TBA120T

FM IF amplifier and demodulator

Technology: Bipolar

Features

- Input and demodulator provided for operating with ceramic-resonators
- No selection of volume-input characteristics
- Independent sound output for VTR and headphone
- Additional sound input
- High ripple rejection
- High residual carrier suppression prevents harmonic distortions

Case: 14 pin dual inline plastic

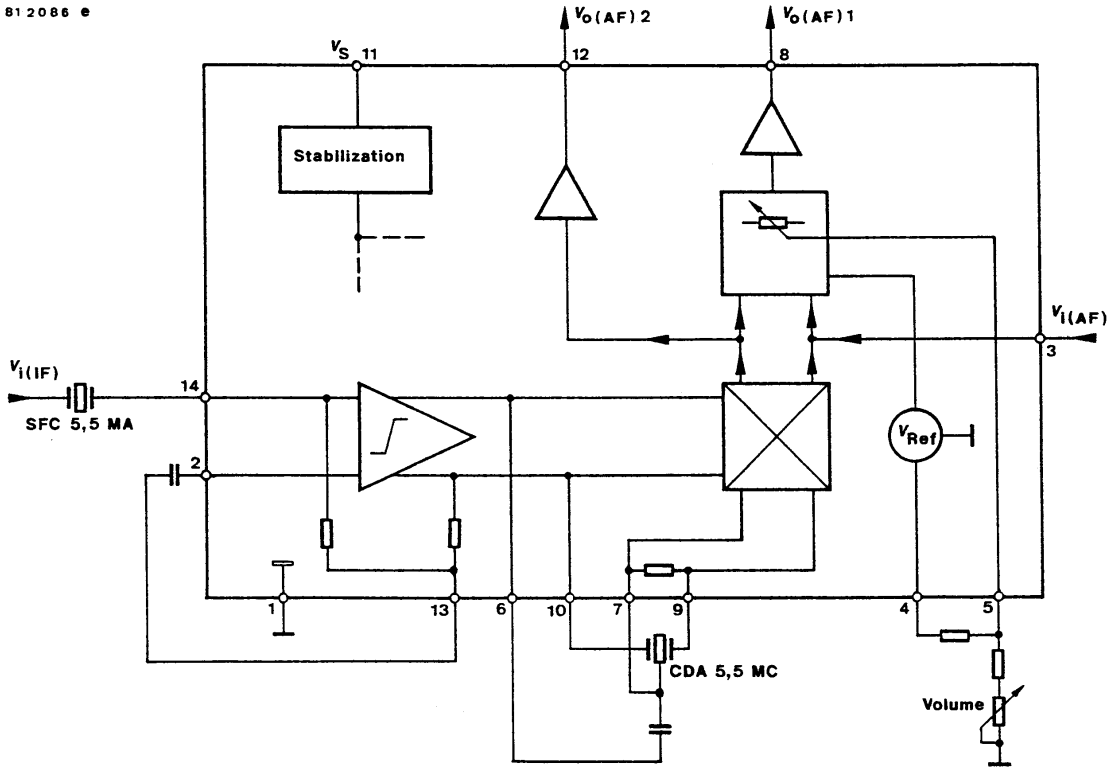


Figure 1 Block diagram

Pin Configuration

Pin	Symbol	Function
1	GND	Ground
2, 13		Feedback
3	$V_{i(AF)}$	AF input – SCART
4	V_{ref}	Reference voltage
5	V_5	Volume control

Pin	Symbol	Function
6,7,9,10		FM demodulator filter
8	$V_{o(AF)1}$	AF output – controlled
11	V_S	Supply voltage
12	$V_{o(AF)2}$	AF output – uncontrolled
14	$V_{i(IF)}$	IF input

Absolute Maximum Ratings

Reference point pin 1, unless otherwise specified

Parameters		Symbol	Value	Unit
Supply voltage	Pin 11	V_S	18	V
Volume setting voltage	Pin 5	V_5	6	V
Reference supply current	Pin 4	I_{Ref}	5	mA
Power dissipation	T_{amb} = 60°C	P_{tot}	400	mW
Ambient temperature range		T_{amb}	–15 to +70	°C
Storage temperature range		T_{stg}	–25 to +125	°C

Electrical Characteristics

T_{amb} = +25°C, V_S = 12 V, f = 5.5 MHz, Figure 3, reference point pin 1, unless otherwise specified

Parameters	Test Conditions / Pins	Symbol	Min.	Typ.	Max.	Unit
Supply voltage range	Pin 11	V_S	10		18	V
Supply current	Pin 11	I_S	9.5		17.5	mA
Reference voltage	Pin 4	V_{oRef}	4.2	4.8	5.5	V
Output resistance	Pin 4	r_{Ref}		12		Ω
Frequency range		f		0 to 12		MHz
IF voltage gain	Pin 6/14	G_{IF}		68		dB
Limited IF output voltage	Pin 6 – 10	$V_{o(IF)pp}$		250		mV
Input limiting voltage	$\Delta f = \pm$ 50 kHz, f_{mod} = 1 kHz Pin 14	$V_{i(IF)}$		30	60	µV
Input impedance	Pin 14	R_i C_i		800 5		Ω pF
AM rejection	m = 30 %, $\Delta f = \pm$ 50 kHz, V_i = 500 µV, f_{mod} = 1 kHz	k_{AM}	50	60		dB
DC voltage at AF output	V_i = 0 Pin 8 Pin 12	$V_{o(AF)1}$ $V_{o(AF)2}$		4 5.6		V V
Ripple rejection	Pin 11/8 Pin 11/12	k_{Br} k_{Br}		35 30		dB
IF residual voltage	without de-emphasis capacitor Pin 8 Pin 12	$V_{o(IF)1}$ $V_{o(IF)2}$		20 30		mV
AF output voltage	V_i = 10 mV, $\Delta f = \pm$ 50 kHz, f_{mod} = 1 kHz, R_5 = 20 kΩ Pin 8 Pin 12	$V_{o(AF)1}$ $V_{o(AF)2}$	650 400	900 650		mV mV
Output resistance	Pin 8, 12	r_o		1.1		kΩ
AF voltage amplification	R_5 = 20 kΩ, Pin 8/3	G_{v1}		7.5		dB
AF damping	R_5 = 13 kΩ, Fig. 3 Pin 8	$-G_{v1}$	24	30	34	dB
Volume setting range	Pin 8	$\Delta V_{o(AF)1}$	70	85		dB
Input resistance	Pin 3	r_i		2		kΩ
Mute function						
Switching current	Pin 2 or 13	I_{sw}			400	µA
Switching voltage	Figure 2	V_{mute}	3			V

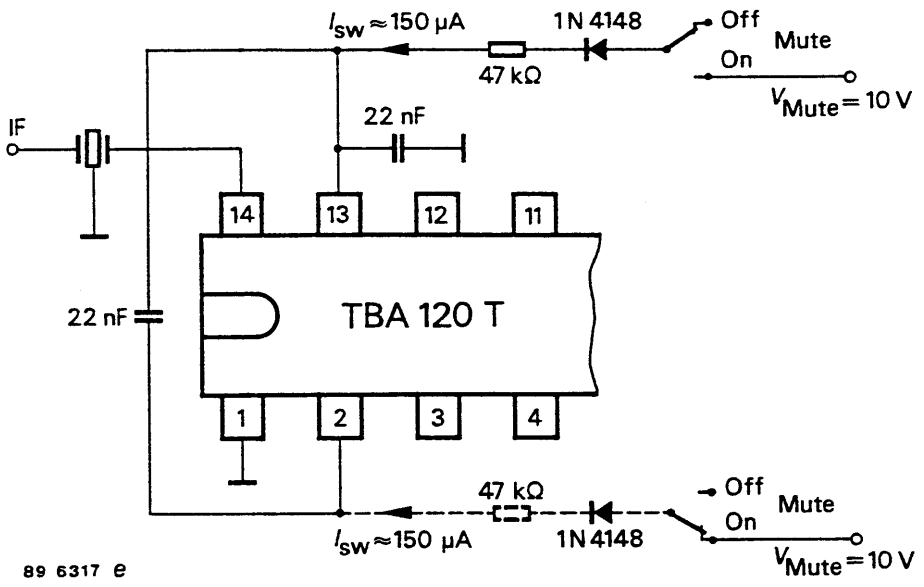


Figure 2

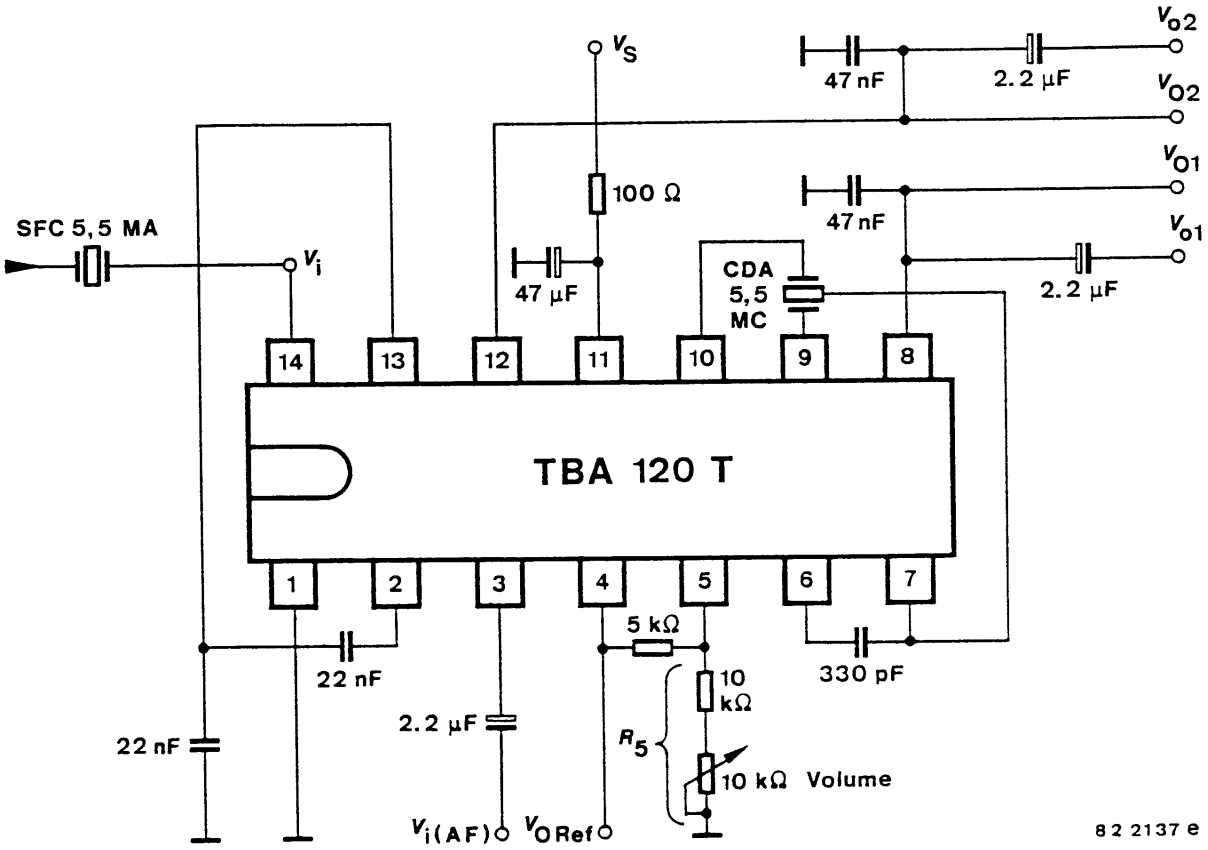
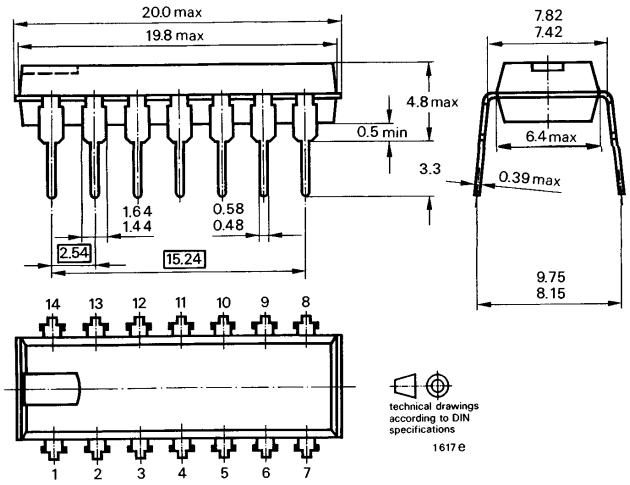


Figure 3 Test circuit

Dimensions in mm

Package: JEDEC MO 001, DIP 14-leads



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