

# **SERVICE MANUAL**

## **ADDITIONAL INFORMATION ON MODEL QX-949**

**Subject: SUB-CHANNEL CIRCUIT ASSEMBLY OF MODEL QX-949**

On account of modification due to improvement, conventional Assembly AWX-051-A will be replaced by a new type of Assembly AWX-051-B.

**Notice:**

- (1) Old Assembly and New One are mutually interchangeable.
- (2) You are requested to make use of this additional information together with the furnished service manual.

## Parts List of Sub-Channel Circuit Assembly (AWX-051-B)

### CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	470p	50V	CKDYB 471K 50
C2	Ceramic	470p	50V	CKDYB 471K 50
C3	Electrolytic	1	25V	CEA 010P 25
C4	Mylar	0.033	50V	CQMA 333K 50
C5	Electrolytic	1	25V	CEA 010P 25
C6	Electrolytic	0.47	25V	CSSA R47M 25
C7	Mylar	0.0027	50V	CQMA 272K 50
C8	Mylar	0.001	50V	CQMA 102K 50
C9	Mylar	0.0033	50V	CQMA 332K 50
C10	Electrolytic	33	16V	CEA 330P 16
C11	Electrolytic	47	10V	CEA 471P 10
C12	Electrolytic	2.2	50V	CEA 2R2P 50
C13	Electrolytic	33	16V	CEA 330P 16
C14	Mylar	0.018	50V	CQMA 183K 50
C15	Electrolytic	4.7	25V	CEA 4R7P 25
C16	Electrolytic	4.7	25	CEA 4R7P 25
C17	Electrolytic	100	35V	CEA 101P 35
C18	Electrolytic	220	35V	CEA 221P 35
C19	Electrolytic	4.7	25V	CEA 4R7P 25
C20	Mylar	0.0082	50V	CQMA 822K 50
C21	Mylar	0.0082	50V	CQMA 822K 50
C22	Mylar	0.022	50V	CQMA 223K 50
C23	Mylar	0.01	50V	CQMA 103K 50
C24	Mylar	0.022	50V	CQMA 223K 50
C25	Mylar	0.022	50V	CQMA 223K 50
C26	Mylar	0.015	50V	CQMA 153K 50
C27	Electrolytic	0.47	25V	CSSA R47M 25
C28	Electrolytic	0.47	25V	CSSA R47M 25
C29	Electrolytic	0.68	35V	CSZA R68K 35
C30	Mylar	0.033	50V	CQMA 333K 50
C31	Electrolytic	4.7	25V	CEA 4R7P 25
C32	Electrolytic	10	16V	CEA 100P 16
C33	Electrolytic	10	16V	CEA 100P 16
C34	Mylar	0.01	50V	CQMA 103K 50
C35	Mylar	0.15	50V	CQMA 154K 50
C36	Electrolytic	0.47	25V	CSSA R47M 25
C37	Electrolytic	0.68	25V	CSSA R68M 25
C38	Electrolytic	10	16V	CEA 100P 16
C39	Electrolytic	10	16V	CEA 100P 16
C40	Electrolytic	10	16V	CEA 100P 16
C41	Mylar	0.01	50V	CQMA 103K 50
C42	Mylar	0.15	50V	CQMA 154K 50
C43	Electrolytic	0.47	25V	CSSA R47M 25
C44	Electrolytic	0.68	25V	CSSA R68M 25
C45	Electrolytic	4.7	25V	CEA 4R7P 25

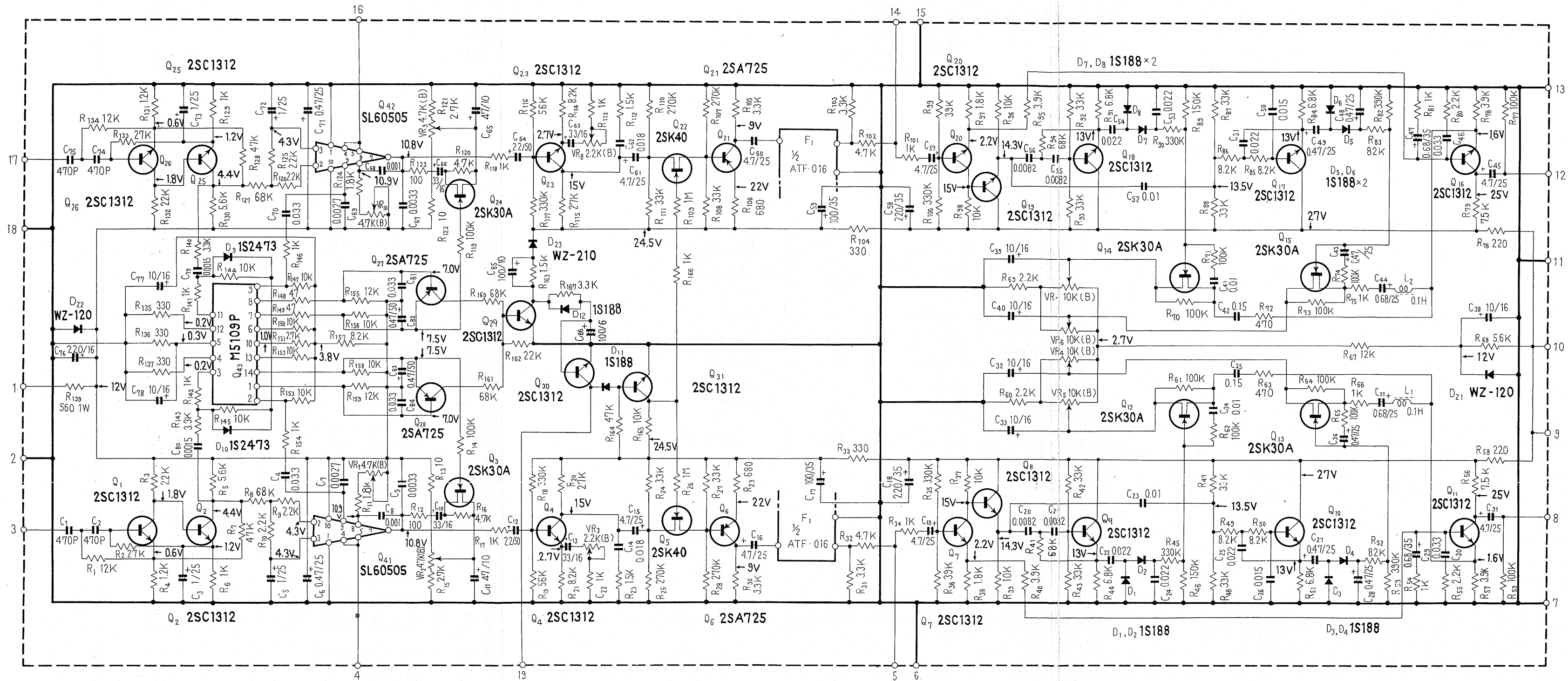
Symbol	Description			Part No.
C46	Mylar	0.033	50V	CQMA 333K 50
C47	Electrolytic	0.68	35V	CSZA R68K 35
C48	Electrolytic	0.47	25V	CSSA R47M 25
C49	Electrolytic	0.47	25V	CSSA R47M 25
C50	Mylar	0.015	50V	CQMA 153K 50
C51	Mylar	0.022	50V	CQMA 223K 50
C52	Mylar	0.01	50V	CQMA 103K 50
C53	Mylar	0.022	50V	CQMA 223K 50
C54	Mylar	0.022	50V	CQMA 223K 50
C55	Mylar	0.0082	50V	CQMA 822K 50
C56	Mylar	0.0082	50V	CQMA 822K 50
C57	Electrolytic	4.7	25V	CEA 4R7P 25
C58	Electrolytic	220	35V	CEA 221P 35
C59	Electrolytic	100	35V	CEA 101P 35
C60	Electrolytic	4.7	25V	CEA 4R7P 25
C61	Electrolytic	4.7	25V	CEA 4R7P 25
C62	Mylar	0.018	50V	CQMA 183K 50
C63	Electrolytic	33	16V	CEA 330P 16
C64	Electrolytic	2.2	50V	CEA 2R2P 50
C65	Electrolytic	47	10V	CEA 471P 10
C66	Electrolytic	33	16V	CEA 330P 16
C67	Mylar	0.0033	50V	CQMA 332K 50
C68	Mylar	0.001	50V	CQMA 102K 50
C69	Mylar	0.0027	50V	CQMA 272K 50
C70	Mylar	0.033	50V	CQMA 333K 50
C71	Electrolytic	0.47	25V	CSSA R47M 25
C72	Electrolytic	1	25V	CEA 010P 25
C73	Electrolytic	1	25V	CEA 010P 25
C74	Ceramic	470p	50V	CKDYB 471K 50
C75	Ceramic	470p	50V	CKDYB 471K 50
C76	Electrolytic	220	16V	CEA 221P 16
C77	Electrolytic	10	16V	CEA 100P 16
C78	Electrolytic	10	16V	CEA 100P 16
C79	Mylar	0.0015	50V	CQMA 152K 50
C80	Mylar	0.0015	50V	CQMA 152K 50
C81	Mylar	0.033	50V	CQMA 333K 50
C82	Electrolytic	0.47	50V	CEA R47P 50
C83	Electrolytic	0.47	50V	CEA R47P 50
C84	Mylar	0.033	50V	CQMA 333K 50
C85	Electrolytic	100	10V	CEA 101P 10
C86	Electrolytic	100	6V	CEA 101P 6

## RESISTORS

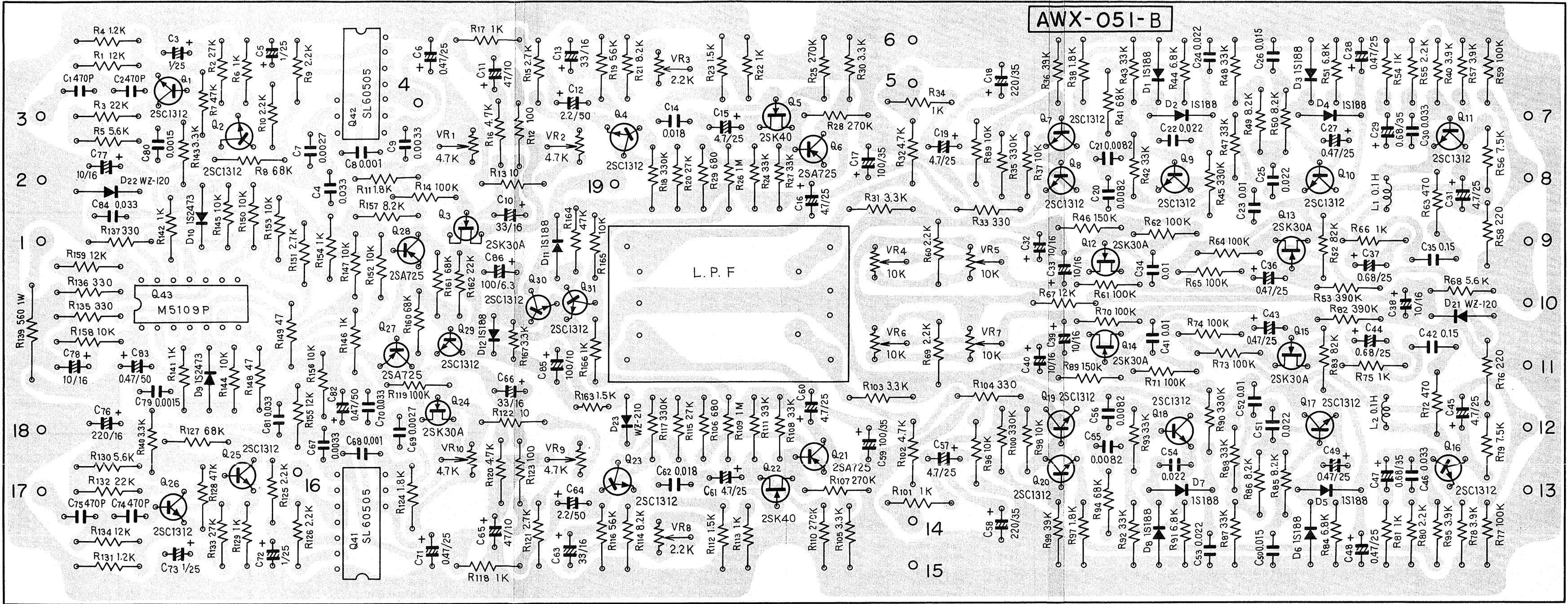
Symbol	Description	Part No.
R1	Carbon film 12k	RD¼PM 123J
R2	Carbon film 27k	RD¼PM 273J
R3	Carbon film 22k	RD¼PM 223J
R4	Carbon film 1.2k	RD¼PM 122J
R5	Carbon film 5.6k	RD¼PM 562J
R6	Carbon film 1k	RD¼PM 102J
R7	Carbon film 47k	RD¼PM 473J
R8	Carbon film 68k	RD¼PM 683J
R9	Carbon film 2.2k	RD¼PM 222J
R10	Carbon film 2.2k	RD¼PM 222J
R11	Carbon film 1.8k	RD¼PM 182J
R12	Carbon film 100	RD¼PM 101J
R13	Carbon film 10	RD¼PM 100J
R14	Carbon film 100k	RD¼PM 104J
R15	Carbon film 2.7k	RD¼PM 272J
R16	Carbon film 4.7k	RD¼PM 472J
R17	Carbon film 1k	RD¼PM 102J
R18	Carbon film 330k	RD¼PM 334J
R19	Carbon film 56k	RD¼PM 563J
R20	Carbon film 27k	RD¼PM 273J
R21	Carbon film 8.2k	RD¼PM 822J
R22	Carbon film 1k	RD¼PM 102J
R23	Carbon film 1.5k	RD¼PM 152J
R24	Carbon film 33k	RD¼PM 333J
R25	Carbon film 270k	RD¼PM 274J
R26	Carbon film 1M	RD¼PM 105J
R27	Carbon film 33k	RD¼PM 333J
R28	Carbon film 270k	RD¼PM 274J
R29	Carbon film 680	RD¼PM 681J
R30	Carbon film 3.3k	RD¼PM 332J
R31	Carbon film 3.3k	RD¼PM 332J
R32	Carbon film 4.7k	RD¼PM 472J
R33	Carbon film 330	RD¼PM 331J
R34	Carbon film 1k	RD¼PM 102J
R35	Carbon film 330k	RD¼PM 334J
R36	Carbon film 39k	RD¼PM 393J
R37	Carbon film 10k	RD¼PM 103J
R38	Carbon film 1.8k	RD¼PM 182J
R39	Carbon film 10k	RD¼PM 103J
R40	Carbon film 3.9k	RD¼PM 392J
R41	Carbon film 68k	RD¼PM 683J
R42	Carbon film 33k	RD¼PM 333J
R43	Carbon film 33k	RD¼PM 333J
R44	Carbon film 6.8k	RD¼PM 682J
R45	Carbon film 330k	RD¼PM 334J
R46	Carbon film 150k	RD¼PM 154J
R47	Carbon film 33k	RD¼PM 333J
R48	Carbon film 33k	RD¼PM 333J
R49	Carbon film 8.2k	RD¼PM 822J
R50	Carbon film 8.2k	RD¼PM 822J

SUB CHANNEL CIRCUIT ASS'Y

AWX-051



AWX-051-B



Symbol	Description	Part No.
R51	Carbon film 6.8k	RD¼PM 682J
R52	Carbon film 82k	RD¼PM 823J
R53	Carbon film 390k	RD¼PM 394J
R54	Carbon film 1k	RD¼PM 102J
R55	Carbon film 2.2k	RD¼PM 222J
R56	Carbon film 7.5k	RD¼PM 752J
R57	Carbon film 3.9k	RD¼PM 392J
R58	Carbon film 220	RD¼PM 221J
R59	Carbon film 100k	RD¼PM 104J
R60	Carbon film 2.2k	RD¼PM 222J
R61	Carbon film 100k	RD¼PM 104J
R62	Carbon film 100k	RD¼PM 104J
R63	Carbon film 470	RD¼PM 471J
R64	Carbon film 100k	RD¼PM 104J
R65	Carbon film 100k	RD¼PM 104J
R66	Carbon film 1k	RD¼PM 102J
R67	Carbon film 12k	RD¼PM 123J
R68	Carbon film 5.6k	RD¼PM 562J
R69	Carbon film 2.2k	RD¼PM 222J
R70	Carbon film 100k	RD¼PM 104J
R71	Carbon film 100k	RD¼PM 104J
R72	Carbon film 470	RD¼PM 471J
R73	Carbon film 100k	RD¼PM 104J
R74	Carbon film 100k	RD¼PM 104J
R75	Carbon film 1k	RD¼PM 102J
R76	Carbon film 220	RD¼PM 221J
R77	Carbon film 100k	RD¼PM 104J
R78	Carbon film 3.9k	RD¼PM 392J
R79	Carbon film 7.5k	RD¼PM 752J
R80	Carbon film 2.2k	RD¼PM 222J
R81	Carbon film 1k	RD¼PM 102J
R82	Carbon film 390k	RD¼PM 394J
R83	Carbon film 82k	RD¼PM 823J
R84	Carbon film 6.8k	RD¼PM 682J
R85	Carbon film 8.2k	RD¼PM 822J
R86	Carbon film 8.2k	RD¼PM 822J
R87	Carbon film 33k	RD¼PM 333J
R88	Carbon film 33k	RD¼PM 333J
R89	Carbon film 150k	RD¼PM 154J
R90	Carbon film 330k	RD¼PM 334J
R91	Carbon film 6.8k	RD¼PM 682J
R92	Carbon film 33k	RD¼PM 333J
R93	Carbon film 33k	RD¼PM 333J
R94	Carbon film 68k	RD¼PM 683J
R95	Carbon film 3.9k	RD¼PM 392J
R96	Carbon film 10k	RD¼PM 103J
R97	Carbon film 1.8k	RD¼PM 182J
R98	Carbon film 10k	RD¼PM 103J
R99	Carbon film 39k	RD¼PM 393J
R100	Carbon film 330k	RD¼PM 334J

Symbol	Description	Part No.
R101	Carbon film 1k	RD¼PM 102J
R102	Carbon film 4.7k	RD¼PM 472J
R103	Carbon film 3.3k	RD¼PM 332J
R104	Carbon film 330	RD¼PM 331J
R105	Carbon film 3.3k	RD¼PM 332J
R106	Carbon film 680	RD¼PM 681J
R107	Carbon film 270k	RD¼PM 274J
R108	Carbon film 33k	RD¼PM 333J
R109	Carbon film 1M	RD¼PM 105J
R110	Carbon film 270k	RD¼PM 274J
R111	Carbon film 33k	RD¼PM 333J
R112	Carbon film 1.5k	RD¼PM 152J
R113	Carbon film 1k	RD¼PM 102J
R114	Carbon film 8.2k	RD¼PM 822J
R115	Carbon film 27k	RD¼PM 273J
R116	Carbon film 56k	RD¼PM 563J
R117	Carbon film 330k	RD¼PM 334J
R118	Carbon film 1k	RD¼PM 102J
R119	Carbon film 100k	RD¼PM 104J
R120	Carbon film 4.7k	RD¼PM 472J
R121	Carbon film 2.7k	RD¼PM 272J
R122	Carbon film 10	RD¼PM 100J
R123	Carbon film 100	RD¼PM 101J
R124	Carbon film 1.8k	RD¼PM 182J
R125	Carbon film 2.2k	RD¼PM 222J
R126	Carbon film 2.2k	RD¼PM 222J
R127	Carbon film 68k	RD¼PM 683J
R128	Carbon film 47k	RD¼PM 473J
R129	Carbon film 1k	RD¼PM 102J
R130	Carbon film 5.6k	RD¼PM 562J
R131	Carbon film 1.2k	RD¼PM 122J
R132	Carbon film 22k	RD¼PM 223J
R133	Carbon film 27k	RD¼PM 273J
R134	Carbon film 12k	RD¼PM 123J
R135	Carbon film 330	RD¼PM 331J
R136	Carbon film 330	RD¼PM 331J
R137	Carbon film 330	RD¼PM 331J
R138		
R139	Metal oxide 560 1W	RS1P 561J
R140	Carbon film 3.3k	RD¼PM 332J
R141	Carbon film 1k	RD¼PM 102J
R142	Carbon film 1k	RD¼PM 102J
R143	Carbon film 3.3k	RD¼PM 332J
R144	Carbon film 10k	RD¼PM 103J
R145	Carbon film 10k	RD¼PM 103J
R146	Carbon film 1k	RD¼PM 102J
R147	Carbon film 10k	RD¼PM 103J
R148	Carbon film 47	RD¼PM 470J
R149	Carbon film 47	RD¼PM 470J
R150	Carbon film 10k	RD¼PM 103J



Symbol	Description	Part No.
R151	Carbon film 2.7k	RD¼PM 272J
R152	Carbon film 10k	RD¼PM 103J
R153	Carbon film 10k	RD¼PM 103J
R154	Carbon film 1k	RD¼PM 102J
R155	Carbon film 12k	RD¼PM 123J
R156	Carbon film 10k	RD¼PM 103J
R157	Carbon film 8.2k	RD¼PM 822J
R158	Carbon film 10k	RD¼PM 103J
R159	Carbon film 12k	RD¼PM 123J
R160	Carbon film 68k	RD¼PM 683J
R161	Carbon film 68k	RD¼PM 683J
R162	Carbon film 22k	RD¼PM 223J
R163	Carbon film 1.5k	RD¼PM 152J
R164	Carbon film 47k	RD¼PM 473J
R165	Carbon film 10k	RD¼PM 103J
R166	Carbon film 1k	RD¼PM 102J
R167	Carbon film 3.3k	RD¼PM 332J

#### POTENTIOMETERS

Symbol	Description	Part No.
VR1	Semi-fixed 4.7k-B	C92-051-0
VR2	Semi-fixed 4.7k-B	C92-051-0
VR3	Semi-fixed 2.2k-B	ACP-001-0
VR4	Semi-fixed 10k-B	C92-049-0
VR5	Semi-fixed 10k-B	C92-049-0
VR6	Semi-fixed 10k-B	C92-049-0
VR7	Semi-fixed 10k-B	C92-049-0
VR8	Semi-fixed 2.2k-B	ACP-001-0
VR9	Semi-fixed 4.7k-B	C92-051-0
VR10	Semi-fixed 4.7k-B	C92-051-0

#### SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F) Transistor	
Q2	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F) Transistor	
Q3	2SK30A-Y or GR (2SK30AD) FET	
Q4	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F) Transistor	
Q5.	2SK40-D or C (2SK30A-Y or GR) FET	

Symbol	Description	Part No.	
Q6	2SA763P-5 or 6 (2SA725-F or G)	Transistor	
Q7	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q8	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q9	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q10	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q11	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q12	2SK30A-Y or GR (2SK30AD)	FET	
Q13	2SK30A-GR	FET	
Q14	2SK30A-Y or GR (2SK30AD)	FET	
Q15	2SK30A-Y or GR (2SK30AD)	FET	
Q16	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q17	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q18	2SC1327-S or T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q19	2SC1327-T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q20	2SC1327-T (2SC1312-F or G) (2SC1344-D or E)	Transistor	
Q21	2SA763P-5 or 6 (2SA725-F or G)	Transistor	
Q22	2SK40-D or C (2SK30A-Y or GR)	FET	
Q23	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F)	Transistor	
Q24	2SK30A-GR	FET	
Q25	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F)	Transistor	

Symbol	Description	Part No.	
Q26	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F)	Transistor	
Q27	2SA763P-5 or 6 (2SA725-F or G)	Transistor	
Q28	2SA763P-5 or 6 (2SA725-F or G)	Transistor	
Q29	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F)		
Q30	2SC1327-U (2SC1312-H) (2SC1344-F)	Transistor	
Q31	2SC1327-T, S or U (2SC1312-F, G or H) (2SC1344-D, E or F)	Transistor	
Q41	SL60505 (M51361P)	IC	
Q42	SL60505 (M51361P)	IC	
Q43	M5109P	IC	
D1	1S188 FM-1	Diode	
D2	1S188 FM-1	Diode	
D3	1S188 FM-1	Diode	
D4	1S188 FM-1	Diode	
D5	1S188 FM-1	Diode	
D6	1S188 FM-1	Diode	
D7	1S188 FM-1	Diode	
D8	1S188 FM-1	Diode	
D9	1S2473	Diode	
D10	1S2473	Diode	
D11	1S188 FM-1	Diode	
D12	1S188 FM-1	Diode	
D21	WZ-120	Zener diode	
D22	WZ-120	Zener diode	
D23	WZ-210	Zener diode	

#### COILS AND FILTER

Symbol	Description	Part No.	
F1	Low pass filter	ATF-016-0	ATF-019-0
L1	Choke coil 104k	ATM-008-0	
L2	Choke coil 104k	ATM-008-0	

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