ECG1085

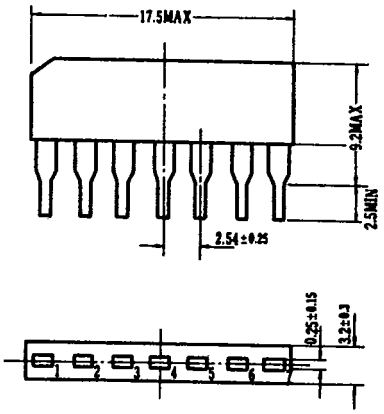
LO-NOISE AUDIO PREAMPLIFIER

- Various High Quality Pre-Amplifier
- Voltage Amplifier Applications
- Low Noise : $V_{NI} = 1.0\,\mu V_{rms}$ (Typ.)
- High Open Loop Voltage Gain :

  $G_{V(1)} = 92$ dB (Typ.)
- Low Distortion : KF = 0.1% (Max.)

  $V_{OUT} = 7\ V_{rms}$, $G_{V(2)} = 40$ dB,

  f = 1 kHz

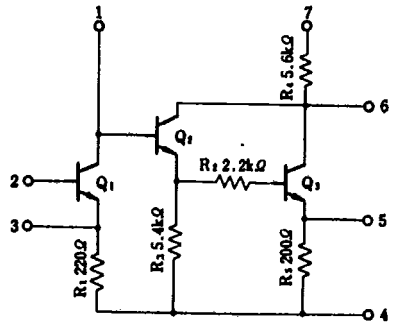


MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Supply Voltage	V_{cc}	42	V
Power Dissipation (Note)	P_D	400	mW
Operating Temperature	T_{opr}	-30 to 75	°C
Storage Temperature	T_{stg}	-55 to 125	°C

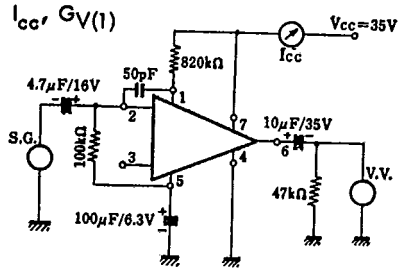
Note: Derated above $T_a = 25^\circ C$ in the proportion of 4 mW/°C.

Equivalent Circuit



Test Circuit

1. I_{cc}, $G_{V(1)}$

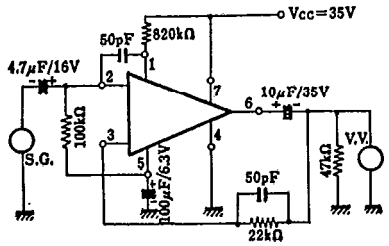


ELECTRICAL CHARACTERISTICS (V_{cc} = 35 V, Ta = 25°C)

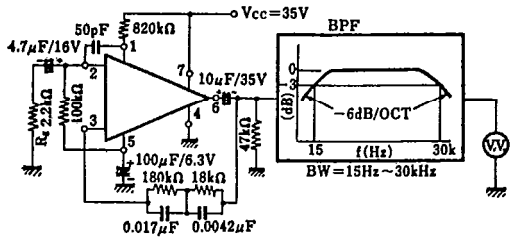
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Supply Current	I_{cc}	1	V_{IN} = 0	--	3.5	6.0	mA
Voltage Gain (1) (Open Loop)	$G_{V(1)}$	1	V_{IN} = -85 dBm f = 1 kHz	87	92	--	dB
Voltage Gain (2) (Closed Loop)	$G_{V(2)}$	2	V_{OUT} = 7 V_{rms} f = 1 kHz	38	40	42	dB
Maximum Output Voltage	V_{OM}	2	f = 1 kHz KF = 0.1% (below)	7.0	--	--	V_{rms}
Equivalent Input Noise Voltage	V_{NI}	3	R_g = 2.2 k Ohms RIAA (Compensated) 1 kHz θ Gain Converted with G_V (1 kHz)	--	1.0	1.5	μV_{rms}

Test Circuits (Continued)

2. $G_{V(2)}$, V_{OM}



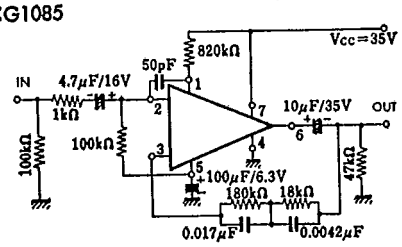
3. V_{NI}



Application Circuit

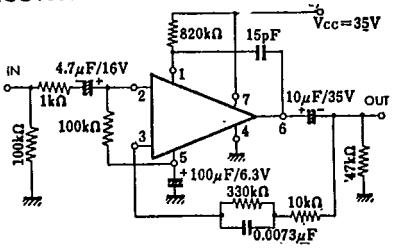
4. (RIAA, G_V = 40 dB, f = 1 kHz)

Typical Magnetic Phono Pre-Amplifier using ECG1085

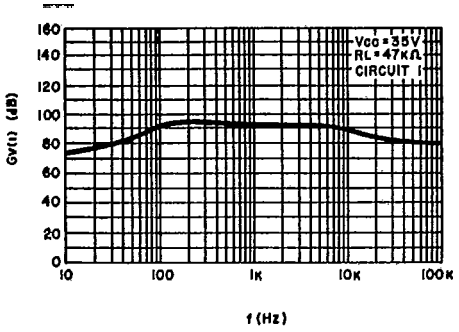


5. (NAB 9.5 cm/sec, G_V = 40 dB, f = 1 kHz)

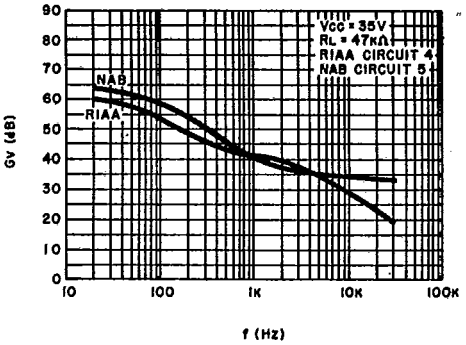
Typical Tape Recorder Pre-Amplifier using ECG1085



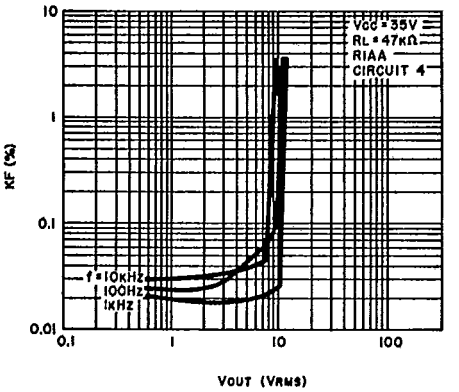
$G_{V(1)} - f$



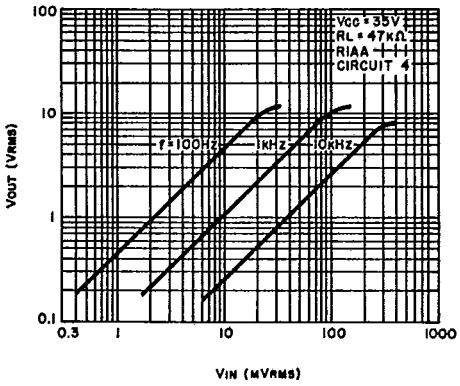
$G_V - f$



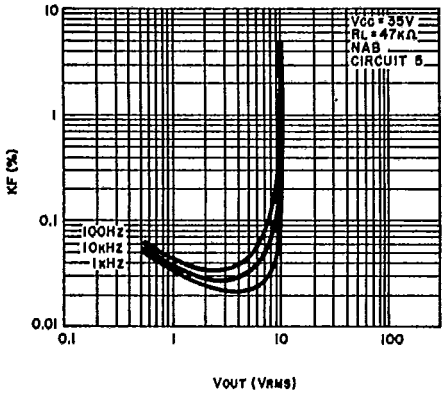
$KF - V_{OUT}$



$V_{OUT} - V_{IN}$



$KF - V_{OUT}$



$V_{OUT} - V_{IN}$