

ECG[®]

Semiconductors

ECG1423, ECG1424

5.7 W AF PO

Features

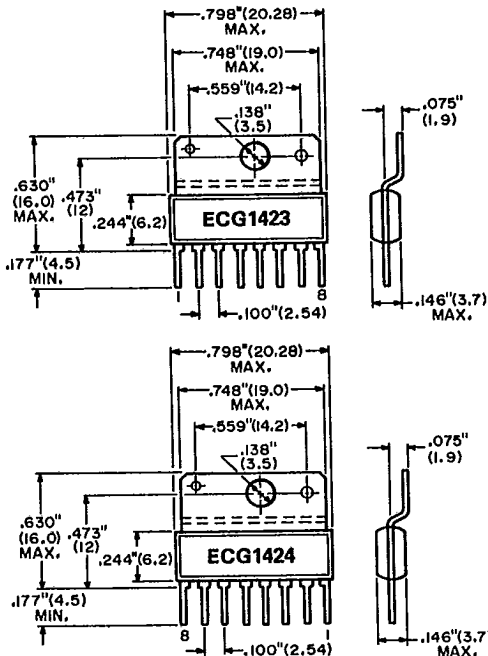
- High power output: 5.7 W typ
- High gain: 52.5 dB typ
- Low distortion: 0.2% typ
- Minimum requirement of external components
- Low power-on chattering noise: no need of additional capacitor
- Low impedance load: 2 Ω load for $P_o = 8.8$ W typ, THD = 10%
- Protection circuitries for current surge, thermal shock, ASO (area of safety operation)

The ECG1423 and ECG1424 are designed as low-frequency, high-power amplifiers with a heat radiation fin.

The ECG1423 has the same characteristics as the ECG1424, except it has reversed pin assignment and biased mounting holes.

The reversed pin assignment is convenient for a stereo application and the biased mounting holes are provided to prevent both devices from mis-mounting.

The ECG1423 and ECG1424 can be operated with a very low impedance load, 2 Ω, and have protection circuitries against output short or surge current.



Pin Connection

- 1—Output
- 2— V_{cc}
- 3—Bootstrap
- 4—GND
- 5—Offset ADJ
- 6—Input
- 7—NFB Bypass
- 8—Inv. Input

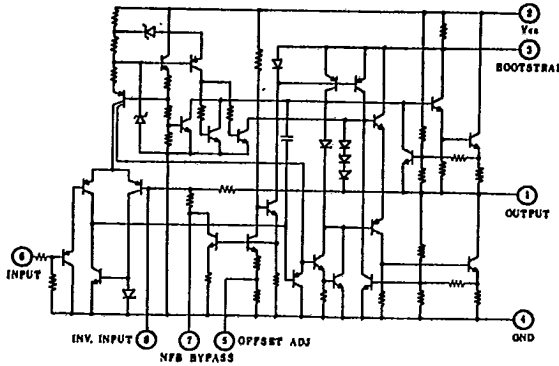
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Power Supply Voltage	V_{cc}	+18	V
Surge Voltage	V_{cc} (S)	+40*	V
Output Current	I_o (peak)	4.5	A
Power Dissipation	P_D	7.5**	W
Storage Temperature	T_{stg}	-65 to +150	$^\circ\text{C}$

* $t_g \leq 0.2$ sec

** $T_c \leq +75^\circ\text{C}$

Schematic Circuit



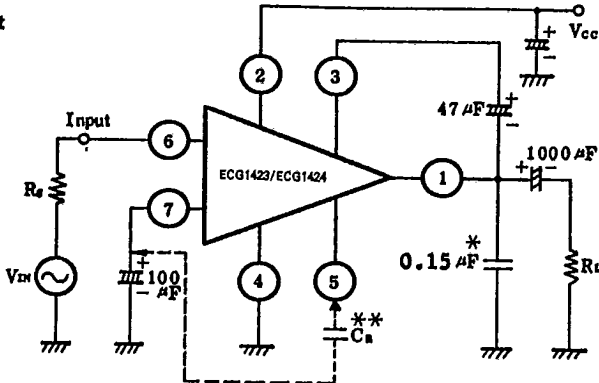
Recommended Operating Conditions

Characteristics	Symbol	Rating	Unit
Supply Voltage	V_{CC}	+9 to +16	V
Operating Temperature	T_{OP}	-20 to +75	$^{\circ}C$

Electrical Characteristics ($T_C = +25^{\circ}C$, $V_{CC} = 13.2 V$, $R_L = 4 \Omega$, $f = 1 kHz$ unless otherwise noted)

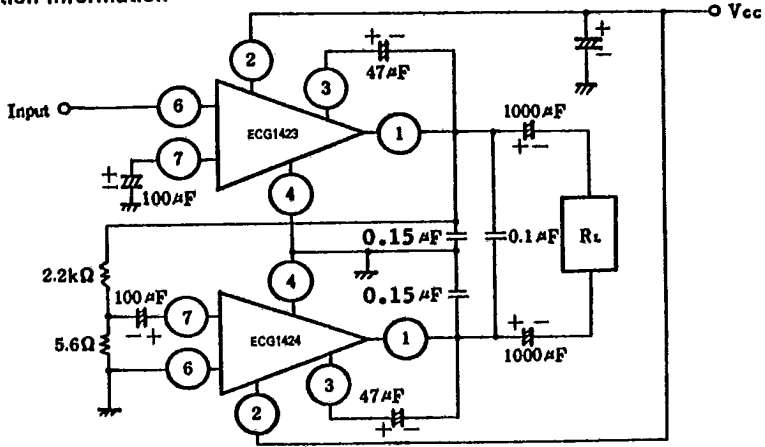
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Power Supply Current	I_Q	$V_{IN} = 0 V$	--	30	60	mA
Voltage Gain	A_V	$P_{O} = 1 W$	50	52.5	55	dB
Output Power	P_{O1}	THD = 10%	5.0	5.7	--	W
Output Power	P_{O2}	THD = 10%, $R_L = 2 \Omega$	--	8.8	--	W
Total Harmonic Distortion	THD ₁	$P_{O} = 1 W$	--	0.2	--	%
Total Harmonic Distortion	THD ₂	$P_{O} = 1 W, R_L = 2 \Omega$	--	0.2	--	%
Output Noise Voltage	V_{NO}	$R_g = 10 k\Omega,$ $BW = 20 Hz \text{ to } 20 kHz$	--	1.0	2.0	mV
Input Resistance	R_{IN}		--	50	--	k Ω

Test Circuit

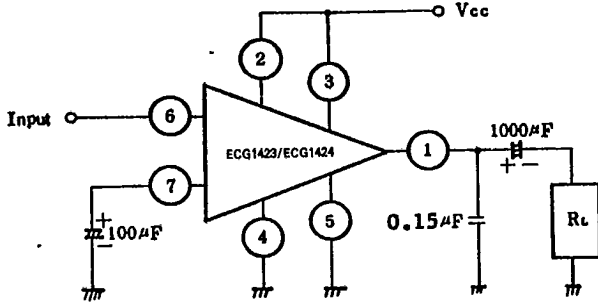


* Use a non-resonant polyester-film capacitor.
** Used for rejection of power supply ripples.

Application Information



BTL (Balanced Transformerless) Application Example



Simple Amplifier Application Example