

7W AUDIO AMPLIFIER

NOT FOR NEW DESIGN

The TBS810P is an improvement of TBA810S.

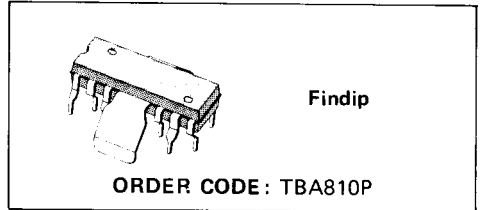
It offers:

- Higher output power ($R_L = 4\Omega$ and 2Ω)
- Low noise
- Polarity inversion protection
- Fortuitous open ground protection
- High supply voltage rejection (40dB min.)

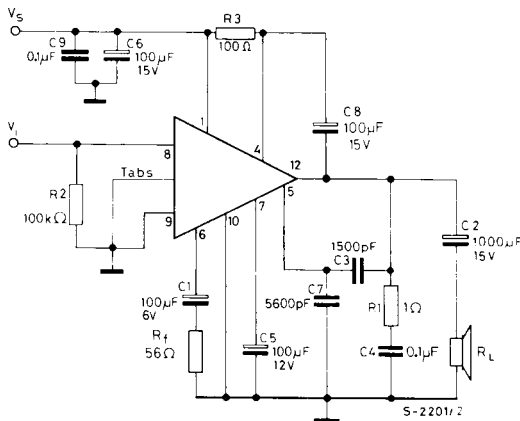
The TBA810P is a monolithic integrated circuit in a 12-lead quad in-line plastic package, intended for use as a low frequency class B amplifier.

 The TBA810P provides 7W output power at $16V/4\Omega$; 7W at $14.4/2\Omega$.

It gives high output current (up to 3A), high efficiency (75% at 60W output) very low harmonic and crossover distortion. The circuit is provided with a thermal limiting circuit and can withstand a short-circuit on the load for supply voltages up to 15V.

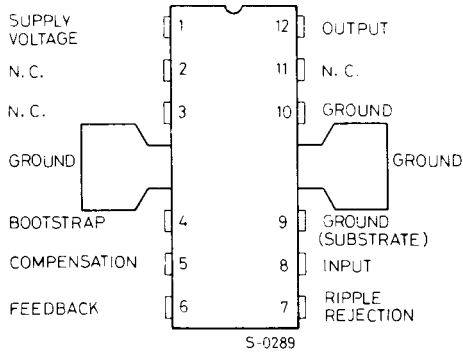

ABSOLUTE MAXIMUM RATINGS

V_s	Supply voltage	20	V
I_o	Output peak current (non repetitive)	4	A
I_o	Output peak current (repetitive)	3	A
P_{tot}	Power dissipation at $T_{amb} \leq 80^\circ C$	1	W
	$T_{tab} \leq 90^\circ C$	5	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	$^\circ C$

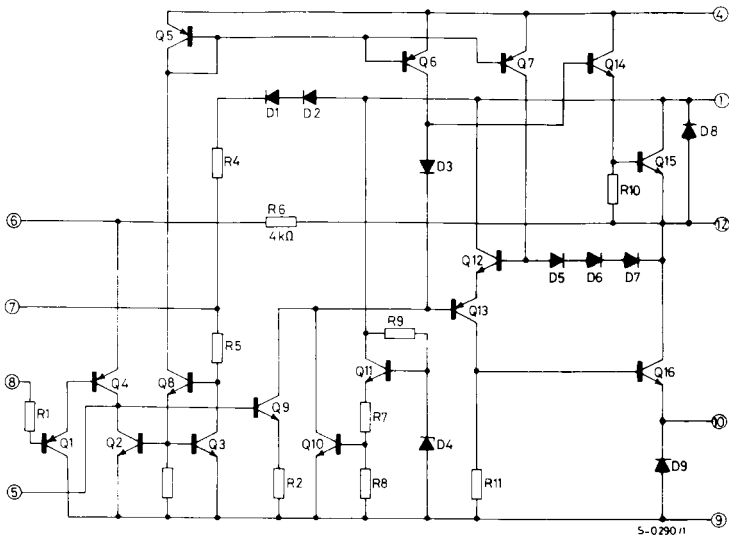
TEST AND APPLICATION CIRCUIT


CONNECTION DIAGRAM

(Top view)



SCHEMATIC DIAGRAM



THERMAL DATA

$R_{thj-tab}$	Thermal resistance junction-tab	max	12	°C/W
$R_{thj-amb}$	Thermal resistance junction-ambient	max	70*	°C/W

* Obtained with tabs soldered to printed circuit with minimized copper area

ELECTRICAL CHARACTERISTICS (Refer to the test circuit; $V_s = 14.4V$, $T_{amb} = 25^\circ C$ unless otherwise specified)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_s Supply voltage (pin 1)		4		20	V
V_o Quiescent output voltage (pin 2)		6.4	7.2	8	V
I_d Quiescent drain current			12	20	mA
I_b Input bias current			0.4		μA
P_o Output power	$d = 10\%$ $R_L = 4\Omega$ $R_L = 2\Omega$ $f = 1KHz$	5.5 5.5	6 7		W W
$V_{i(rms)}$ Input saturation voltage		220			mV
R_i Input resistance (pin 8)			5		M Ω
B Frequency response (-3dB)	$R_L = 4\Omega/2\Omega$ $C_3 = 820pF$ $C_3 = 150pF$	40 to 20,000 40 to 10,000			Hz Hz
d Distortion	$P_o = 50mW$ to 2.5W $R_L = 4\Omega/2\Omega$ $f = 1KHz$		0.3		%
G_v Voltage gain (open loop)	$R_L = 4\Omega$ $f = 1KHz$		80		dB
G_v Voltage gain (closed loop)	$R_L = 4\Omega/2\Omega$ $f = 1KHz$	34	37	40	dB
e_N Input noise voltage	$V_s = 16V$ $B^{-3dB} = 40$ to 15,000Hz		2		μV
i_N Input noise current			80		ρA
η Efficiency	$P_o = 6W$ $R_L = 4\Omega$ $f = 1KHz$		75		%
SVR Supply voltage rejection	$R_L = 4\Omega$ $V_{ripple} = 1V_{rms}$ $f_{ripple} = 10Hz$	40	48		dB

Fig. 1 - Output power vs. supply voltage

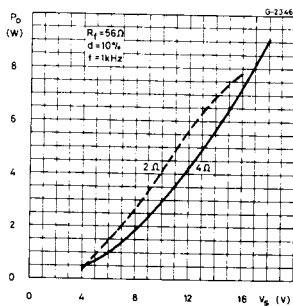


Fig. 2 - Maximum power dissipation vs. supply voltage (sine wave operation)

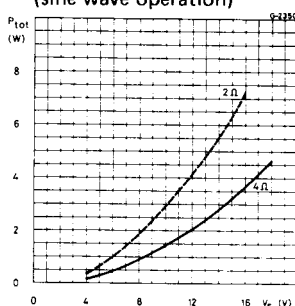


Fig. 3 - Value of C3 vs. feedback resistance for various values of B

