SGS-THOMSON MICROELECTRONICS

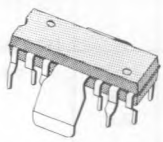
TBA810CB

7W AUDIO AMPLIFIER

NOT FOR NEW DESIGN

- HIGH OUTPUT POWER (7W AT 16V/4Ω; 14.4V/2Ω)
- HIGH OUTPUT CURRENT (3A REPETITIVE)
- LOAD DUMP PROTECTION UP TO 40V
- LOAD SHORT CIRCUIT PROTECTION UP TO V_s = 15V
- POLARITY INVERSION PROTECTION
- THERMAL PROTECTION

The TBA810CB is a monolithic integrated circuit in a 12-lead quad in-line plastic package, expressly designed for use as a power audio amplifier in CB radios.



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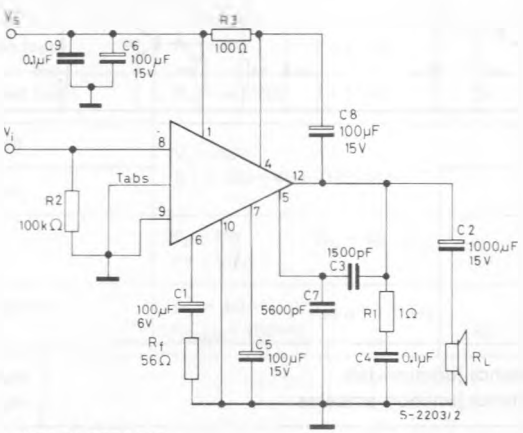
ORDERING NUMBER: TBA810CB

ABSOLUTE MAXIMUM RATINGS

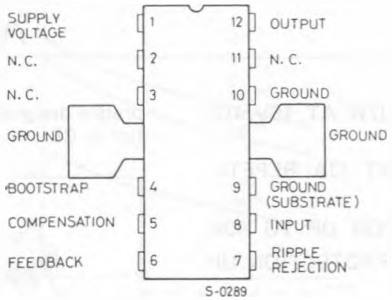
$V_{s\ (peak)}$	Peak supply voltage (50ms)	40	V
V_s	DC supply voltage	28	V
V_s	Operating supply voltage	20	V
I_o	Output peak current (non repetitive)	4	A
I_o	Output peak current (repetitive)	3	A
P_{tot}	Power dissipation at $T_{amb} \leqslant 80°C$	1	W
	at $T_{tab} \leqslant 90°C$	5	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

TEST AND APPLICATION CIRCUIT

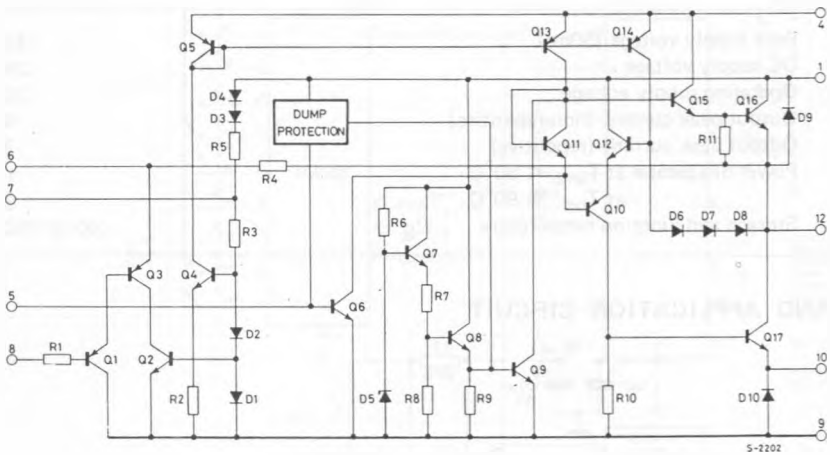


*C3, C7 SEE FIG. 6

CONNECTION DIAGRAM
(Top view)



SCHEMATIC DIAGRAM



THERMAL DATA

$R_{th\ j\text{-}tab}$	Thermal resistance junction-tab	max	12	°C/W
$R_{th\ j\text{-}amb}$	Thermal resistance junction-ambeint	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°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 12)		6.4	7.2	8	V
I_d	Quiescent drain current			12	20	mA
I_b	Input bias current (pin 8)			0.4		μA
P_o	Output power	d = 10% f = 1 kHz R_L = 4Ω R_L = 2Ω	 5.5 5.5	 6 7		 W W
$V_{I(rms)}$	Input saturation voltage		220			mV
V_i	Input sensitivity	f = 1 kHz P_o = 6W R_L = 4Ω R_f = 56Ω R_f = 22Ω P_o = 7W R_L = 2Ω R_f = 56Ω R_f = 22Ω		 75 30 55 20		 mV mV mV mV
R_i	Input resistance (pin 8)			5		MΩ
B	Frequency response (-3 dB)	R_L = 4Ω/2Ω C_3 = 820 pF C_3 = 1500 pF		40 to 20 000 40 to 10 000		Hz Hz
d	Distortion	P_o = 50 mW to 2.5W R_L = 4Ω/2Ω f = 1 kHz		0.3		%
G_v	Voltage gain (open loop)	R_L = 4Ω f = 1 kHz		80		dB
G_v	Voltage gain (closed loop)	R_L = 4Ω/2Ω f = 1 kHz	34	37	40	dB
e_N	Input noise voltage	V_s = 16V B (-3 dB) = 40 to 15 000 Hz		2		μV
i_N	Input noise current			80		pA
η	Efficiency	P_o = 6W R_L = 4Ω f = 1 kHz		75		%
SVR	Supply voltage rejection	R_L = 4Ω V_{ripple} = 1 V_{rms} f_{ripple} = 100 Hz	40	48		dB