

ECG[®] Semiconductors

ECG1423, ECG1424

5.7 W AF PO

Features

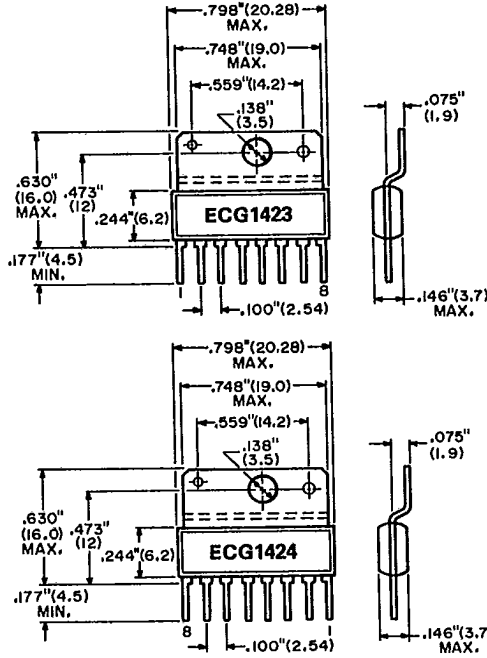
- High power output: 5.7 W typ
- High gain: 52.5 dB typ
- Low distortion: 0.2% typ
- Minimum requirement of external components
- Low power-on chattering noise: no need of additional capacitor
- Low Impedance load: 2 Ω load for P_O = 8.8 W typ, THD = 10%
- Protection circuitries for current surge, thermal 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

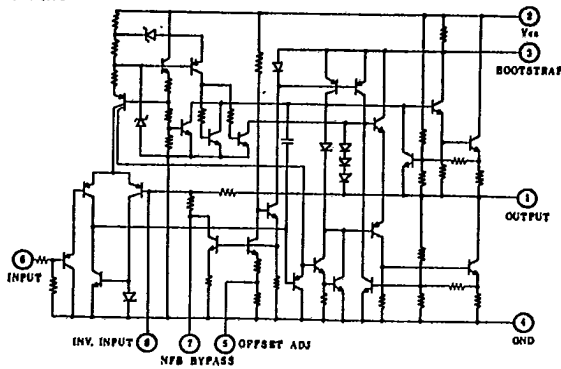
Absolute Maximum Ratings (T_A = 25°C)

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}	- 55 to + 150	°C

* t_S < 0.2 sec

** T_C < +75°C

Schematic Circuit



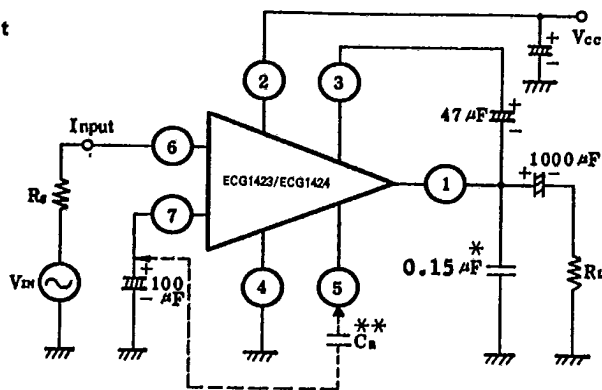
Recommended Operating Conditions

Characteristics	Symbol	Rating	Unit
Supply Voltage	V_{CC}	+9 to +16	V
Operating Temperature	T_{op}	-20 to +75	°C

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

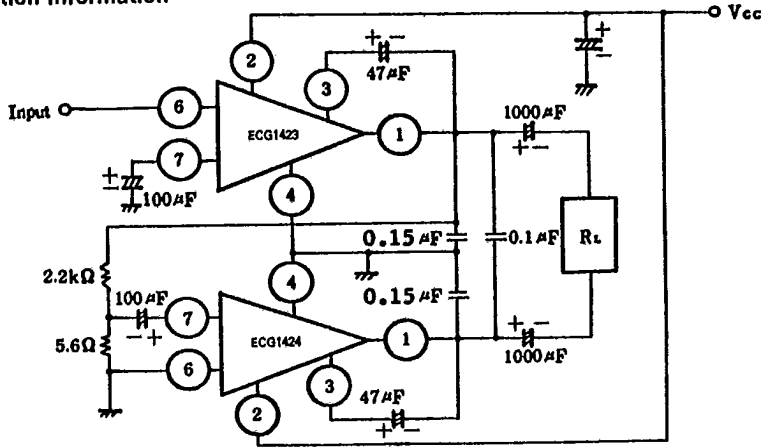
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Power Supply Current	I_Q	$V_{IN} = 0\text{ V}$	--	30	60	mA
Voltage Gain	A_V	$P_O = 1\text{ W}$	50	52.5	55	dB
Output Power	P_{O1}	THD = 10%	5.0	5.7	--	W
Output Power	P_{O2}	THD = 10%, $R_L = 2\ \Omega$	--	8.8	--	W
Total Harmonic Distortion	THD ₁	$P_O = 1\text{ W}$	--	0.2	--	%
Total Harmonic Distortion	THD ₂	$P_O = 1\text{ W}$, $R_L = 2\ \Omega$	--	0.2	--	%
Output Noise Voltage	VNO	$R_G = 10\text{ k}\Omega$, BW = 20 Hz to 20 kHz	--	1.0	2.0	mV
Input Resistance	R_{IN}		--	50	--	k Ω

Test Circuit

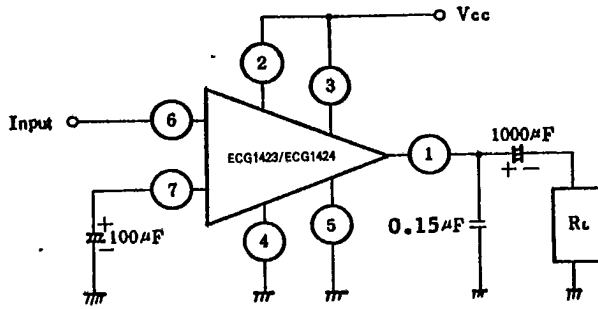


* Use a non-resonant polyester-film capacitor.
 ** Used for rejection of power supply ripples.

Application Information



BTL (Balanced Transformerless) Application Example



Simple Amplifier Application Example