

# THOMSON-EFCIS

Integrated Circuits

TDA1048

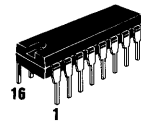
## IF AMPLIFIER AND AM DETECTOR

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

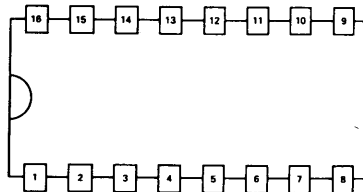


DP SUFFIX  
PLASTIC PACKAGE

2

## PIN CONFIGURATION

Top view



- |   |   |
|---|---|
| 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 condenser                   | 14 Decoupling                               |
| 7 IF output                             | 15 HF input                                 |
| 8 Supply voltage of IF output amplifier | 16 Decoupling                               |

NT7844R1-A 1/4

## THOMSON-EFCIS

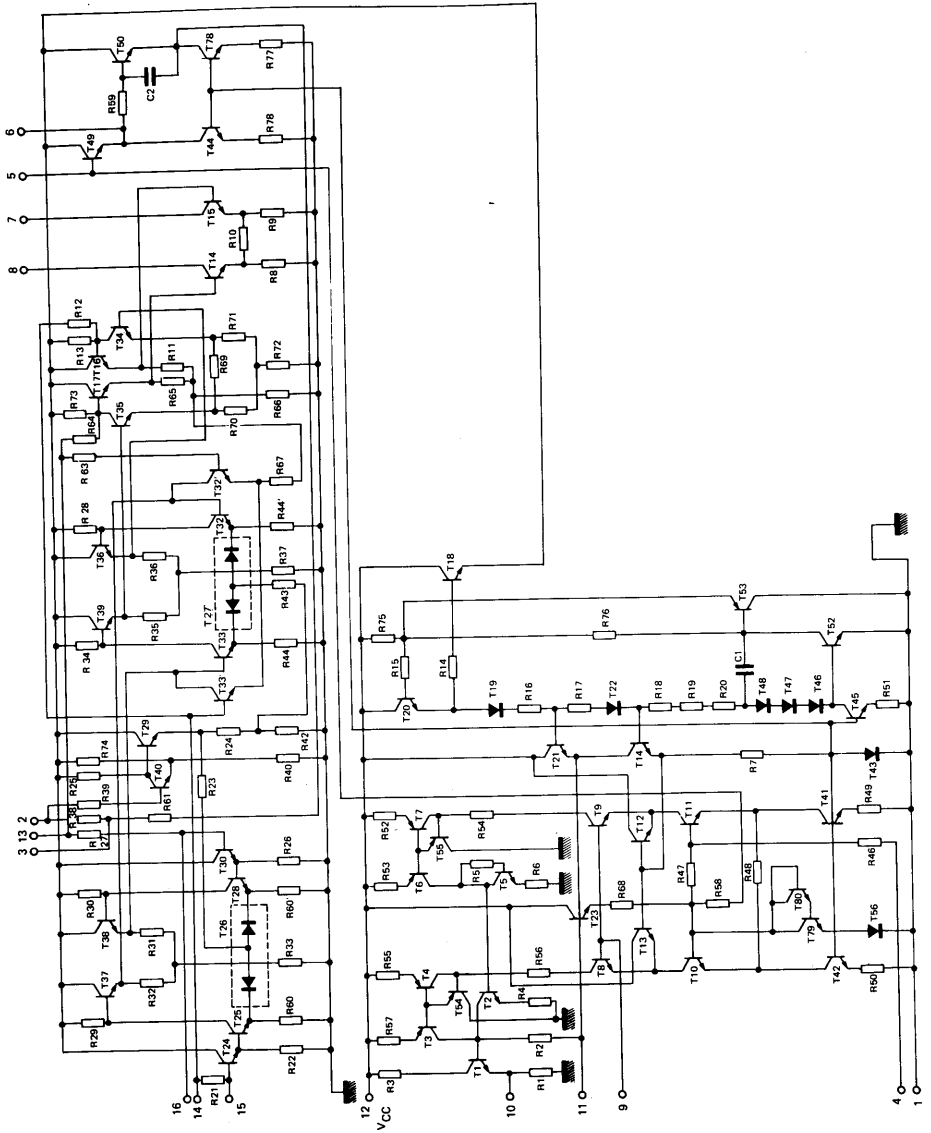
Sales headquarters  
45, av. de l'Europe - 78140 VELIZY - FRANCE  
Tel. : (3) 946 97 19 / Telex : 204780 F



THOMSON-CSF  
COMPONENTS

TDA 1048

ELECTRIC DIAGRAM



**MAXIMUM RATINGS** (Transformer input 3 : 5)

Rating	Symbol	Value	Unit
Supply voltage	V <sub>CC</sub>	16.5	V
Power dissipation	P <sub>tot</sub>	700	mW
Ambient operating temperature	T <sub>amb</sub>	0 to 60	°C
Storage temperature	T <sub>stg</sub>	- 40 + 125	°C
Maximum junction temperature	T <sub>j</sub>	125	°C
Available current at the pin 11 (regulated internal power voltage)		5	mA

**THERMAL CHARACTERISTICS**

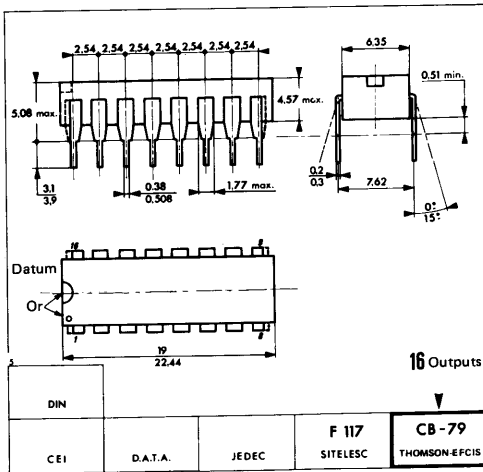
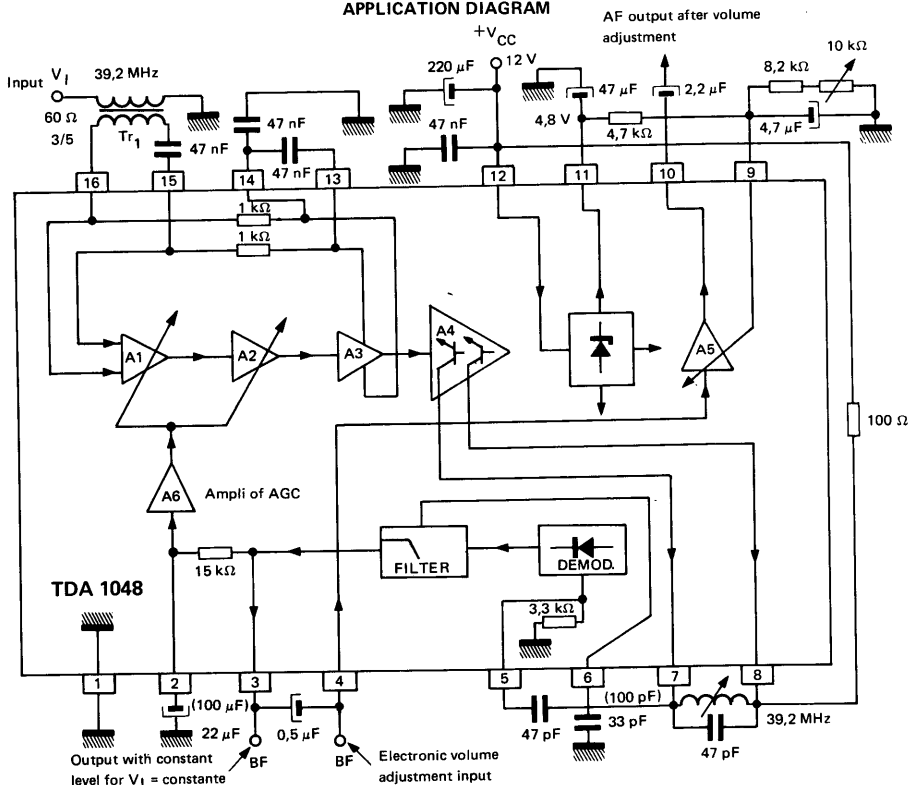
Characteristic	Symbol	Value	Unit
Junction ambient, thermal resistance	R <sub>th(j-a)</sub>	100	°C/W

**ELECTRICAL CHARACTERISTICS**

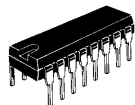
T<sub>amb</sub> = + 25 °C ; V<sub>CC</sub> = 12 V ; F<sub>IF</sub> = 40 MHz

Characteristic	Symbol	Min	Typ	Max	Unit
Supply voltage	Pin 12 V <sub>CC</sub>	10	—	15	V
Supply current	Pins 7, 8, 12	29	37	48	mA
IF constant output current (I <sub>7</sub> = I <sub>8</sub> )	Pins 7, 8	—	4	—	mA
Input regulation voltage (threshold) (AF <sub>nom</sub> - 3 dB)	Pins 15, 16 V <sub>I</sub> to 60 Ω	100	—	—	μV <sub>eff</sub>
AF output voltage m = 80 %	Pin 10 V <sub>AF</sub>	0.9	1.4	1.5	V <sub>eff</sub>
m = 50 %		—	900	—	mV <sub>eff</sub>
m = 30 %		—	500	—	mV <sub>eff</sub>
Maximum AF attenuation (11 = 47 μF)	Pin 10 V <sub>AF max</sub> V <sub>AF min</sub>	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	150	Ω
Load impedance	Pin 3 R <sub>L</sub>	3.3	—	—	kΩ
Load impedance	Pin 10 R <sub>L</sub>	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 %		—	—	1.6	%
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 for maximum gain		1.35	1.8	2.25	kΩ
		1.9	2.4	2.9	pF
Input impedance minimum gain		1.05	1.4	1.75	kΩ
		2.3	2.8	3.3	pF
Resistance of volume control potentiometer for -30 dB AF level maximum	R <sub>pot</sub>	4	—	5	kΩ

APPLICATION DIAGRAM



CASE CB-79



DP SUFFIX PLASTIC PACKAGE

These specifications are subject to change without notice. Please inquire with our sales offices about the availability of the different packages.