

T-74-05-01

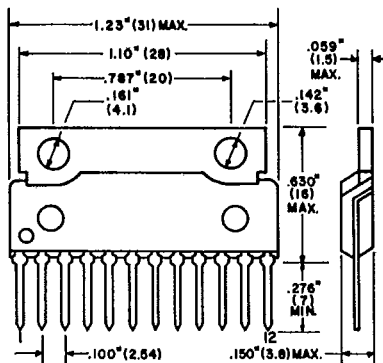
# ECG<sup>®</sup> Semiconductors

## ECG1398 Dual Channel, 5.8 W AF PO, 17 W Bridge (BTL)

### Features

- Single in-line package designed for easy mounting with no electrical isolation
- Handles overvoltage up to 50 V for 200 msec
- Thermal shutdown circuit
- Few external components needed

ECG1398 is specifically designed in a single in-line package for car stereo amplifiers. ECG1398 provides output power of 5.8 watts per channel to a 4 Ω load with 10 percent distortion at 13.2 V or when connected BTL 17 watts may be obtained.

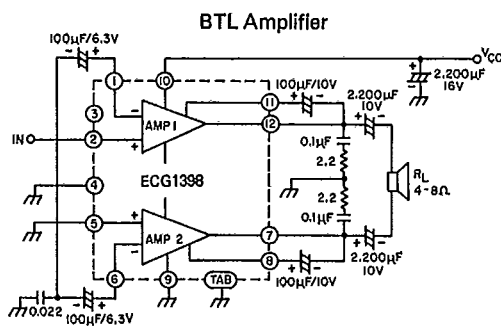


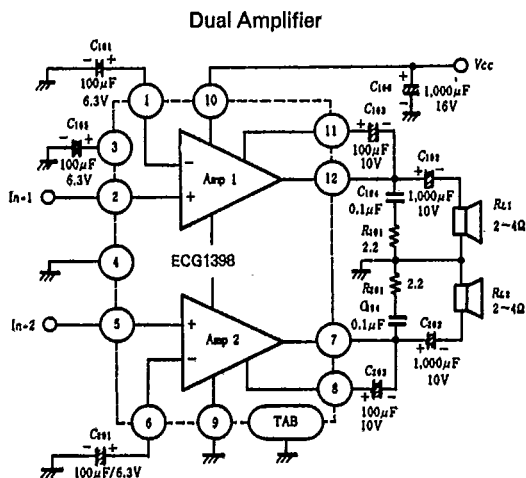
### Absolute Maximum Ratings (T<sub>A</sub> = 25°C)

Characteristic	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	18	V
DC Supply Voltage	V <sub>CC</sub> (DC)	26	V
Peak Supply Voltage	V <sub>CC</sub> (Peak)	50*	V
Output Current Per Channel	I <sub>O</sub>	4	A
Power Dissipation	P <sub>T</sub>	15	W
Thermal Resistance	θ <sub>J-C</sub>	3	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Operating Temperature	T <sub>opr</sub>	-20 to +70	°C
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C

\*Maximum rating for dual amplifier configuration. Maximum rating for the BTL application is 40 V, ≤200 ms pulse width. Rise time ≥1 msec.

### Application Circuits



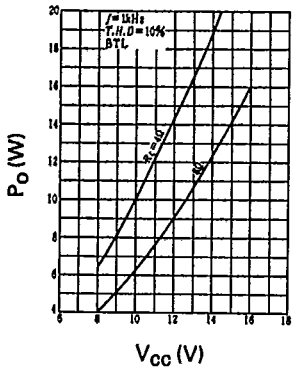


Electrical Characteristics ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 13.2\text{ V}$ ,  $f = 1\text{ kHz}$ ,  $R_L = 4\ \Omega$  unless otherwise specified)

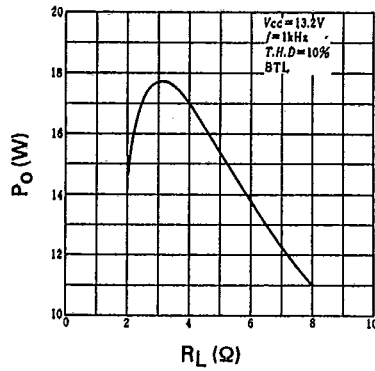
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Quiescent Current	$I_{CCO}$	$V_{IN} = 0$	--	80	160	mA
Input Bias Voltage	$V_B$	$V_{IN} = 0$	--	--	40	mV
Voltage Gain	$G_V$	$V_{IN} = 2.45\text{ mV}$	53	55	57	dB
Voltage Gain Difference	$\Delta G_V$	$V_{IN} = 2.45\text{ mV}$	--	--	$\pm 1.5$	dB
Output Power (Per Channel)	$P_O$	$R_L = 4\ \Omega$ , THD = 10% $V_{CC} = 13.2\text{ V}$	5.0	5.8	--	W
		$V_{CC} = 14.4\text{ V}$	--	7.0	--	
		$R_L = 2\ \Omega$ , THD = 10% $V_{CC} = 13.2\text{ V}$	--	9.0	--	
		$V_{CC} = 14.4\text{ V}$	--	10	--	
Total Harmonic Distortion	THD	$P_O = 0.5\text{ W}$	--	0.15	1.0	%
Noise Output	WBN	$R_g = 10\text{ k}\Omega$ , $BW = 20\text{ Hz to } 20\text{ kHz}$	--	1.0	2.0	mV
Supply Voltage Rejection Ratio	SVR	$R_g = 600\ \Omega$ , $f = 500\text{ Hz}$	30	40	--	dB
Input Resistance	$R_i$	$f = 1\text{ kHz}$	--	30	--	k $\Omega$
Rolloff Frequency	Low	$G_V = -3\text{ dB}$ , $f = 1\text{ kHz}$	--	40	--	Hz
				High	$f_H$	--
Crosstalk	CT	$f = 500\text{ Hz}$ , $R_g = 600\ \Omega$	40	58	--	dB

Typical Characteristics

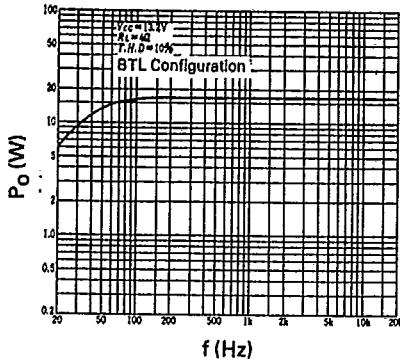
Output Power vs Supply Voltage



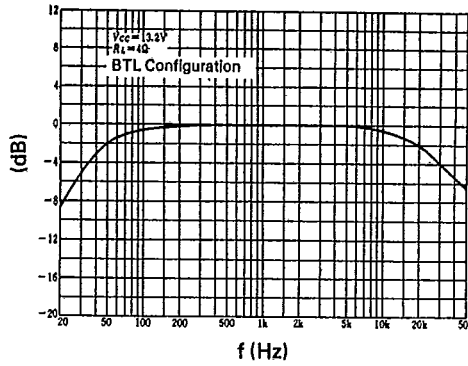
Output Power vs Load Resistance



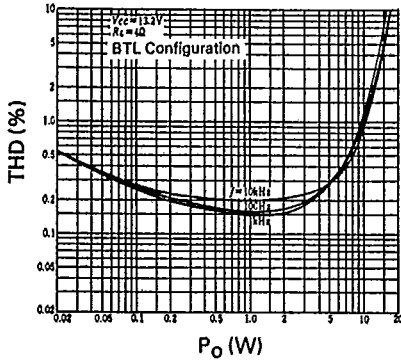
Output Power vs Frequency



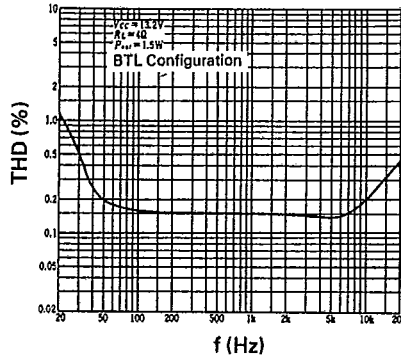
Relative Voltage Gain vs Frequency



Total Harmonic Distortion vs Output Power

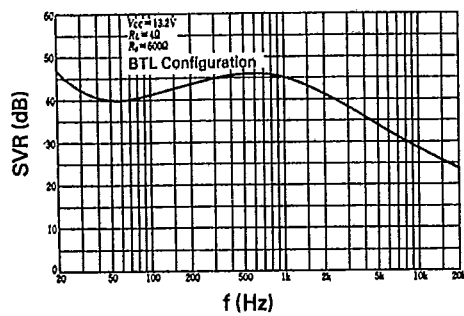


Total Harmonic Distortion vs Frequency



Typical Characteristics (Cont.)

Supply Voltage Rejection Ratio vs Frequency



Power Dissipation vs Output Power

