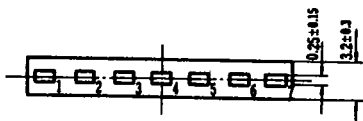
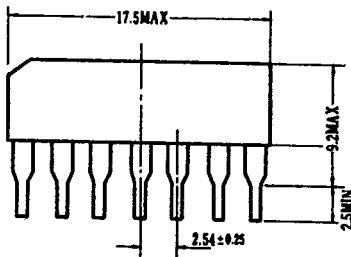


- Various High Quality Pre-Amplifier
- Voltage Amplifier Applications
- Low Noise :  $V_{NI} = 1.0 \mu V_{rms}$  (Typ.)
- High Open Loop Voltage Gain :  
 $G_{V(1)} = 92 \text{ dB}$  (Typ.)
- Low Distortion :  $KF = 0.1\%$  (Max.)  
 $V_{OUT} = 7 V_{rms}$ ,  $G_{V(2)} = 40 \text{ dB}$ ,  
 $f = 1 \text{ kHz}$

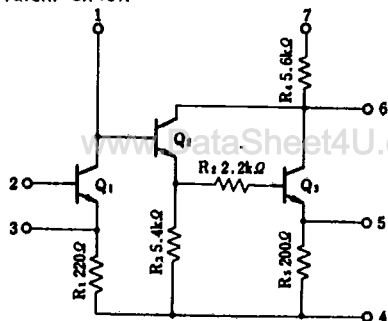


### MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	42	V
Power Dissipation (Note)	$P_D$	400	mW
Operating Temperature	$T_{opr}$	-30 to 75	$^\circ\text{C}$
Storage Temperature	$T_{sfg}$	-55 to 125	$^\circ\text{C}$

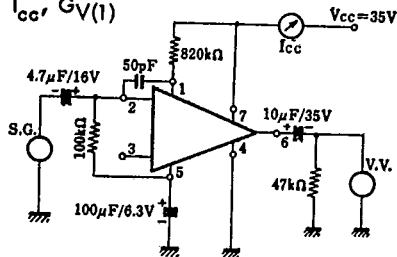
Note: Derated above  $T_a = 25^\circ\text{C}$  in the proportion of  $4 \text{ mW}/^\circ\text{C}$ .

### Equivalent Circuit



### Test Circuit

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

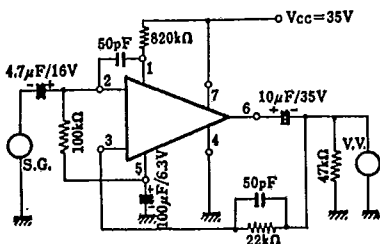


# ELECTRICAL CHARACTERISTICS ( $V_{CC} = 35\text{ V}$ , $T_a = 25^\circ\text{C}$ )

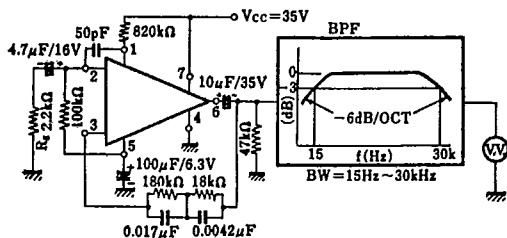
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Supply Current	$I_{CC}$	1	$V_{IN} = 0$	--	3.5	6.0	mA
Voltage Gain (1) (Open Loop)	$G_V(1)$	1	$V_{IN} = -85\text{ dBm}$ $f = 1\text{ kHz}$	87	92	--	dB
Voltage Gain (2) (Closed Loop)	$G_V(2)$	2	$V_{OUT} = 7\text{ V}_{rms}$ $f = 1\text{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

## Test Circuits (Continued)

### 2. $G_V(2)$ , $V_{OM}$



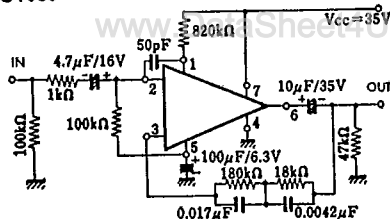
### 3. $V_{NI}$



## Application Circuit

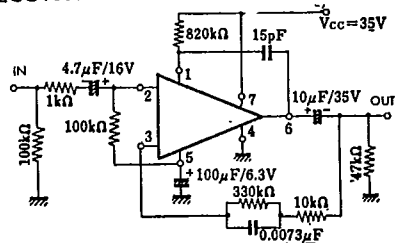
### 4. (RIAA, $G_V = 40\text{ dB}$ , $f = 1\text{ kHz}$ )

Typical Magnetic Phono Pre-Amplifier using ECG1085

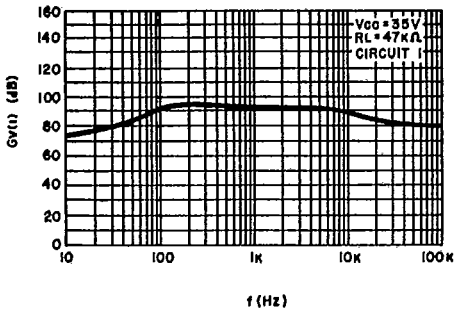


### 5. (NAB 9.5 cm/sec, $G_V = 40\text{ dB}$ , $f = 1\text{ kHz}$ )

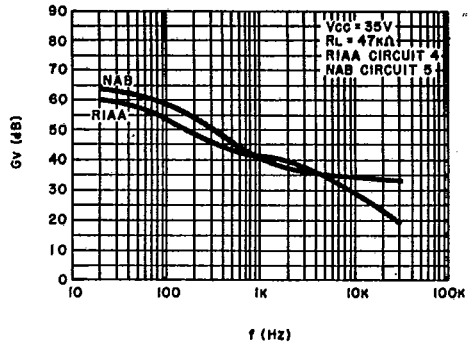
Typical Tape Recorder Pre-Amplifier using ECG1085



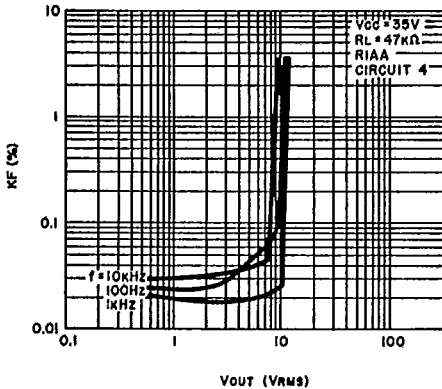
### $G_V(1) - f$



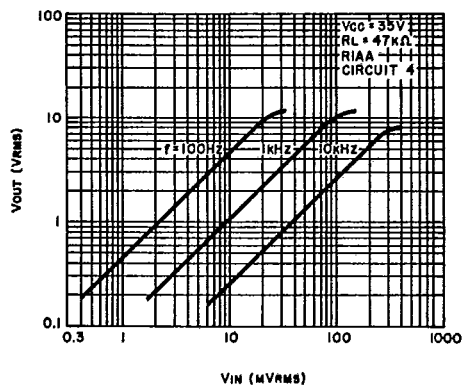
### $G_V - f$



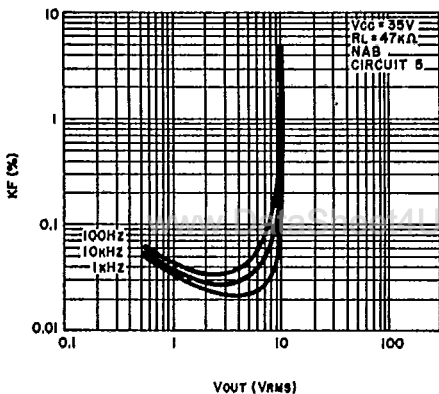
### KF - $V_{OUT}$



### $V_{OUT} - V_{IN}$



### KF - $V_{OUT}$



### $V_{OUT} - V_{IN}$

