

# ECG<sup>®</sup> Semiconductors

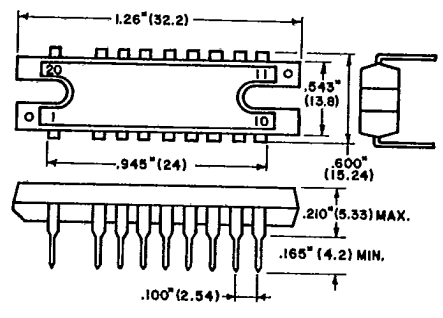
## ECG1382

4.2 W/Ch Dual AF PO  
9 W BTL AF PO

T-74-05-01

**Features**

- Dual amplifier can be used for stereo or BTL amplifier
- High output power at low supply voltage  
9 W (Typ) BTL at  $V_{CC}=12\text{ V}$ ,  $R_L=8\ \Omega$   
4.2 W (Typ)/Ch at  $V_{CC}=12\text{ V}$ ,  $R_L=4\ \Omega$
- Small pop noise due to the muting circuit
- Good ripple rejection
- Soft tone at output saturation
- Channel separation typically 55 dB
- Voltage gain of 45 dB



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

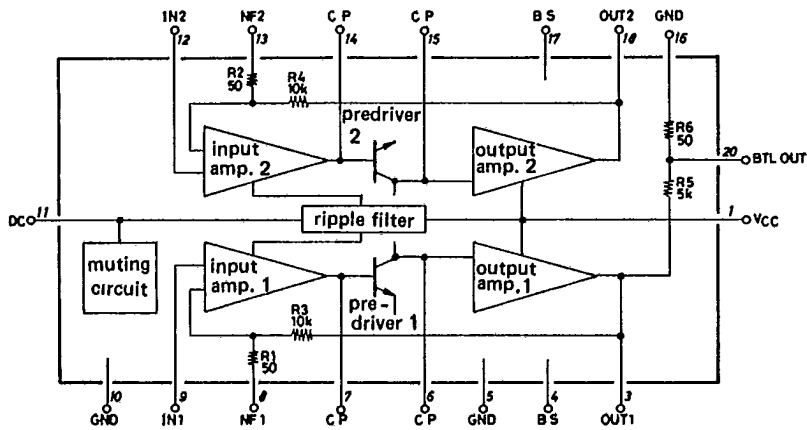
Parameters	Symbol	Rating	Unit
Maximum Supply Voltage	$V_{CC\text{ max}}$	18	V
Maximum Output Current	$I_O\text{ max}$	Per Ch 2.25	A
Allowable Power Dissipation	$P_D\text{ max}$	10.0*	W
Operating Temperature	$T_{opg}$	-20 to +75	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +150	$^\circ\text{C}$

\* With 100 x 100 x 1.5 mm<sup>3</sup> Al heat sink.

**Electrical Characteristics** ( $T_A=25^\circ\text{C}$ ,  $V_{CC}=12\text{ V}$ ,  $f=1\text{ kHz}$ ,  $R_L=4\ \Omega$ , ( ) shows 8  $\Omega$ , with the appropriate heat sink)

Parameters	Symbol	Test Conditions	Min	Typ	Max	Units
Quiescent Current	$I_{CCO}$		--	45	60	mA
Voltage Gain	$G_V$	Stereo	43	45	47	dB
		BTL	49	51	53	dB
Channel Balance		Stereo	--	--	$\pm 1$	dB
Output Power	$P_O$	Stereo, THD = 10%	3.6	4.2	--	W
		BTL, THD = 10%	--	(9.0)	--	W
Total Harmonic Distortion	THD	$P_O=250\text{ mW}$ Stereo	--	0.3	1.5	%
		BTL	--	0.5	--	%
Input Resistance	$r_i$		21k	30k	--	$\Omega$
Output Noise Voltage	$V_{NO}$	$R_g=0$ Stereo	--	0.3	1.0	mV
		$R_g=10\text{ k}\Omega$ Stereo	--	0.5	2.0	mV
Ripple Rejection	$R_r$	$R_g=0$ , $v_r=150\text{ mV}$ Stereo	40	46	--	dB
Channel Separation	Sep	$R_g=10\text{ k}\Omega$ , $v_o=0\text{ dB}$ Stereo	40	55	--	dB

Equivalent Circuit Block Diagram



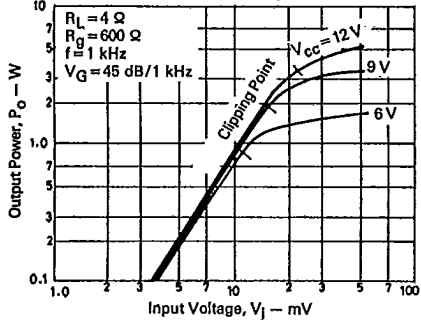
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Recommended Operation Condition ( $T_A = 25^\circ\text{C}$ )

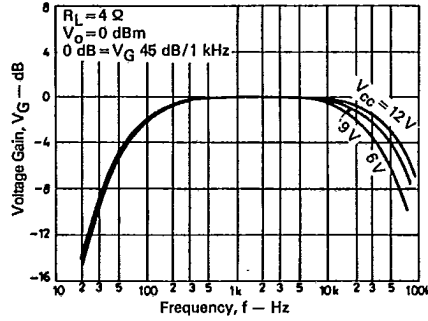
Parameter	Symbol	Test Condition	Rating	Unit
Recommended Supply Voltage	$V_{CC}$		12	V
Load Resistance	$R_L$	Stereo	4 to 8	$\Omega$
		Bridge (BTL)	8	$\Omega$

Typical Characteristics

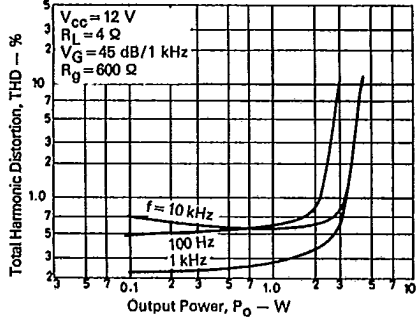
Stereo Application  $P_O - V_i$



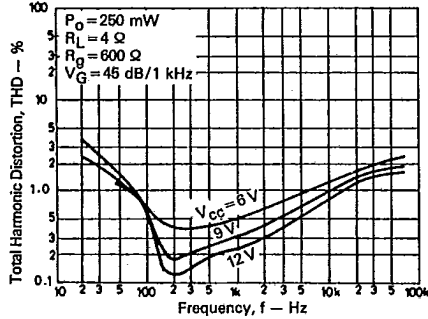
f Response



THD -  $P_O$

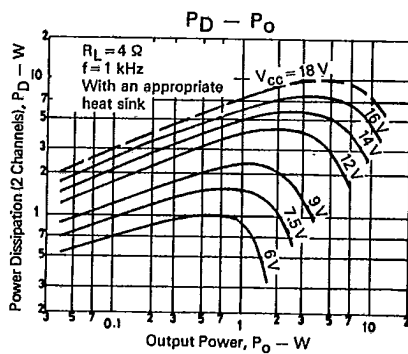
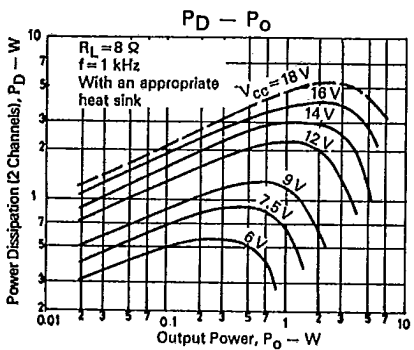
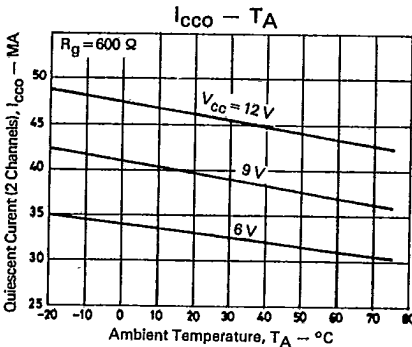
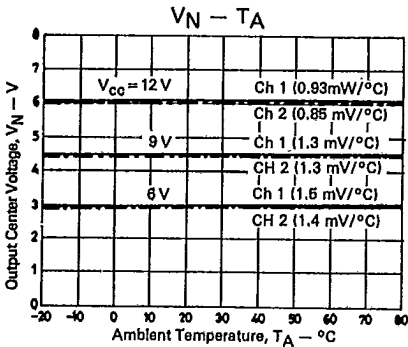
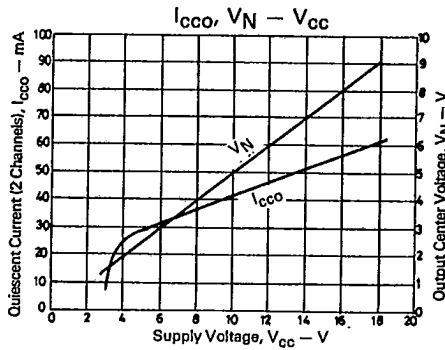
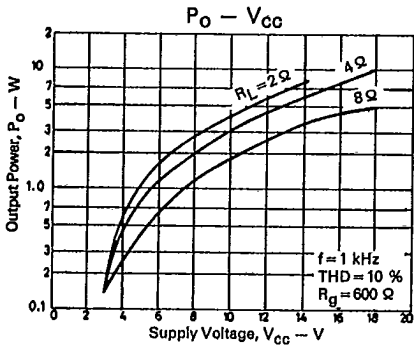
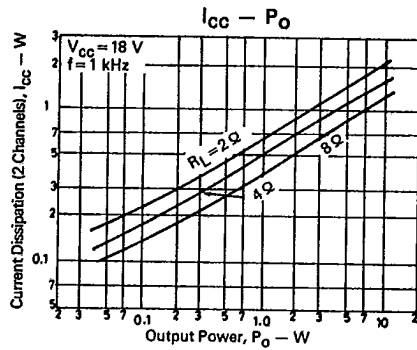
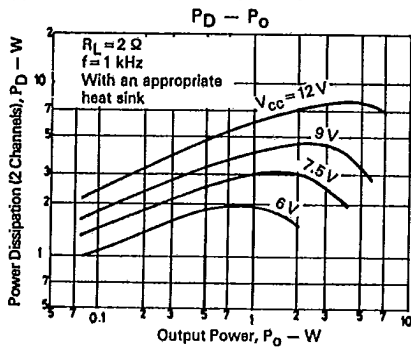


THD - f



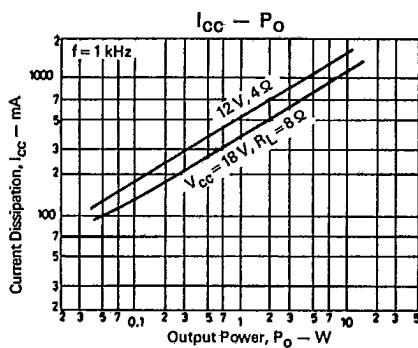
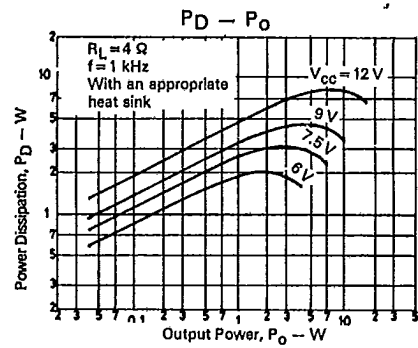
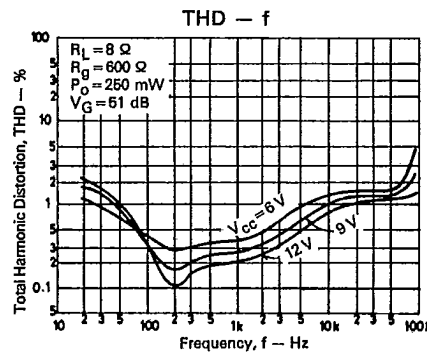
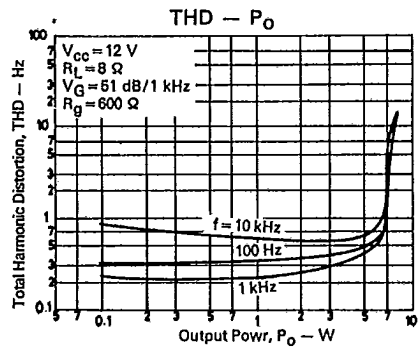
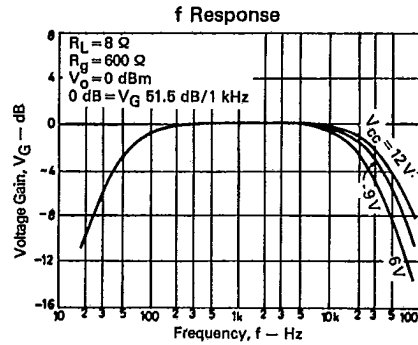
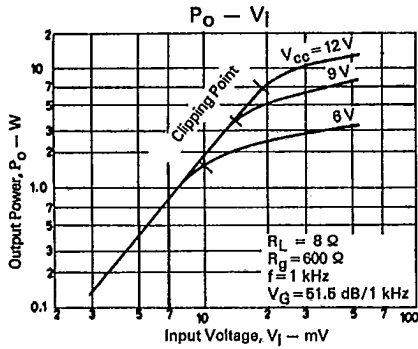
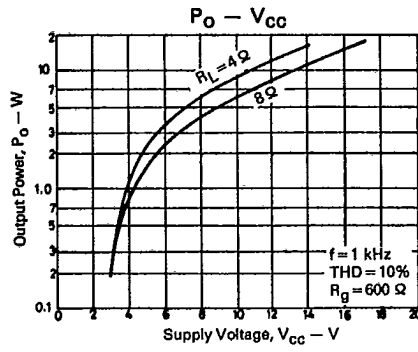
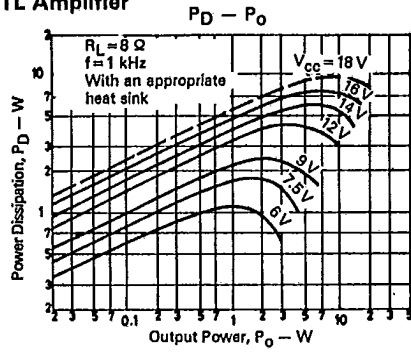
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Typical Characteristics (Cont'd)



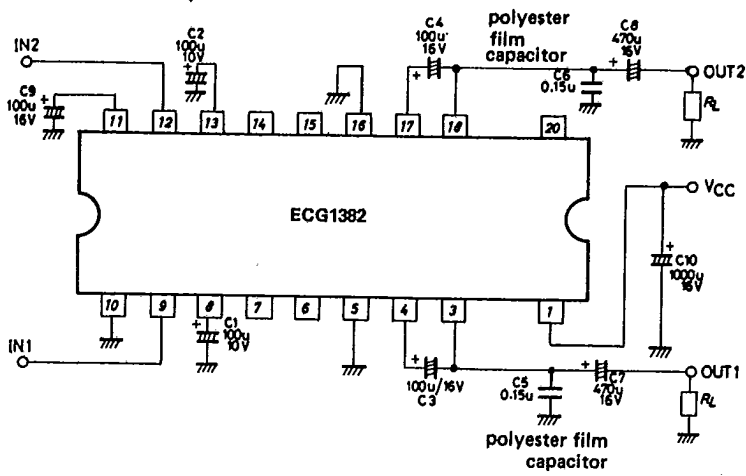
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Typical Characteristics (Cont'd)  
BTL Amplifier



Application 1: Stereo Amplifier

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Application 2: BTL Amplifier

