

- F32F-19B131-AA
- F33F-19B131-AD
- F4BF-19B131-AB
- F4CF-19B131-AC
- F4TF-19B131-AB
- F4UF-19B131-AB
- F4ZF-19B131-AA
- F47F-19B131-AB
- F48F-19B131-AB
- F33F-19B132-BE
- F37F-19B132-DF
- F4BF-19B132-AB
- F4CF-19B132-AC
- F4CF-19B132-BC
- F4SF-19B132-AB
- F4TF-19B132-AB
- F4TF-19B132-BB
- F4UF-19B132-AB
- F4XF-19B132-CA
- F4XF-19B132-DA
- F4ZF-19B132-BA
- F48F-19B132-AB

**Transistor Voltages**

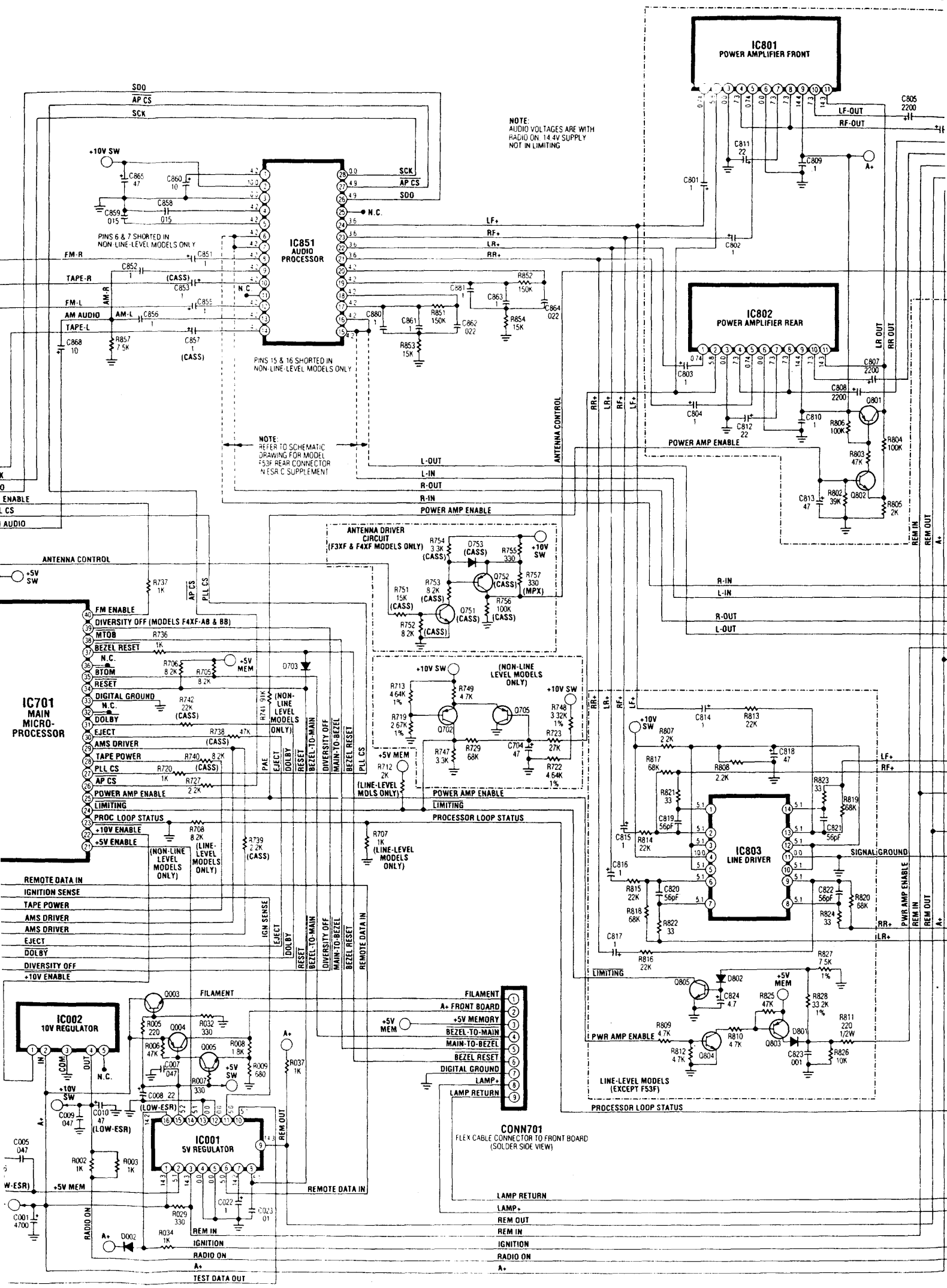
Trans.	E	B	C	Operation Mode/Comments
Q001	10.0 10.0	9.4 10.0	9.8 0.0	FM AM
Q002	4.4 0.0	5.0 0.0	9.4 10.0	FM AM
Q003	2.4 0.0	3.0 0.0	14.4 14.4	Ignition On Ignition Off
Q004	14.4 14.4	13.6 14.4	14.2 0.0	Ignition On Ignition Off
Q005	4.4 0.0	5.0 0.0	13.6 14.4	Ignition On Ignition Off
Q151	0.0 0.0 0.0	0.0 0.0 0.7 max.	10.0 0.0 0.2 max.	Not Tuning 50µV @ 87.9MHz Not Tuning <8µV @ 87.9MHz Tuning
Q152	10.0 10.0	10.0 9.3	0.0 9.8	Q-Not=10V Q-Not=0V
Q153	10.0 10.0	10.0 9.3	0.0 9.8	Q=10V Q-Not=0V
Q502	0.66	1.30	9.9	
Q503	0.67	1.14	5.1	
Q601	0.0 0.0	0.0 0.7	5.0 0.0	Dolby* On Dolby Off
Q641	S=0.0 S=0.0	G=5.0 G=0.0	D=0.15 D=14.4	AMS Pulse Mode Non-AMS
Q642	0.0 0.0 0.0	0.0 0.0 5.0	0.0 9.5 0.2	Initial Power On, Non-Tape Tape Mode/Audio Present AMS Output
Q661	S=14.4 S=14.4	G=0.2 G=14.4	D=14.4 D=Open	Switch Tape Power On Switch Tape Power Off
Q663	S=0.0 S=0.0	G=5.0 G=0.0	D=0.15 D=14.4	Eject Non-eject
Q664	0.0 0.0	0.7 0.0	0.2 14.4	Switch Tape Power On Switch Tape Power Off
Q702	4.3	3.7	4.0	
Q705	4.3	5.3	0.0	
Q751	0.0 0.0	0.20 0.69	0.13 0.10	Radio Off or Tape Playing Radio On and Tape Not Playing
Q752	0.14 9.7	0.14 9.0	0.0 9.7	Radio Off or Tape Playing Radio On and Tape Not Playing
Q801	14.4	13.7	14.3	
Q802	0.8	1.4	1.0	
Q803	5.0	4.3	4.9	
Q804	0.0	0.7	0.1	
Q805	0.0	0.55	4.9	

CONNECTIONS TO REAR CONNECTOR BOARD (LINE-LEVEL MODELS ONLY EXCEPT FS3F)

\* Dolby Noise Reduction. Dolby is a trademark of Dolby Laboratories Licensing Corporation.

**NOTES:**  
 Diversity voltages are with 50µV RF @87.9MHz, no modulation, applied to main antenna socket and standard FM antenna dummy; main antenna selected.

With no RF signal applied:  
 IC151 pins 2,3,5=noisy DC <0.6V;  
 pin 7=0V;  
 pin 1 may randomly switch 10V/0V.  
 IC152 pins 4,6,8,9,10,11,13 may randomly switch 10V/0V:



NOTE: AUDIO VOLTAGES ARE WITH RADIO ON. 14.4V SUPPLY NOT IN LIMITING

NOTE: PINS 6 & 7 SHORTED IN NON-LINE-LEVEL MODELS ONLY

NOTE: PINS 15 & 16 SHORTED IN NON-LINE-LEVEL MODELS ONLY

NOTE: REFER TO SCHEMATIC DRAWING FOR MODEL #53F REAR CONNECTOR N53F C SUPPLEMENT

ANTENNA DRIVER CIRCUIT (F3XF & F4XF MODELS ONLY)

(NON-LINE LEVEL MODELS ONLY)

IC803 LINE DRIVER

LINE-LEVEL MODELS (EXCEPT F53F)

CONN701 FLEX CABLE CONNECTOR TO FRONT BOARD (SOLDER SIDE VIEW)

IC701 MAIN MICRO-PROCESSOR

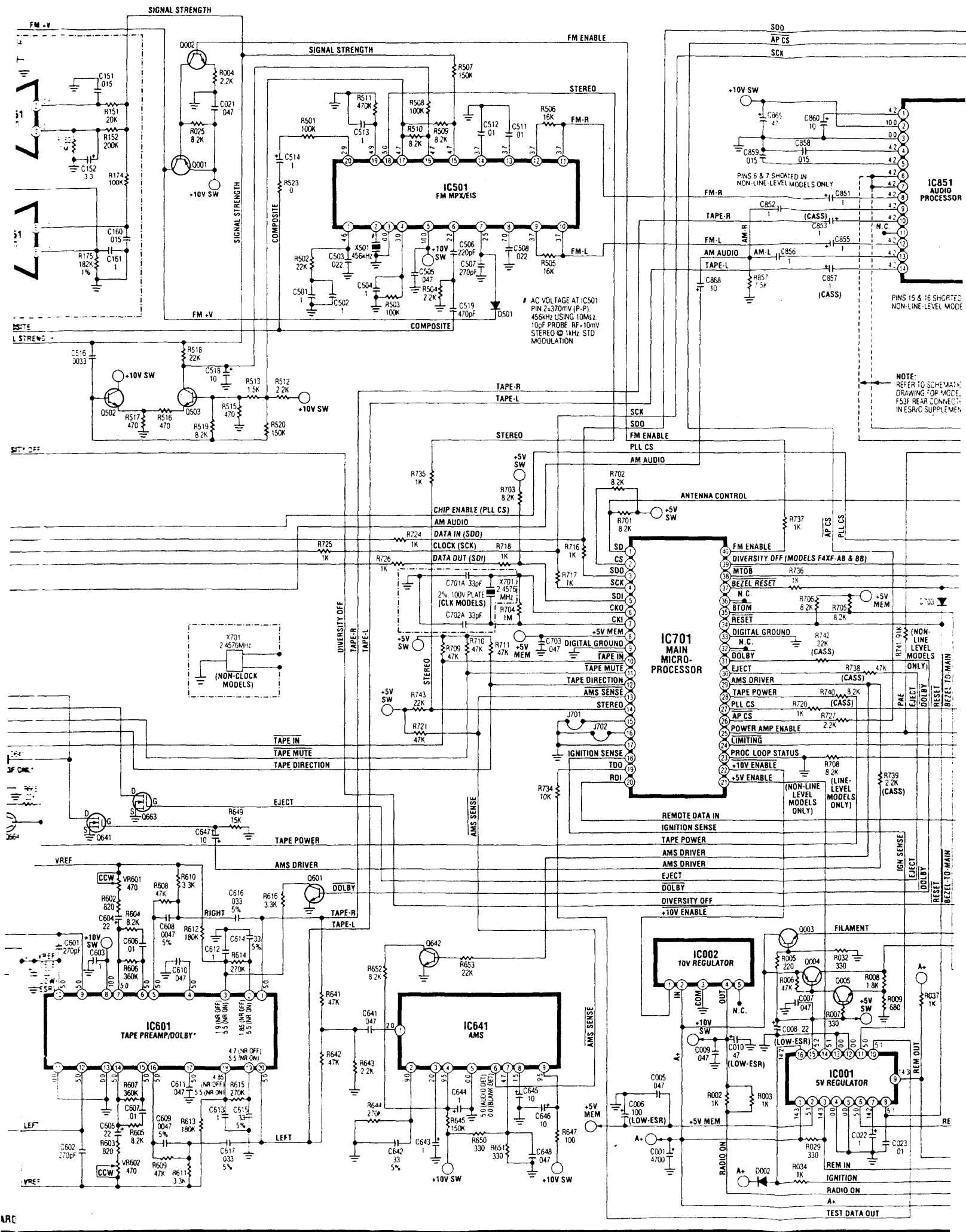
IC801 POWER AMPLIFIER FRONT

IC802 POWER AMPLIFIER REAR

IC803 LINE DRIVER

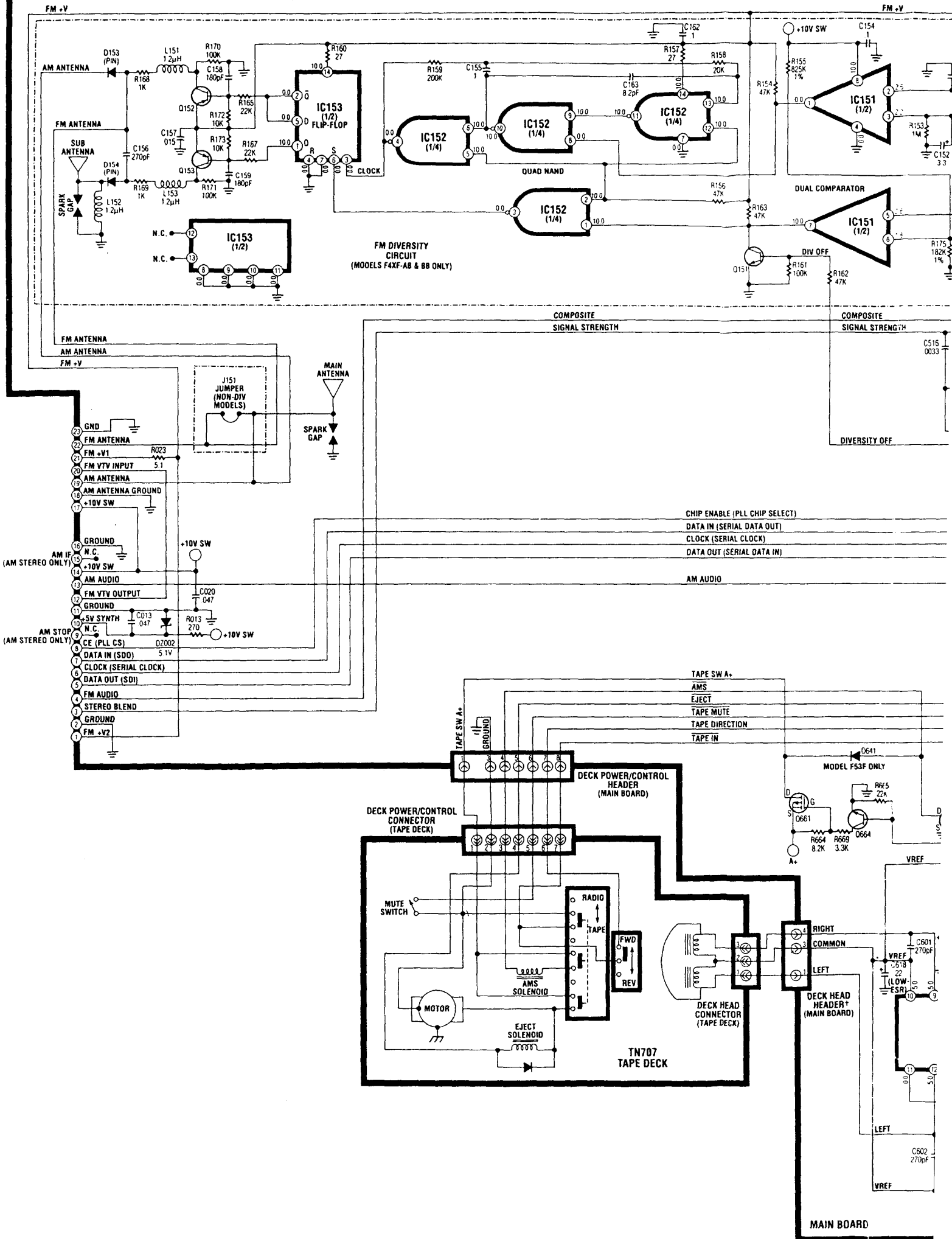
IC002 10V REGULATOR

IC001 5V REGULATOR

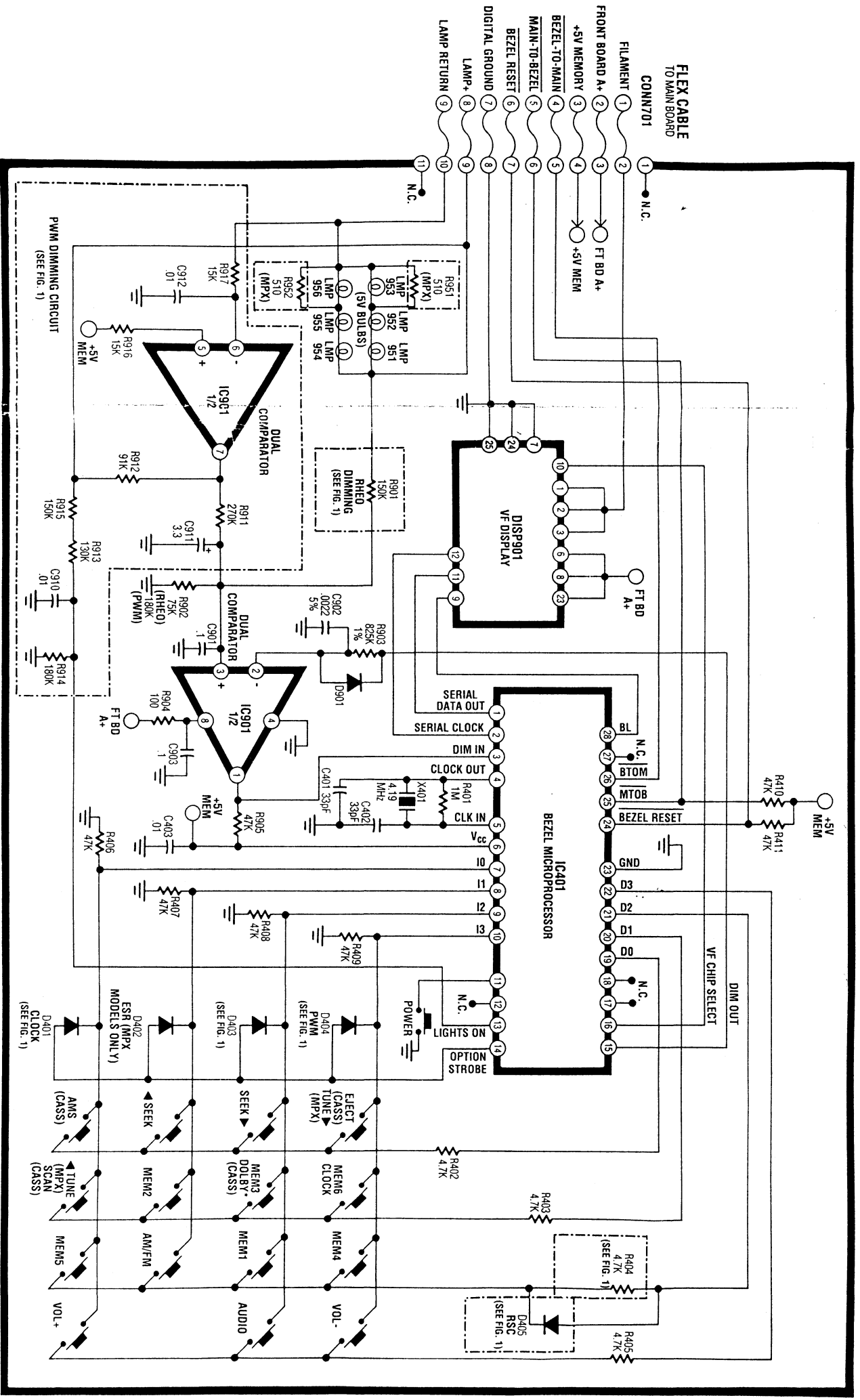


RES ARE 1/8-WATT SMD WITH

**MAIN BOARD**



NOTE:  
RESISTORS ARE 1/8-W



## Component Application Chart

Model	Components							PWM Dimming Circuit
	D401	D402	D403	D404	D405	R404	R901	
<b>Multiplex</b>								
F3AF		■				■	■	
F3DF		■				■	■	
F3XF		■			■			■
F3ZF	■				■		■	
F31F		■				■	■	
F32F		■				■		■
F33F	■	■				■	■	
F4BF	■	■		■		■		■
F4CF	■	■		■		■	■	■
F4TF	■	■					■	■
F4UF	■	■				■	■	
F4ZF	■	■				■	■	
F47F	■	■				■	■	
F48F	■	■			■		■	
<b>Cassette</b>								
F3AF						■	■	
F3DF						■	■	
F31F						■	■	
F32F(LL)		■	■			■		■
F33F	■					■	■	
F37F	■					■	■	
F4BF-AB	■			■		■	■	■
F4BF-BB(LL)	■			■		■	■	■
F4CF	■			■		■	■	■
F4CF-CC(LL)	■			■				■
F4SF						■	■	
F4TF						■	■	
F4UF	■					■	■	
F4XF-AB(LL)	■		■					■
F4XF-BB(LL)			■					■
F4XF-CA	■		■		■			■
F4XF-DA	■		■		■			■
F4ZF					■		■	
F48F	■				■		■	■
F53F(LL)							■	

## IC901 Voltages

Pin	Function	Voltage
1	RC Voltage (pin 2) Below Dimming Level Threshold Dimming Level Threshold Exceeded	5V 0V
2	Headlights Off (peak RC network voltage) Headlights On (peak RC network voltage)	0-0.3V 0.3-5V
3	Headlights Off Headlights On	0-0.3V 0.3-5V
4		Ground
5		+5V
6	Headlights Off Headlights On	0V 0/14 4V PWM
7	Headlights Off Headlights On	0V 0/14 4V PWM
8	Headlights On Headlights Off	14 4V 0V

### Notes:

Resistors are 1/8 Watt SMD  
with value in Ohms unless noted

Capacitance values are  
in Microfarads unless noted

*\*Dolby Noise Reduction*

*Dolby is a trademark of Dolby Laboratories Licensing Corporation*

