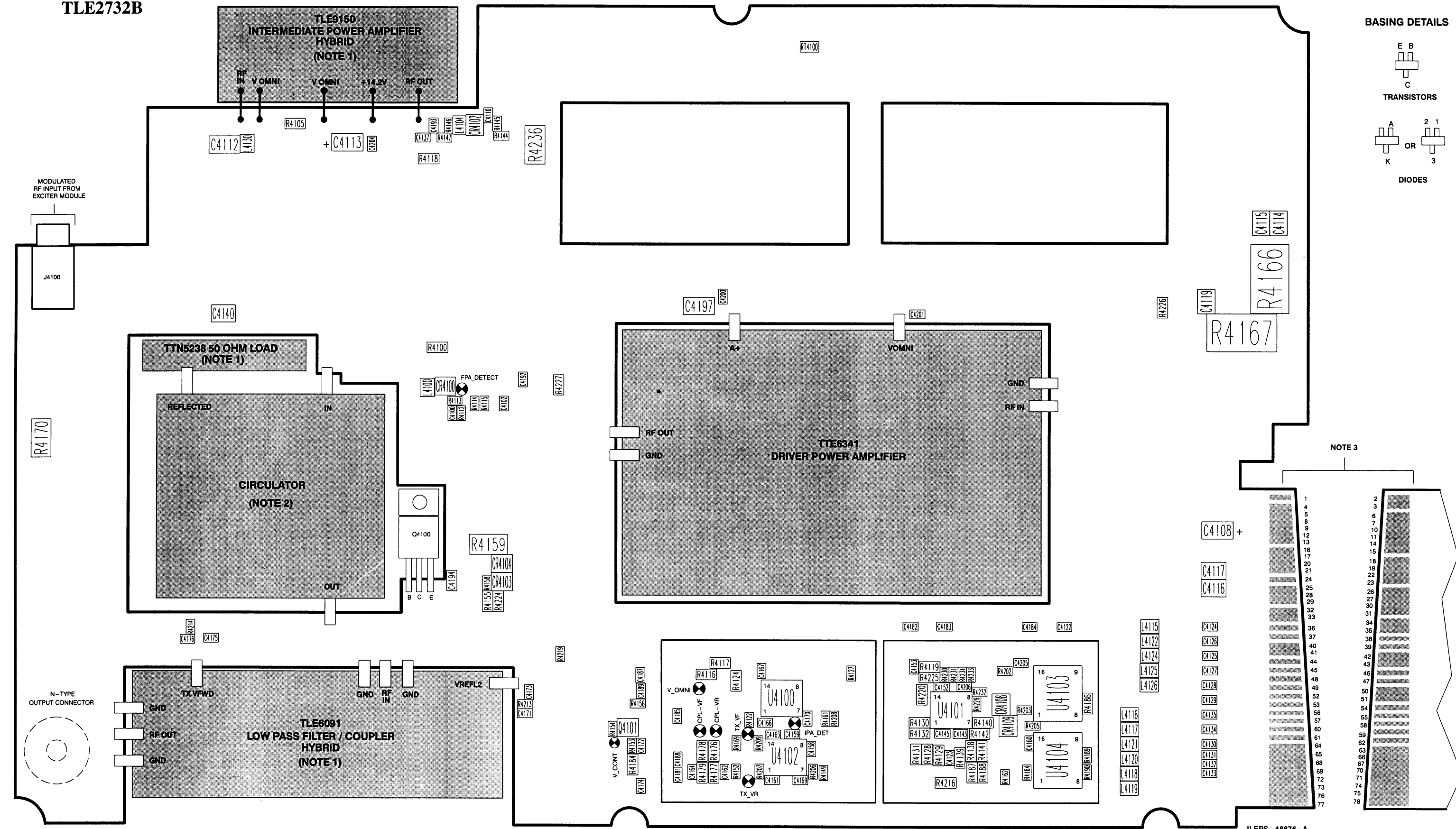


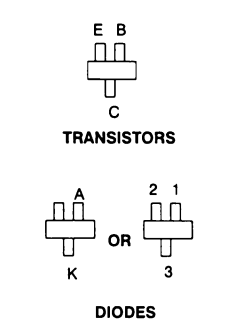
25W UHF POWER AMPLIFIER MODULES

MODELS TLE2731B

TLE2732B



BASING DETAILS



NOTES:

- ALL HYBRIDS ARE CONSIDERED NON-SERVICEABLE. IF HYBRID IS MALFUNCTIONING, REPLACE ENTIRE HYBRID.
- THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 5884911T04.
- THE CIRCUIT BOARD EDGE CONNECTOR HAS PRINTED CIRCUIT PLATED CONTACTS ON BOTH SIDES OF THE BOARD EDGE. SEE THE FOLLOWING TABLE FOR EDGE CONNECTOR PIN NUMBERING/SIGNAL NAME CROSS-REFERENCE.

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
1	GND	40	GND
2	GND	41	GND
3	GND	42	GND
4	+28V	43	GND
5	+28V	44	NOT USED
6	+28V	45	NOT USED
7	+28V	46	NOT USED
8	+28V	47	NOT USED
9	+28V	48	FAN ON
10	+28V	49	GND
11	+28V	50	GND
12	+28V	51	GND
13	+28V	52	X1 MUX (NOT USED)
14	+28V	53	Y1 MUX (NOT USED)
15	+28V	54	X2 MUX
16	+14.2V	55	Y2 MUX
17	+14.2V	56	X3 MUX
18	+14.2V	57	Y3 MUX
19	+14.2V	58	A MUX CTRL
20	+14.2V	59	B MUX CTRL
21	+14.2V	60	SPARE 1
22	+14.2V	61	SPARE 2
23	+14.2V	62	SPARE 3
24	+5V	63	GND
25	GND	64	GND
26	GND	65	GND
27	GND	66	GND
28	GND	67	GND
29	GND	68	GND
30	GND	69	GND
31	GND	70	GND
32	VCTRL	71	GND
33	VCTRL	72	GND
34	VCTRL	73	GND
35	VCTRL	74	GND
36	TX VF 1	75	GND
37	PA TEMP 1 (NOT USED)	76	GND
38	DRIVER FWD (NOT USED)	77	GND
39	TX VR 1 (NOT USED)	78	GND

parts list

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C4100	2113740A49	capacitor, fixed: 56 pF, ±5%, 50V	R4132	0611077G42	33.2K, ±1%, 1/8 W
C4102	2113740G24	6.8 pF, ±0.1 pF, 50V	R4138	0611077G04	13.3K, ±1%, 1/8 W
C4108	2109822S06	CAP CHIP CER 10UF 16V	R4139,4140	0611077F24	2K, ±1%, 1/8 W
C4110	2113740A49	56 pF, ±5%, 50V	R4141	0611077G22	20.5K, ±1%, 1/8 W
C4112,4113	2109822S06	CAP CHIP CER 10UF 16V	R4142	0611077G42	33.2K, ±1%, 1/8 W
C4114 thru 4116	2113901C58	CAP CHIP HI Q 100 PF ±5%	R4144	0611079G01	10k, ±1%, 1/10 W
C4117	2113901C29	CAP CHIP HI Q 10 PF ±0.50PF	R4145	0611079A86	3300 ohms, ±5%, 1/10 W
C4119	2113901C58	CAP CHIP HI Q 100 PF ±5%	R4146	0611079A74	1K, ±5%, 1/10 W
C4122	2113740A55	100 pF, ±5%, 50 V	R4147	0611079A50	100 ohms, ±5%, 1/10 W
C4123	2113741A57	0.033 uF, ±5%, 50 V	R4149	0611079A74	1K, ±5%, 1/10 W
C4124 thru 4135	2113740A55	100 pF, ±5%, 50 V	R4152	0611079A74	1K, ±5%, 1/10 W
C4137	2113740G03	1 pF, ±0.1 pF, 50 V	R4153	0611079A60	270 ohms, ±5%, 1/10 W
C4140	2113901C58	CAP CHIP HI Q 100 PF ±5%	R4154	0611079A74	1K, ±5%, 1/10 W
C4143	2113740A55	100 pF, ±5%, 50 V	R4155	0611077F24	2K, ±1%, 1/8 W
C4145	2113740A55	100 pF, ±5%, 50 V	R4156	0611079A74	1K, ±5%, 1/10 W
C4152,4153	2113740A55	100 pF, ±5%, 50 V	R4158	0611079A74	1K, ±5%, 1/10 W
C4158 thru 4160	2113741A57	0.033 uF, ±5%, 50 V	R4159	0683962T01	1 ohm, ±5%, 1 W
C4161 thru 4164	2113740A55	100 pF, ±5%, 50 V	R4161	0611079A74	1K, ±5%, 1/10 W
C4166,4167	2113740A55	100 pF, ±5%, 50 V	R4162	0611079A01	0 ohms, ±5%, 1/10 W (CLE6070A Only)
C4169 thru 4172	2113740A55	100 pF, ±5%, 50 V	R4163	0611079A01	0 ohms, ±5%, 1/10 W (CLE6080A Only)
C4173	2113740A43	39 pF, ±5%, 50 V	R4164	0611079A74	1K, ±5%, 1/10 W (CLE6080A)
C4174,4175	2113740A33	15 pF, ±5%, 50 V	R4166,4167	0682089V02	Resistor, .02 ohm 5% 2 W
C4176	2113740A43	39 pF, ±5%, 50 V	R4169	0611079A74	1K, ±5%, 1/10 W
C4181 thru 4185	2113740A55	100 pF, ±5%, 50 V	R4170	0683962T24	9.1 ohms, ±5%, 1 W
C4187 thru 4189	2113740A55	100 pF, ±5%, 50 V	R4176	0611077A01	0 ohm, ±5%, 0 W
C4192	2113740G03	1 pF, ±0.1 pF, 50 V	R4177	0611077G76	75K, ±1%, 1/8 W
C4193	2113740G17	3.9 pF, ±0.1 pF, 50V	R4178	0611077A01	0 ohm, ±5%, 0 W
C4194	2113741B69	0.1 uF, ±5%, 50 V	R4179	0611077G76	75K, ±1%, 1/8 W
C4197	2109822S06	CAP CHIP CER 10UF 16V	R4184	0611077A01	0 ohm, ±5%, 0 W
C4200,4201	2113740A55	100 pF, ±5%, 50 V	R4186	0611077F24	2K, ±1%, 1/8 W
C4204	2113740A55	100 pF, ±5%, 50 V	R4187	0611077F68	5.76K, ±1%, 1/8 W
C4205	2113741A57	0.033 uF, ±5%, 50 V	R4188	0611077F24	2K, ±1%, 1/8 W
C4206	2113740A55	100 pF, ±5%, 50 V	R4189,4190	0611079G01	10k, ±1%, 1/10 W
CR4100	4882290T04	diode (see note): Diode: hot carrier	R4202,4203	0611079A50	100 ohms, ±5%, 1/10 W
CR4102	4882290T04	Diode: hot carrier	R4205 thru 4209	0611079A50	100 ohms, ±5%, 1/10 W
CR4103,4104	4813833C05	Diode: hot carrier dual 70 V	R4213,4214	0611079A74	1K, ±5%, 1/10 W
CR4108,4109	4813830A14	Zener, 5.1 V	R4216	0611077A01	0 ohm, ±5%, 0 W
J4100	0984393T01	connector: receptacle: UHF	R4219	0611079G01	10k, ±1%, 1/10 W
L4100	2462587X57	CHIP IND Iopro 220 NH 5%	R4220	0611077F91	10K, ±1%, 1/8 W
L4104	2462587X57	CHIP IND Iopro 220 NH 5%	R4224	0611077F24	2K, ±1%, 1/8 W
L4115 thru 4122	2462587X57	CHIP IND Iopro 220 NH 5%	R4225	0611077A92	5.6K, ±5%, 1/8 W
L4124 thru 4126	2462587X57	CHIP IND Iopro 220 NH 5%	R4226,4227	0611077A01	0 ohm, ±5%, 0 W
L4130	2462587X57	CHIP IND Iopro 220 NH 5%	R4229 thru 4234	0611079G01	10k, ±1%, 1/10 W
Q4100	4813822D08	transistor (see note): Transistor, 100 V	R4236	0683962T98	0.51 ohms, ±5%, 1W
Q4101	4813824A10	NPN			
R4100	0611077A01	0 ohm, ±5%, 0 W			
R4105	0611077A01	0 ohm, ±5%, 0 W			
R4112,4113	0611079G01	10k, ±1%, 1/10 W			
R4114	0611079A74	1K, ±5%, 1/10 W			
R4115	0611079A50	100 ohms, ±5%, 1/10 W			
R4116	0611077F68	5.76K, ±1%, 1/8 W			
R4117	0611077F24	2K, ±1%, 1/8 W			
R4118	0611077A01	0 ohm, ±5%, 0 W			
R4119	0611077B17	56K, ±5%, 1/8 W			
R4122	0611079G01	10k, ±1%, 1/10 W			
R4124	0611077F68	5.76K, ±1%, 1/8 W			
R4127	0611079A74	1K, ±5%, 1/10 W			
R4128	0611077G04	13.3K, ±1%, 1/8 W			
R4129,4130	0611077F24	2K, ±1%, 1/8 W			
R4131	0611077G22	20.5K, ±1%, 1/8 W			

NOTE: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

CLN7246A VHF/UHF 25W PA Hardware PL-13171-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		non-referenced items:
	0211996A02	NUT, hex, 3/8 x 24 x 1/2 x 3/32
	0310943J09	Screw, tapping: TT3 x 0.5 x 8 (24 used)
	0310943J10	SCREW, tapping: TT3 x 0.5 x 8 (8 used)
	0312016A32	SCREW, tapping: TT3 x 0.6 x 18 (8 used)
	0383498N05	SCREW, tapping: M4 x 0.7 x 12 (2 used)
	0400007691	WASHER, lock: 3/8", int. tooth (2 used)
	0900816159	CONNECTOR, receptacle: coaxial
	1585002J02	COVER, Highband PA
	1585002J02	COVER, Highband PA
	2682318W05	HEATSHINK PA 25W QUANTAR
	3282796H05	GASKET, .094 x .094" (36 used)
	4280500F01	T & R VOF OF 4282981X01 (2 used)
	5482006W02	ribbon, thermal transfer
	5482624Y01	LABEL THERMAL XFER WHT POLYSTR

TLE150B Intermediate PA Hybrid PL-13117-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

TTE6341A Driver PA Hybrid PL-13172-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

TTN5238A Circulator 50Q Load PL-13074-A

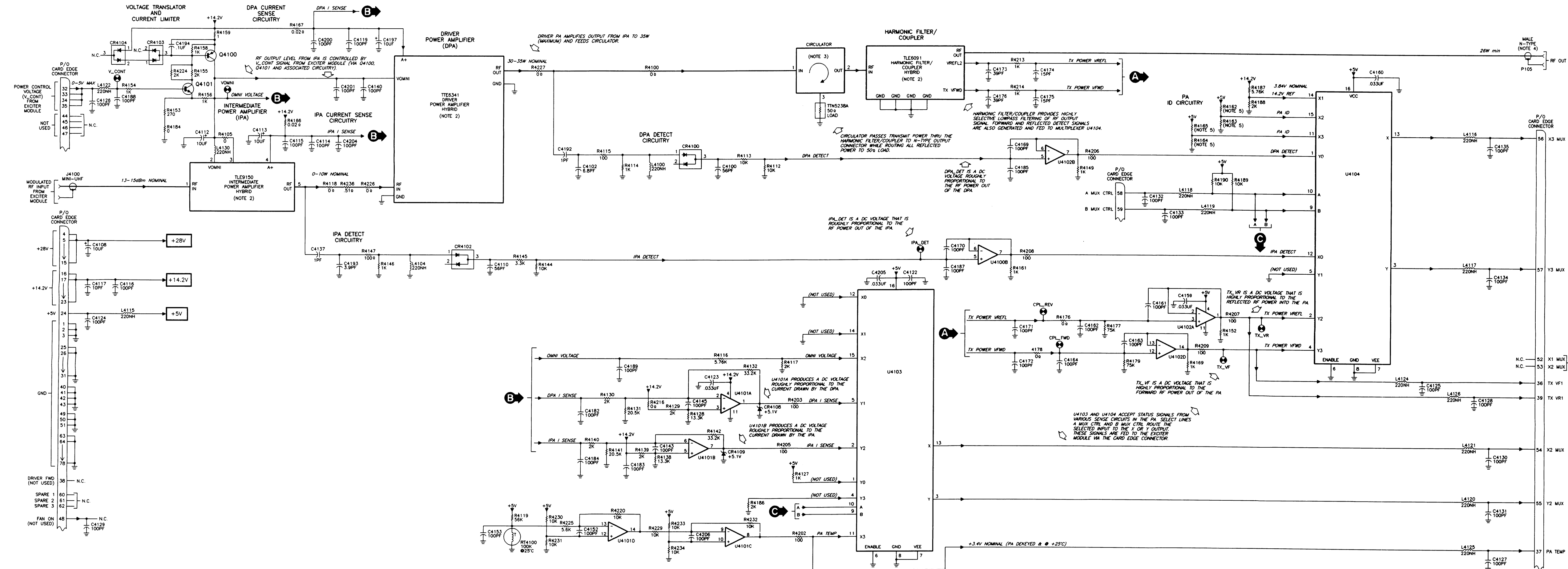
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		cable assembly:
W4900	4284729T02	STRAP, PA
		non-referenced items:
	4385035U02	FLANGE circulator load (VHF)

TLE6091A Low Pass Filter/Coupler Hybrid PL-13173-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

25W UHF POWER AMPLIFIER MODULES

MODELS TLE2731B
TLE2732B

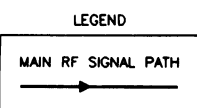


- NOTES:
- UNLESS OTHERWISE INDICATED, ALL RESISTOR VALUES ARE IN OHMS, CAPACITOR VALUES ARE IN PICOFARADS AND INDUCTOR VALUES ARE IN MILLIHENRIES.
 - TLE9150 IPA, TTE6341 DPA AND TLE6091 LOW-PASS FILTER/COUPLER ARE HYBRIDS AND ARE CONSIDERED NON-REPAIRABLE. REPAIR IS BY REPLACEMENT OF ENTIRE HYBRID.
 - THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 5884911104.
 - THE N-TYPE OUTPUT CONNECTOR (0900816159, P/O CLN246 HARDWARE) IS SOLDERED ONTO THE REVERSE SIDE OF THE RF/DC DISTRIBUTION BOARD.
 - RESISTORS R4162 THRU R4165 COMPRISE A "RESISTOR ROW" WHICH IDENTIFIES THE BAND, RANGE AND OUTPUT POWER OF THE PARTICULAR PA MODULE. THE RESISTORS ARE PLACED AS SHOWN IN THE TABLE BELOW.

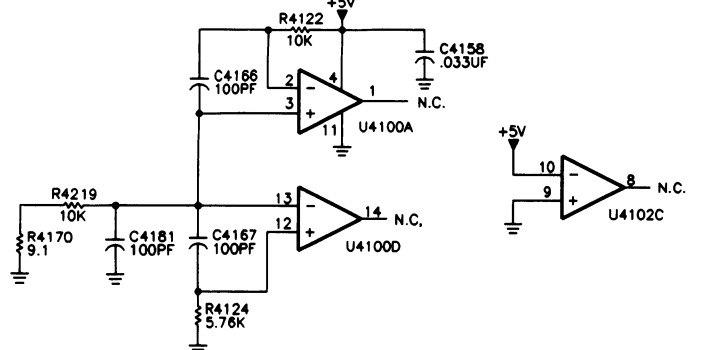
MODEL	R4162	R4163	R4164	R4165
25W UHF TLE2731B R1	33.2K	NOT PLACED	0Ω	NOT PLACED
25W UHF TLE2732B R2	NOT PLACED	0Ω	1K	NOT PLACED

INTEGRATED CIRCUIT POWER AND GROUND CONNECTIONS

REF DESIG	TYPE	DESCRIPTION	SUPPLY PIN	GROUND PIN
U4100	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4101	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4102	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4103	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8
U4104	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8



UNUSED GATES



FLEPS-48874-A