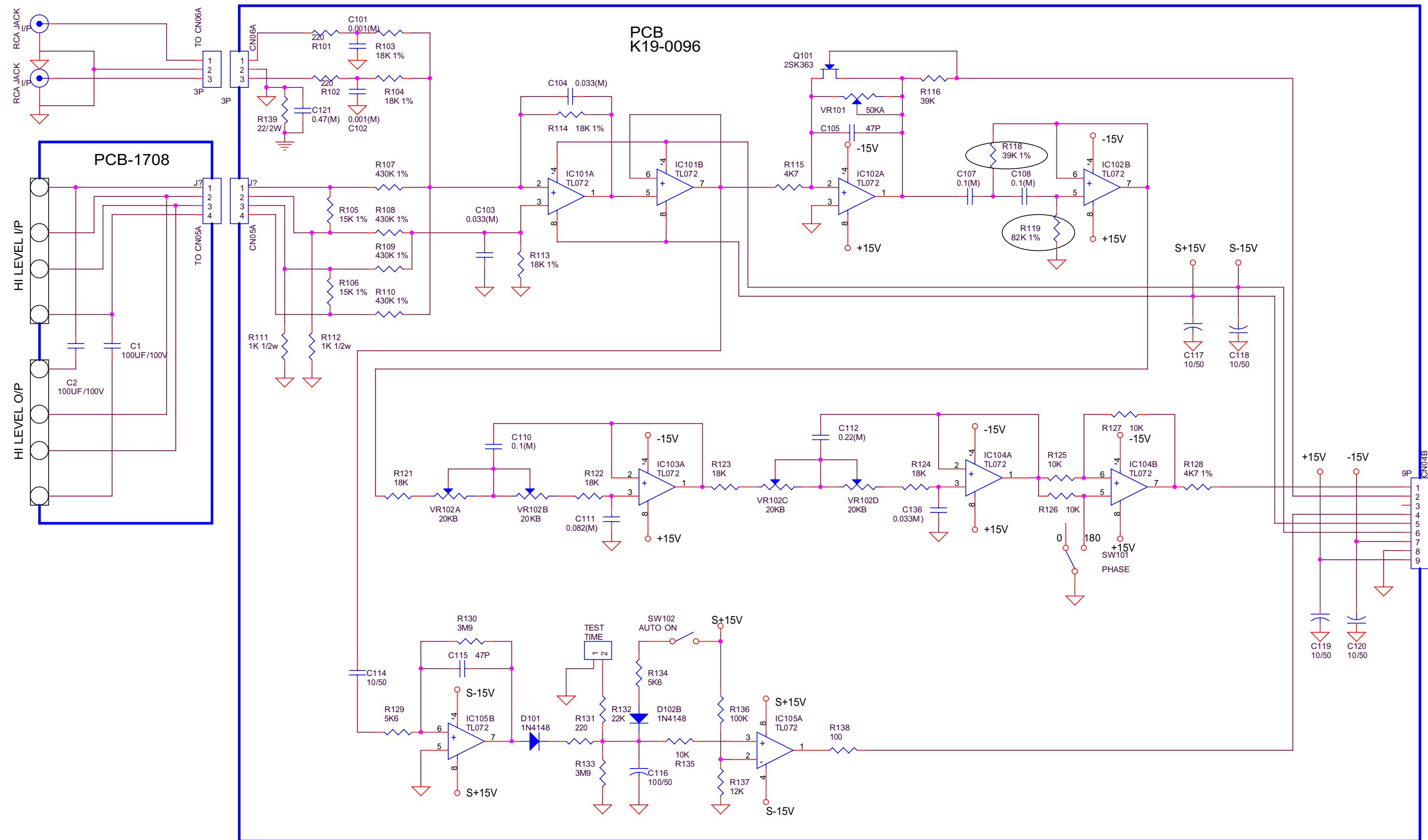




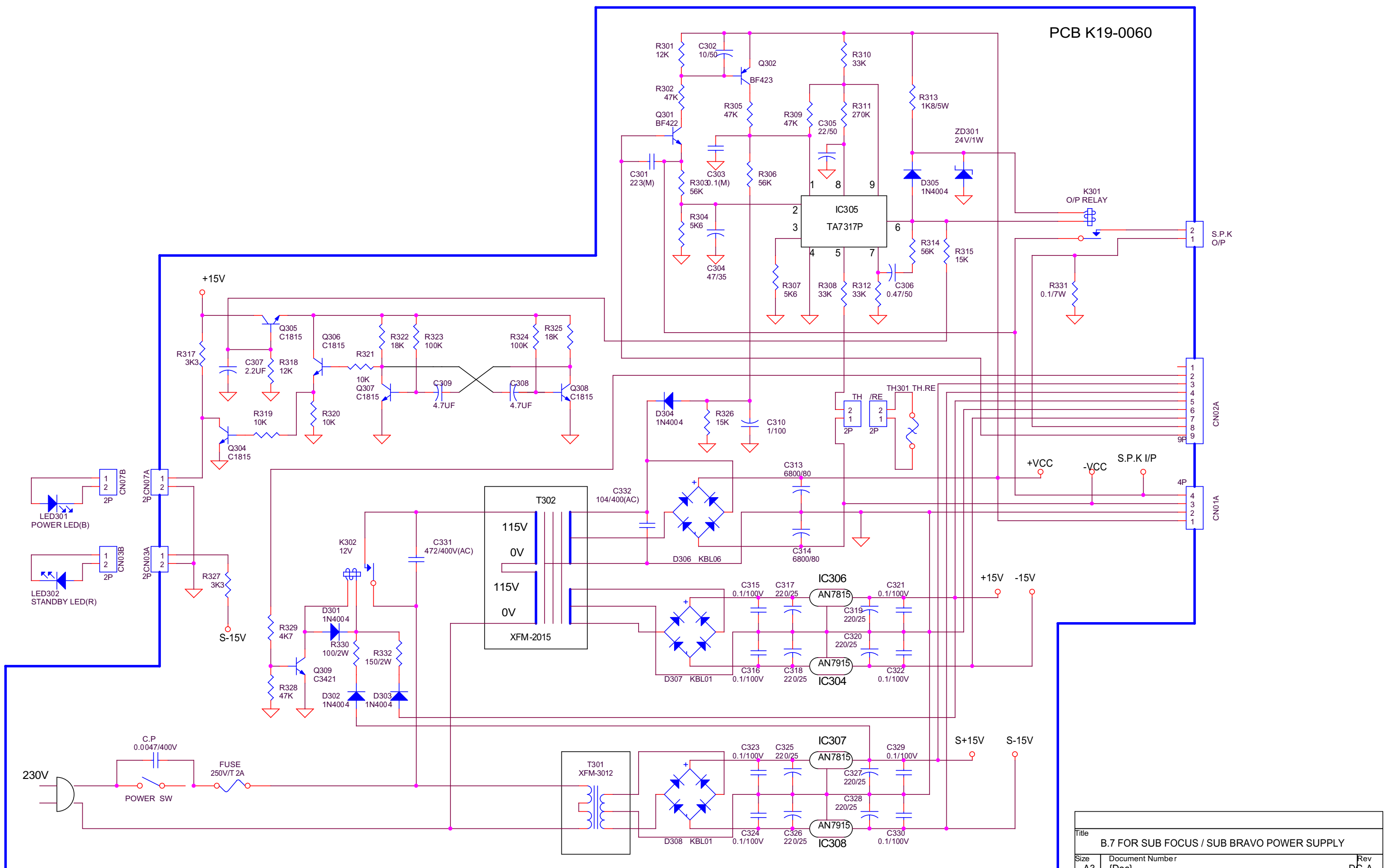




Title		B.7 FOR SUB FOCUS / SUB BRAVO POWER AMP	
Size	A3	Document Number	{Doc}
Date:	Thursday, April 25, 2002	Sheet	1 of 1
		Rev	DG-A



Title		B.7 For SUB FOCUS / SUB BRAVO PREAMP
Size	Document Number	Rev
A3	{Doc}	DGX2
Date:	Wednesday, March 27, 2002	Sheet 1 of 1

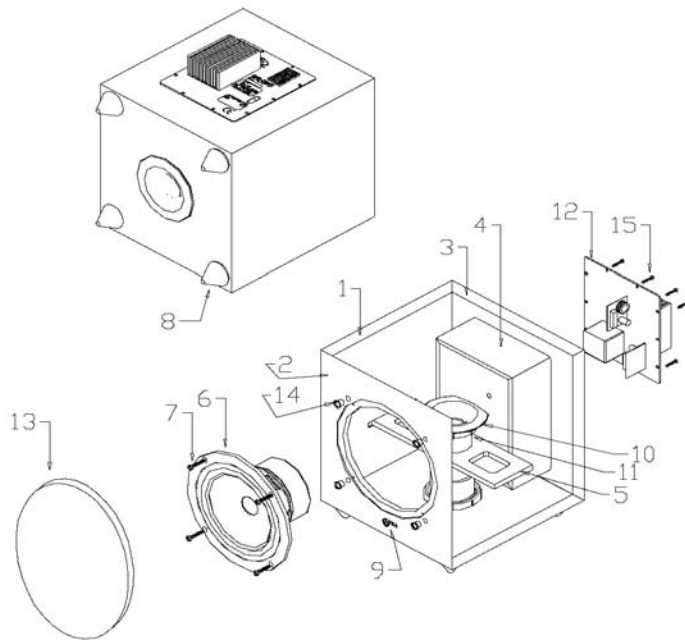


PCB K19-0060

Title		
B.7 FOR SUB FOCUS / SUB BRAVO POWER SUPPLY		
Size	Document Number	Rev
A3	{Doc}	DG-A
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SUB FOCUS



Ref no	Part no	Description	Qty	Available Y/N
1		Wrap board	1	NA
2		Front board	1	NA
3		Wrap board	1	NA
4		Inner box	1	NA
5		Brace board	1	NA
6	B1.35 B	Woofer	1	YES
7		Screw 4x25, BA head 8	4	YES
8	SOSP-01	Feet, soft spike	4	YES
9	BAD-02	ACE bass badge	1	YES
10		Bx port	2	NA
11		Bx tube	1	NA
12		Amplifier (see separate man.)	1	NA
13	GRI-07	Grille black for black / maple version	1	YES
13	GRI-46	Grille grey for tara-oak version	1	YES
13	GRI-89	Grille titanium grey for silver version	1	YES
14	GRC-02	Grille catcher	4	YES
15		Screw 3,5x20, BA head 7	10	YES

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
SUB FOCUS AMP ASSY			
PANEL	ADL-6S702	LED	RED 5MMD
Q211	ATR-2SC3421	TR	2SC3421
Q205	ATR-2SC4793	TR	2SC4793
Q206	ATR-2SA1837	TR	2AS1837
Q207, Q209	ATR-2SC5200	TR	2SC5200
Q208, 210	ATR-2SA1943	TR	2SA1943
BAK PANEL	JK1-L01-G7009C	BINDING POST	RED (3mm)
BAK PANEL	JK1-L01-G7010C	BINDING POST	BLACK(3mm)
PANEL	JK3-L02-7013	2P RCA JACK GOLDEN	RCA2-131
BAK PANEL	SWK-7009	SWROCK R-30NS	RH SERIAL
FUSE	FUS-01-2001SC	FUSE VDE/UL 5*20mm	2A/250V TSD
	FUH-1006	FUSE HOLDER 5*20MM	VDE/UL OP520
	XFM-2015	K29-2015	POWER TRANS FORMER
FOR VR	M11-P605-02	VR-KNOB	18*16
VR101	VRR-7068	A50K*1 L=15MM	
VR102	VRR-7069	B20K*4 L=15MM	
BAK PANEL	EMX-7006	AC CORD BUSHER	ST-101N (HEYCO)
PANEL	EMX-1018	LED BUSHING	5MM
POWER SW	ECW-400V472M	CAP Y-SUPPRESSOR	400V 4700pF +-20%
PANEL	WPC-7028	POWER CORD	VDE
CABINETT	EMX-1018	LED BUSHING	5MM
	WAS-7398	WIRE ASS'Y	1P RCA PLUG 6M BLK
CABINETT	ADL-6S701	LED BLUE	5MMD

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
SUB FOCUS PREAMP PCB			
IC101-105	AIC-TL072	IC DVAL OP AMP	TL072
D101,102B	ADD-IN4148*TAP	DIODE SWITCH	IN4148 52mm
Q101	ATR-2SK363	TR	2SK363
C105,115	ECD-050T470M	CAP CER	50V 47P +-20%
C107,108,110	ECM-100T104J	CAP, MYLAR	100NF 100V +/-5% P5
C101,102	ECM-100T102J	CAP MYLAR	100V 0.001uF +-5%
C112	ECM-100T224J	CAP MYLAR	100V 220NF +-5% P5
C111	ECM-100T823J	CAP MYLAR	100V 823 +-5%
C103,104,136	ECM-100T333J	CAP MYLAR	100V 0.033UF +-5%
C114	ECJ-050T106M	CAP ELNP	50V 10uF +-20%
C121	ECZ-063T474J-1	CAP MTLZ (BF014D)	63V 0.47uF +-5%
C117-120	ECE-050T106M-1	CAP ELE	50V 10uF +-20% 85°C
C116	ECE-050T107M-1	CAP ELE	50V 100uF +-20% 85°C
TIME	CN1-S25402-703	NEEDLE 2P	
R111,112	ERB-501Y102J	RES MO	1/2W Y 1K +-5%
R139	ERB-202K220J	RES MO 2W K 22 +-5%	H=10mm 5.0*16.0
R101,102,131	ERC-121Y221J	RES, 220 OHM	1/6W +-5%
R125-127,135	ERC-121Y103J	RES, 10K OHM	1/6W +/-5%
R116	ERC-121Y393J	RES, 39K OHM	1/6W +/-5%
R115	ERC-121Y472J	RES CF	1/8W Y 4K7 +-5%
R134,R129	ERC-121Y562J	RES, 5K6 OHM	1/6W +/-5%
R138	ERC-121Y101J	RES, 100 OHM	1/6W +/-5%
R136	ERC-121Y104J	RES, 100K OHM	1/6W +/-5%
R132	ERC-121Y223J	RES, 22K OHM	1/6W +/-5%
R137	ERC-121Y123J	RES, 12K OHM	1/6W +/-5%
R133,R130	ERC-121Y395J	RES CF	3M9 1/8W +-5%
R105,106	ERM-121Y1502F	RES MF	1/8W Y 15K +-1%
R107-110	ERM-121Y4303F	RES MF	1/8W Y 430K +-1%
R128	ERM-121Y4701F	RES MF	1/8W Y 4K7 +-1%
R103,104,113,114,121-124	ERM-121Y1802F	RES MF	1/8W Y 18K +-1%
R118	ERM-121Y3902F	RES MF	1/8W Y 39K +-1%
R119	ERM-121Y8202F	RES MF	1/8W Y 82K +-1%
SW101,102	SWS-G7002	TOGGLE SW	T8019L-TECQ

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
SUB FOCUS AMP PCB			
IC201	AIC-TL071	IC	TL071(TI)
IC202	AIC-TL072	IC DVAL OP AMP	TL072
R225,226	ERB-202K4R7J	RES MO 2W K 4.7 +-5%	H=10mm 5.0*16.0
R219,220,221,222	ERB-502KR22J-1	RES MO 5W K 0.22 +-5%	H=10mm 8.5 *25.0 mm
VR202	ERV-S06-501B01	VR SEMI ST S	6MMD 500V ERECT 90°
L201	ELC-01-7001	COIL CHK	1uH +-10%
T.PIN	CN1-S25403-702	NEEDLE 3P	
T.PIN	CN1-S25402-702	SHORT PIN 2P	
C218	ECZ-063T224J-1	CAP MTLZ (BF014D)	63V 0.22uF +-5%
C211	ECZ-063T334J-1	CAP MTLZ(ECQV)	63V 0.33uF +-5%
C217	ECZ-063T104J-1	CAP MTLZ (BF014D)	63V 0.1uF +-5%
C215	ECZ-063T105J-1	CAP MTLZ (BF074D)	63V 1uF +-5%
C216	ECZ-063T824J-1	CAP MTLZ (BF014D)	63V 0.82uF +-5%
D201,202	ADD-IN4148*TAP	DIODE SWITCH	IN4148 52mm
ZD201	ADZ-UZ3.3BM	DIODE ZENER UZ	3.3BM 1/2W
Q212	ATR-2SA1015*TAP	TR	2SA1015
Q213	ATR-2SC1815*TAP	TR	2SC1815
Q201,204	ATR-BF422	TR	BF422 TAPING
Q202,203	ATR-BF423	TR	BF423 TAPING
D203	ADD-IN4004*TAP52	DIODE RECTI	IN4004 TAPING 52mm
C208	ECD-050T470M	CAP CER	50V 47P +-20%
C202,C203,C204	ECD-050T221M	CAP, CER	220P 50V +-20% P5
C201	ECM-100T222J	CAP MYLAR	100V 2200PF +-5%
C207	ECM-100T104J	CAP, MYLAR	100NF 100V +/-5% P5
C205	ECE-100T105M-1	CAP ELE	100V 1uF +-20% 85°C
C206	ECE-050T475M-1	CAP ELE	50V 4.7uF +-20% 85°C
C213,214,219	ECE-050T106M-1	CAP ELE	50V 10uF +-20% 85°C
C209	ECE-025T107M-1	CAP ELE	25V 100uF +-20% 85°C
R215,216,217,218	ERB-251Y2R2J	RES MO	1/4W Y 2.2 +-5%
R207,208	ERB-251Y121J	RES MO	1/4W Y 120 +-5%
R212	ERB-251Y221J	RES MO	1/4W Y 220 +-5%
R210,VR201	ERB-251Y471J	RES MO	1/4W Y 470 +-5%
R209	ERB-251Y222J	RES MO	1/4W Y 2.2K +-5%

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
R205,206	ERB-251Y391J	RES MO	1/4W Y 390 +-5%
R246	ERC-251Y153J	RES CF	1/4W Y 15K +-5%
R223,224	ERC-251Y152J	RES, 1K5 OHM	1/4W +-5%
R202,203,231,232,233	ERC-121Y562J	RES, 5K6 OHM	1/6W +/-5%
R229	ERC-121Y333J	RES, 33K OHM	1/6W +/-5%
R201	ERC-121Y473J	RES, 47K OHM	1/6W +/-5%
R204	ERC-121Y103J	RES, 10K OHM	1/6W +/-5%
R230	ERC-121Y224J	RES CF	1/8W Y 220K +-5%
R235,R240	ERM-121Y1802F	RES MF	1/8W Y 18K +-1%
R234	ERM-121Y2701F	RES MF	1/8W Y 2K7 +-1%
R227	ERM-251Y4702F	RES MF	1/4W Y 47K +-1%
R213	ERM-251Y5601F	RES MF	1/4W Y 5K6 +-1%
R214	ERM-251Y2202F	RES MF	1/4W Y 22K +-1%
R211	ERM-251Y2200F	RES MF	1/4W Y 220 +-1%
R245	ERM-121Y3900F	RES MF	1/8W Y 390 +-1%
R244,236	ERM-121Y4701F	RES MF	1/8W Y 4K7 +-1%
R247	ERM-121Y3600F	RES MF	1/8W Y 360 +-1%
R242	ERM-121Y1001F	RES MF	1/8W Y 1K +-1%
R243	ERM-121Y1182F	RES MF	1/8W Y 11K8 +-1%
R238	ERM-121Y8661F	RES MF	1/8W Y 8K66 +-1%
R239	ERM-121Y8201F	RES MF	1/8W Y 8K2 +-1%
R237	ERM-121Y8202F	RES MF	1/8W Y 82K +-1%
R241	ERM-121Y1002F	RES MF	1/8W Y 10K +-1%

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
SUB FOCUS POWER SUPPLY PCB			
D307,308	ADB-W02	DIODE BRIDGE	W02 1.5A/200V
D306	ADB-KBU6G	DIODE BRIDGE KBU6G	6A/400V
D301,302,303,304,305	ADD-IN4004*TAP52	DIODE RECTI	IN4004 TAPING 52mm
ZD301	ADZ-IN4749A	DIODE	ZENER IN4749A 1W 24V
IC306,IC307	AIC-KA7815	IC	KA7815
IC308,IC304	AIC-KA7915	IC	KA7915
IC305	AIC-TA7317P	SPEAKER PROTECT	IC TA 7317P
K301	ARL-01-7001	RELAY 24V 1P1T	VS-24MBU-NR
K302	ARL-01-7002	RELAY 12V 1P1T	MIT-SH-112LM
Q304,305,306,307,308	ATR-2SC1815*TAP	TR	2SC1815
Q301	ATR-BF422	TR	BF422 TAPING
Q302	ATR-BF423	TR	BF423 TAPING
Q309	ATR-2SC3421	TR	2SC3421
T301	XFM-3012	XFORMER (K29-2020C)	AC 15.0V*2
R313	ERD-502P182J	RES CEM 5W P	1K8 +-5% SQZ5
R330	ERB-202K101J	RES MO 2WK 100 +-5%	H=10mm 5.0*16.0
R332	ERB-202K151J	RES MO 2W K 150 +-5%	H=10mm 5.0*16.0
R331	ERB-702K0R1J	RES MO 7W K 0.1 +-5%	H=10mm 8.5*25.0
C332	ECW-275V104M	X-CAP 14224	0.1uF/275V +-20%
C331	ECW-400V472M	CAP Y-SUPPRESSOR	400V 4700pF +-20%
C313,314	ECE-080V688M-2	CAP ELE	80V 6800uF +-20% 105°C
TH/RE	TRL-7003	THERMAL PROTECTOR	17 M024A5 (LENGTH=120MM)
C321,322,315,316,323,324,329,330	ECD-100T104M	CAP CER	100V 0.1UF +-20%
C301	ECM-100T223J	CAP MYLAR	100V 0.022uF +-5%
C303	ECM-100T104J	CAP, MYLAR	100NF 100V +/-5% P5
C306	ECE-050T474M-1	CAP ELE	50V 0.47uF +-20% 85°C
C310	ECE-100T105M-1	CAP ELE	100V 1uF +-20% 85°C
C308,309	ECE-050T475M-1	CAP ELE	50V 4.7uF +-20% 85°C
C302	ECE-050T106M-1	CAP ELE	50V 10uF +-20% 85°C
C305	ECE-050T226M-1	CAP ELE	50V 22uF +-20% 85°C
C304	ECE-035T476M-1	CAP ELE	35V 47uF +-20% 85°C
C317,318,325,326,319,320,327,328	ECE-025T227M-1	CAP ELE	25V 220uF +- 20% 85C
C307	ECE-025T225M-1	CAP ELE	25V 2.2uF +-20% 85°C

Parts list SUB FOCUS 230V/50HZ, B7 / 24dB			
REMARK	PART NO	DESCRIPTION	SPECIFICATION
R301,R318	ERC-121Y123J	RES, 12K OHM	1/6W +/-5%
R312	ERC-121Y333J	RES, 33K OHM	1/6W +/-5%
R302,305,309,328	ERC-121Y473J	RES, 47K OHM	1/6W +/-5%
R303,314	ERC-121Y563J	RES, 56K OHM	1/6W +/-5%
R322,325	ERC-121Y183J	RES CF	1/8W Y 18K +-5%
R323,324	ERC-121Y104J	RES, 100K OHM	1/6W +/-5%
R317,327	ERC-121Y332J	RES, 3K3 OHM	1/6W +-5%
R304,307	ERC-121Y562J	RES, 5K6 OHM	1/6W +/-5%
R329	ERC-121Y472J	RES CF	1/8W Y 4K7 +-5%
R319,320,321	ERC-121Y103J	RES, 10K OHM	1/6W +/-5%
R311	ERC-121Y274J	RES CF	1/8W Y 270K +-5%
R315,326	ERC-251Y153J	RES CF	1/4W Y 15K +-5%
R306	ERC-251Y563J	RES, 56K OHM	1/4W +-5%
R308,310	ERC-251Y333J	RES CF	1/4W 33K +-5%
SPEAKER IN / OUT PCB			
HI-LEVEL PCB	ECJ-100A107K	CAP ELNP	100V 100UF +-10%(A TYPE)