

ECG[®] Semiconductors

ECG1374

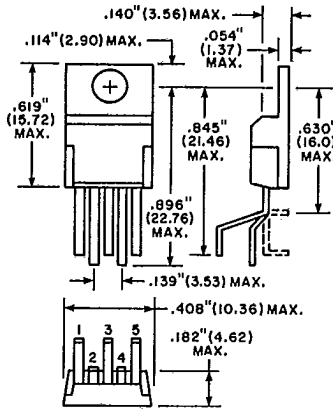
12 W AF PO Amplifier

T-74-05-01

Features

- Few external components
- Space and cost saving
- High reliability
- Flexibility in use
- Thermal protection

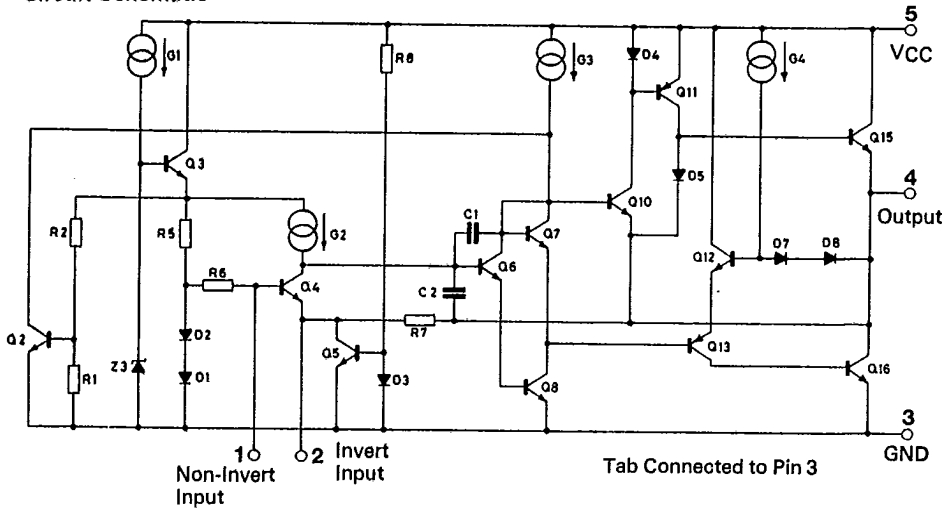
The ECG1374 is a monolithic class B audio power amplifier designed for driving low impedance loads. This device provides high output current capability, with very low harmonic and crossover distortion.



Absolute Maximum Ratings

Characteristic	Symbol	Rating	Unit
Supply Voltage	V_{CC}	28	V
Output Peak Current (Repetitive)	I_o	3	A
Output Peak Current (Non Repetitive)	I_o	4	A
Power Dissipation at $T_{case} = 90^{\circ}C$	P_D	20	W
Storage and Junction Temperature	T_{stg}, T_j	-40 to +150	$^{\circ}C$

Circuit Schematic



ECG1374

290

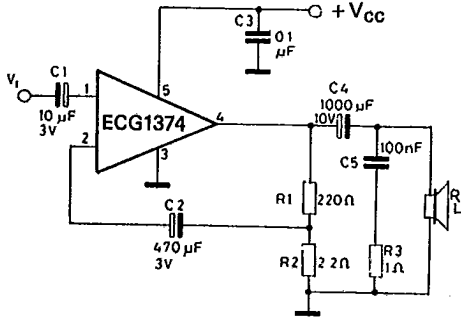
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Electrical Characteristics ($V_{CC}=22\text{ V}$, $T_A=25^\circ\text{C}$ unless otherwise specified)

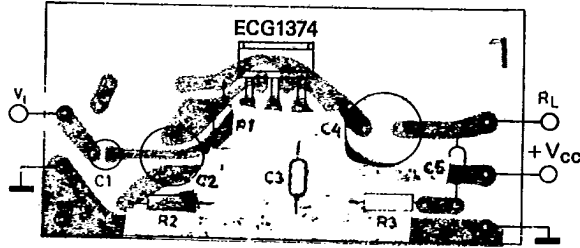
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		10	--	28	V
Quiescent Output Voltage (Pin 4)	V_O		--	10.5	--	V
Quiescent Drain Current (Pin 5)	I_d		--	65	115	mA
Output Power	P_O	THD = 10% $R_L = 8\ \Omega$	--	8	--	W
		$f = 1\text{ kHz}$ $R_L = 4\ \Omega$	10	12	--	W
Input Saturation Voltage	$V_i(\text{RMS})$		300	--	--	mV
Input Sensitivity	V_i	$f = 1\text{ kHz}$	--	20	--	mV
		$P_O = 0.5\text{ W}$ $R_L = 8\ \Omega$	--	80	--	mV
		$P_O = 0.5\text{ W}$ $R_L = 4\ \Omega$	--	14	--	mV
		$P_O = 12\text{ W}$ $R_L = 4\ \Omega$	--	70	--	mV
Frequency Response (-3 dB)	B	$P_O = 1\text{ W}$ $R_L = 4\ \Omega$	40 to 15,000			Hz
Distortion	THD	$f = 1\text{ kHz}$	--	0.15	--	%
		$P_O = 0.05\text{ to }4\text{ W}$ $R_L = 8\ \Omega$ $P_O = 0.05\text{ to }6\text{ W}$ $R_L = 4\ \Omega$	--	0.15	--	%
Input Resistance (Pin 1)	R_i	$f = 1\text{ kHz}$	70	150	--	k Ω
Voltage Gain (Open Loop)	G_V		--	80	--	dB
Voltage Gain (Closed Loop)	G_V	$f = 1\text{ kHz}$ $R_L = 8\ \Omega$	39.5	40	40.5	dB
Input Noise Voltage	E_N	BW = 22 Hz to 22 kHz	--	1	5	μV
Input Noise Current	I_N		--	60	200	pA
Supply Voltage Rejection	SVR	$V_{\text{ripple}} = 0.5\text{ V}$ $f = 100\text{ Hz}$	30	36	--	dB
		$R_g = 10\text{ k}\Omega$ $R_L = 4\ \Omega$ $f = 15\text{ kHz}$	--	36	--	dB

Application Information

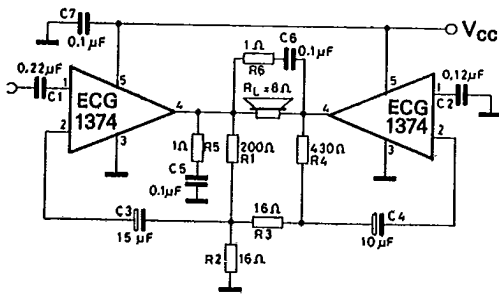
Typical Application



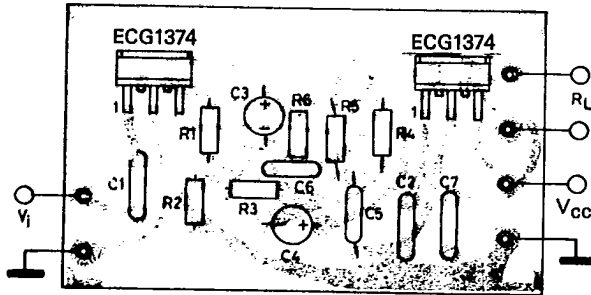
PC Board and Component Layout for Typical Application



25 W Bridge Configuration

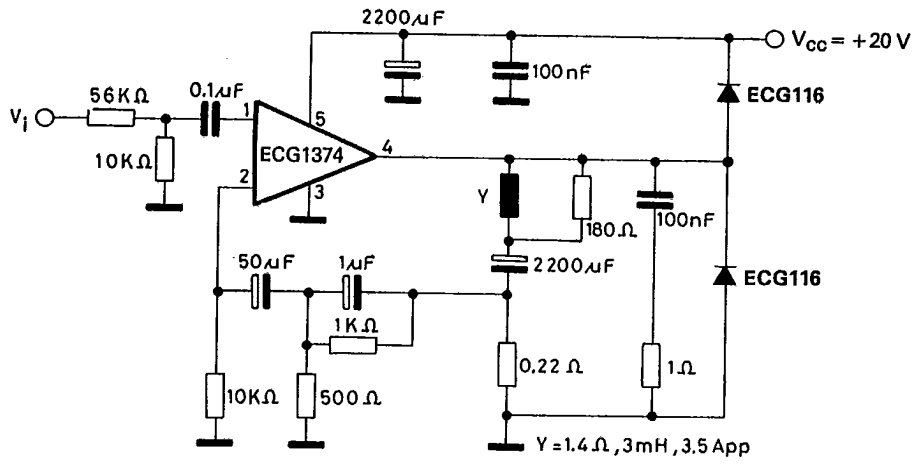


PC Board and Component Layout for 25 W Bridge



The value of the capacitors C3 and C4 are different to optimize the SVR (Typ = 40 dB)

Vertical Deflection for Count-Down Circuits



T-74-05-01

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