

IF AMPLIFIER AND AM DETECTOR

The integrated circuit TDA1048 is intended for use in the french sound section of TV receivers (AM); this circuit includes the following functions :

- IF amplifier with automatic gain control
- AM detector with low distortion
- Electronic potentiometer (Audio frequency volume control by variation of DC voltage).

IF AMPLIFIER AND AM DETECTOR

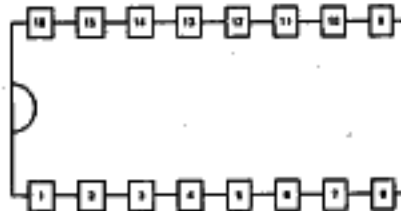
CASE CB-79



DIP SUFFIX
PLASTIC PACKAGE

PIN CONFIGURATION

Top view

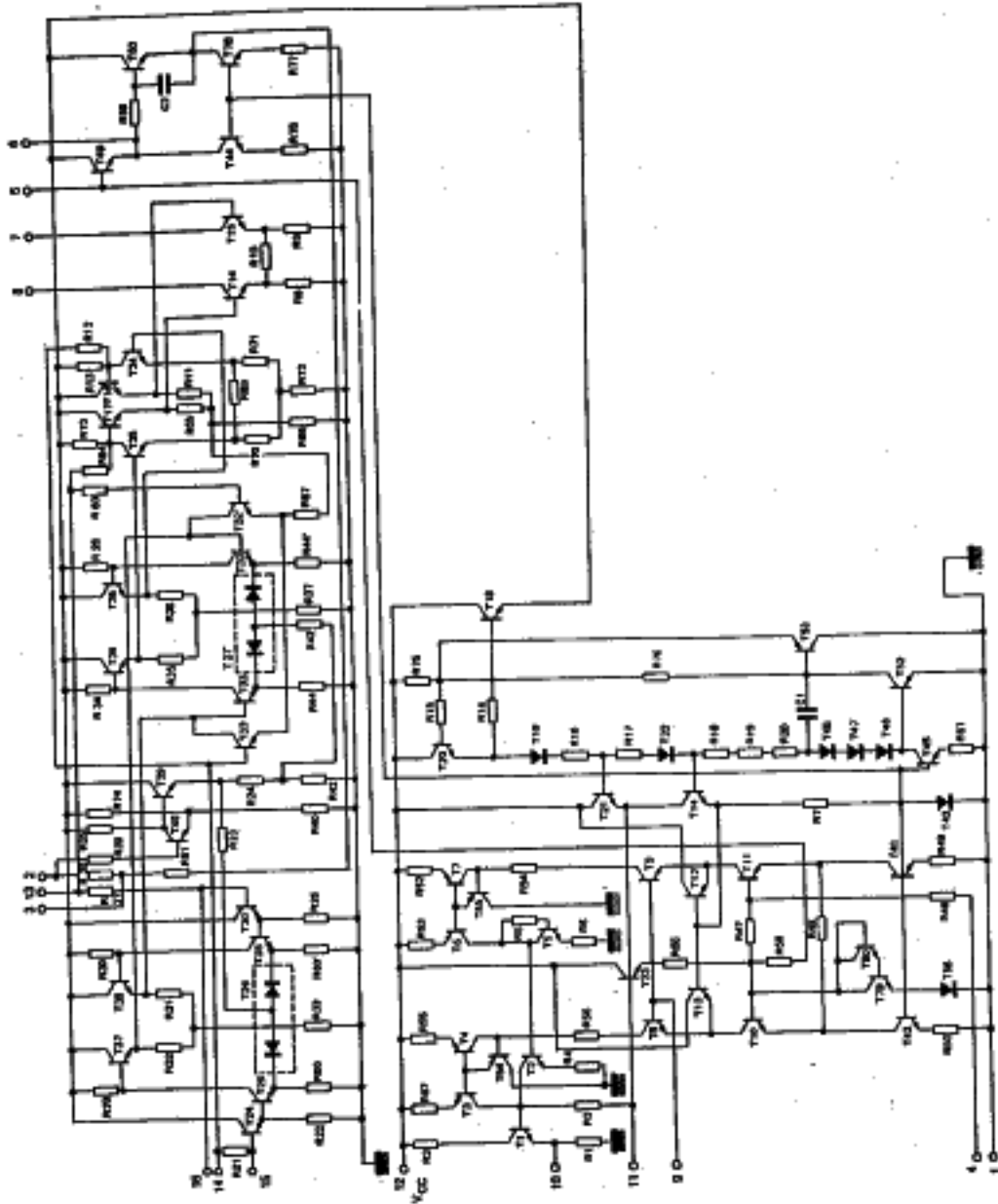


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|---|---|
| 1 Ground | 9 DC control input of AF pre-amplifier |
| 2 Decoupling | 10 AF output after electronic potentiometer |
| 3 AF constant level output | 11 Output regulated voltage |
| 4 AF constant level input | 12 Supply voltage |
| 5 IF input for demodulation | 13 Decoupling |
| 6 Filtering condensator | 14 Decoupling |
| 7 IF output | 15 HF input |
| 8 Supply voltage of IF output amplifier | 16 Decoupling |

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ELECTRIC DIAGRAM



T-77-05-07

MAXIMUM RATINGS (Transformer input 3 : 5)

Rating	Symbol	Value	Unit
Supply voltage	V _{CC}	16.5	V
Power dissipation	P _{tot}	700	mW
Ambient operating temperature	T _{amb}	0 to 80	°C
Storage temperature	T _{stg}	-40 + 125	°C
Maximum junction temperature	T _j	125	°C
Available current at the pin 11 (regulated internal power voltage)		8	mA

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Junction ambient, thermal resistance	R _{th(j-a)}	100	°C/W

ELECTRICAL CHARACTERISTICS

T_{amb} = +25°C ; V_{CC} = 12 V ; F_{JF} = 40 MHz

Characteristics	Symbol	Min	Typ	Max	Unit	
Supply voltage	Pin 12	V _{CC}	10	—	15	V
Supply current	Pins 7, 8, 12		29	37	48	mA
IF constant output current (I _{7 = 18})	Pins 7, 8		—	4	—	mA
Input regulation voltage (threshold) (AF _{nom} - 3 dB)	Pins 15, 16	V _I to 60 Ω	100	—	—	μV _{eff}
AF output voltage m = 80 %	Pin 10	V _{AF}	0.9	1.4	1.5	V _{eff}
m = 50 %			—	900	—	mV _{eff}
m = 30 %			—	500	—	mV _{eff}
Maximum AF attenuation (11 - 47 μF)	Pin 10	V _{AF max} V _{AF min}	70	80	—	dB
AF output impedance constant level (before volume adjustment)	Pin 3		—	200	300	Ω
AF output impedance (after volume adjustment)	Pin 10		—	130	190	Ω
Load impedance	Pin 3	R _L	3.3	—	—	kΩ
Load impedance	Pin 10	R _L	3.3	—	—	kΩ
Available regulated output voltage	Pin 11		4.4	5.1	5.8	V
Temperature coefficient of regulated voltage (between +20° and +70°)	Pin 11		-1	—	+1	mV/°K
AF distortion for m = 30 %			—	—	1	%
AF distortion for m = 50 %			—	—	1.8	%
AF distortion for m = 80 %			—	—	2	%
Output AF level variation for 55 dB of IF signal input variation			—	3	—	dB
AF amplification	Pin 4 to 10		6	7	—	dB
Input impedance	Pin 4		6.5	9	11.5	kΩ
AF output level tolerance	Pin 10		-2	—	+2	dB
Input impedance maximum gain			1.25	1.8	2.25	kΩ
			1.8	2.4	2.9	μF
Input impedance minimum gain			1.05	1.4	1.75	kΩ
			2.3	2.8	3.3	μF
Resistance of volume control potentiometer for 30 dB AF level maximum	R _{pot}		4	—	6	kΩ

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