

DESCRIPTION

An eight stage amplifier with balanced demodulator for amplifying, limiting and the demodulation of FM signals, specially designed for the sound-IF in TV and RF-IF amplifier in radios. An electronic Volume Control for the audio output signal is also provided.

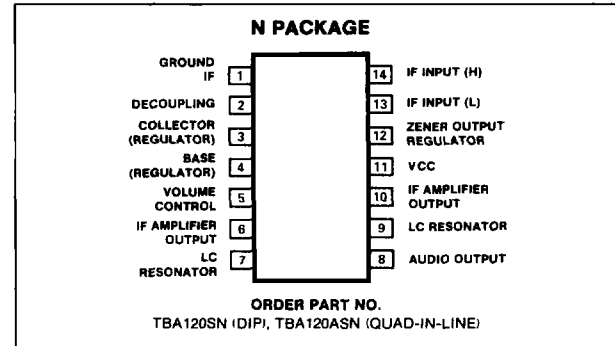
Groups:

TBA 120 S is delivered in groups:
An attenuation of -30dB of the audio output signal requires a resistor from pin 5 to ground as indicated in the table.

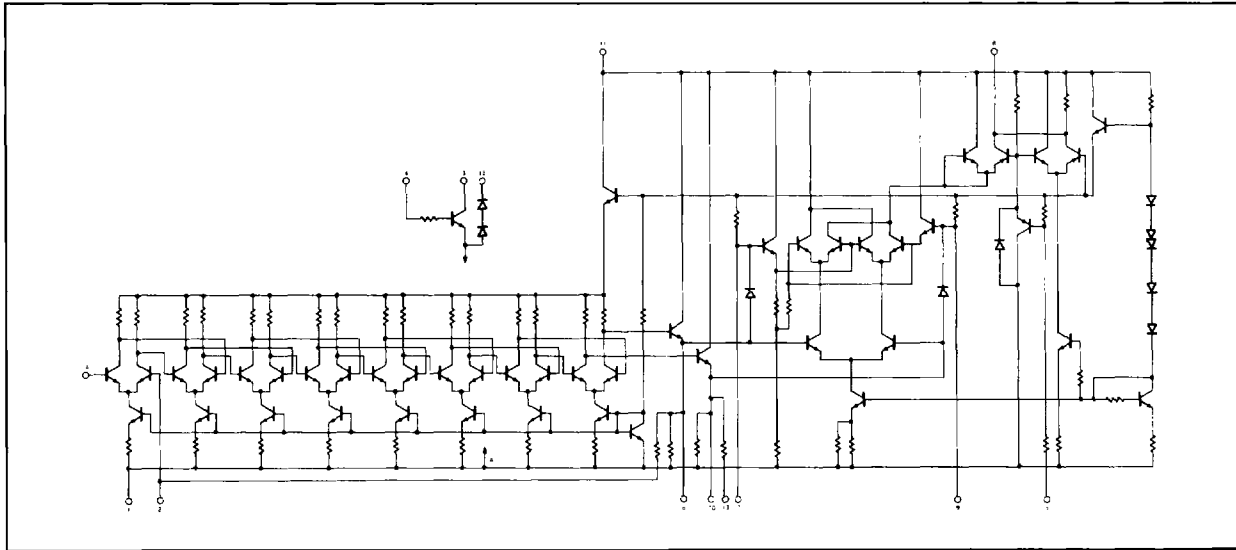
Group	2	3	4	5
Value (k Ω)	1.9 to 2.2	2.1 to 2.5	2.4 to 2.9	2.8 to 3.3

For example, devices marked TBA120S-3 indicate group 3.

PIN CONFIGURATION



EQUIVALENT SCHEMATIC



ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
Supply voltage	18	V
Operating temperature range	-15 to +70	°C
Storage temperature	-40 to +125	°C
Power dissipation	400	mW
max 1 minute	500	mW
Supply current	15	mA
max 1 minute	20	mA
Current 13	1	mA
14	1	mA
Operating supply voltage	6 to 18	V
Frequency range	0 to 12	MHz

DC ELECTRICAL CHARACTERISTICS ($V_{CC} = 12V$; $T_{amb} = 25^{\circ}C$)

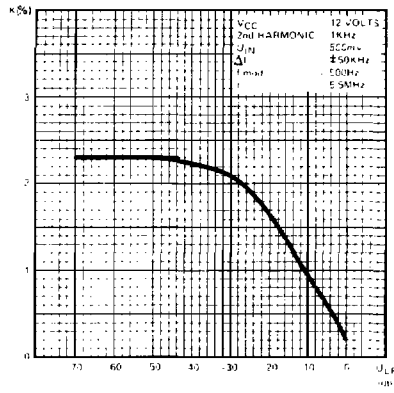
PARAMETER	TEST CONDITIONS	TBA120S			UNIT
		Min	Typ	Max	
I_{CC} Total current requirement	$R_5 = \infty$ $R_5 = 0$	10	14	18	mA
		12	16	20	mA
V_8 dc-portion of the output signal	$V_1 = 0$		7.3		V
V_5 Voltage	-1dB down		2.4	2.6	V
	-70dB down		1.3		V

AC ELECTRICAL CHARACTERISTICS $T_A = 25^{\circ}C$, $V_{CC} = 12V$ unless otherwise specified.

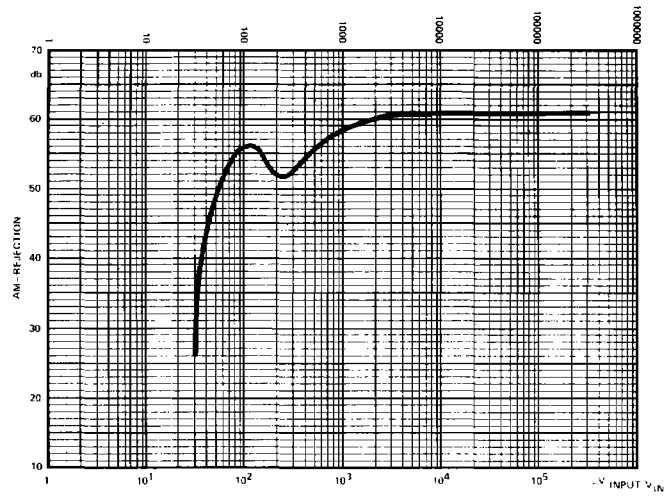
PARAMETER	TEST CONDITIONS	TBA120S			UNIT
		Min	Typ	Max	
G_V IF-voltage gain V_6/V_{14}	$f = 5.5MHz$		68		dB
V_{QPP} IF-output voltage at limiting; each output			250		mV
V_{AFrms} AF-output voltage	$f = 5.5MHz$; $\Delta f = \pm 50kHz$; $V_1 = 10mV$; $f_{mod} = 1kHz$; $Q = 45$; $k = 4\%$		1.1		V
	$f = 5.5MHz$; $\Delta f = \pm 50kHz$; $V_1 = 10mV$; $f_{mod} = 1kHz$; $Q = 20$; $k = 1\%$		0.55		V
V_{lim} Input voltage starting limiting	$f = 5.5MHz$; $f = 50kHz$; $f_{mod} = 1kHz$; $Q = 45$;		30	60	μV
Z_I Input impedance	$f = 5.5MHz$	15/6	40/4.5		k Ω /pf
R_O Output resistance	Pin 8		2.6		k Ω
V_{AFmax} Range of volume control			70		dB
V_{AFmin} AM-suppression	$f = 5.5MHz$; $f = +50Hz$; $V_1 = 500\mu V$; $f_{mod} = 1kHz$; $m = 30\%$	45	55		dB
R_5 Potentiometer resistance	-1dB down		3.7	4.7	k Ω
	-70dB down	1.0	1.4		k Ω
CHARACTERISTICS OF THE AUXILIARY CIRCUIT					
V_{12} Z-voltage	$I_{12} = 5mA$	11.2	12	13.2	V
R_Z Z-resistance			30		Ω
$V_{CEO T43}$ Breakdown voltage	$I_4 = 0$; $I_3 = 500\mu A$	13			V
h_{FE} Current gain	$I_3 = 1mA$	30	120		V

TYPICAL PERFORMANCE CHARACTERISTICS

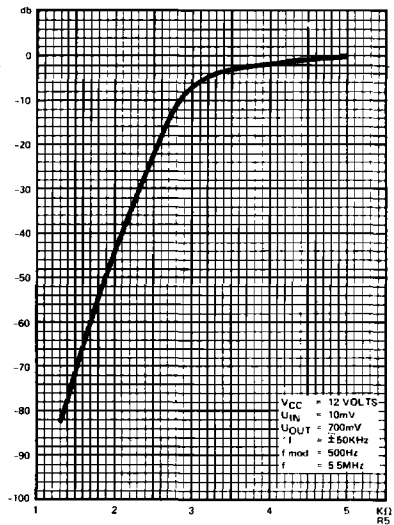
TYPICAL CURVE FROM PRODUCT SELECTION NR3.



TYPICAL CURVE FROM PRODUCE-REFLECTION NR3.



VOLUME CONTROL SIGNETICS TBA120S



TEST CIRCUIT

