

# DBL 1010/2

## DUAL PREAMPLIFIER

### FEATURES

- High voltage gain:  $G_{VO} = 100\text{dB}$  (Typ.) at  $f = 1\text{kHz}$
- Excellent channel separation and high ripple rejection:  $CH_{SEP.} = 70\text{dB}$  (Typ.)  
 $R.R. = 50\text{dB}$  (Typ.)
- Low noise:  $V_{NI} = 1.0\mu\text{Vrms}$  (Typ.)  
at  $R_g = 2.2\text{k}\Omega$ ,  $BW = 15\text{Hz} \sim 30\text{kHz}$
- Muting circuit built-in:  $2V \geq V_o \geq 0.9V$
- Wide operating supply voltage range:  $V_{CC} = 7 \sim 18V$ .

### APPLICATIONS

- Car or home stereo use.

\* DBL 1010 is 8 SIP, Pin9(function : Muting) cut.

### MAXIMUM RATINGS (Ta=25°C)

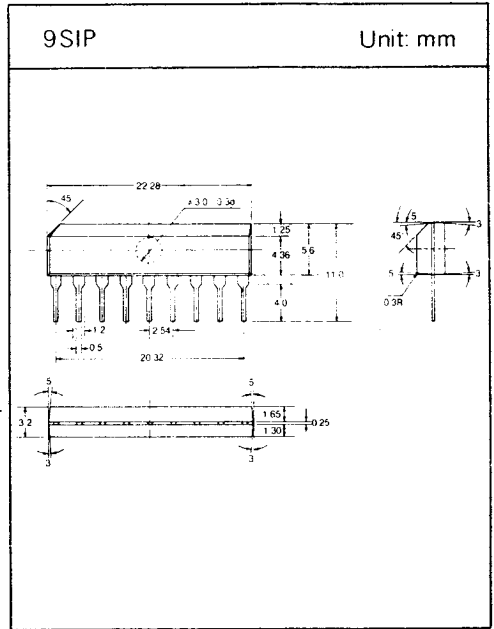
Characteristic	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	18	V
Power Dissipation(*)	$P_D$	700	mW
Operating Temperature	$T_{opr}$	-25 ~ +75	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	°C

\* Derated above  $T_a = 25^\circ\text{C}$  in the proportion of  $5.6\text{mW}/^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS

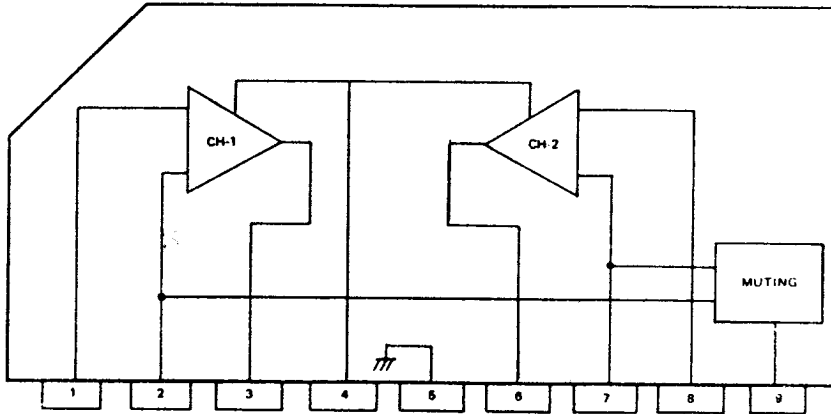
(Unless otherwise specified,  $V_{CC} = 10V$ ,  $f = 1\text{kHz}$ ,  $R_g = 600\Omega$ ,  $R_L = 10\text{k}\Omega$ ,  $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Quiescent Current	$I_{CCO}$	1	—	—	5.5	8.5	mA
Open Loop Voltage Gain	$G_{VO}$	1	$C_f = 100\mu\text{F}$ , $R_f = 0$	—	100	—	dB
Maximum Output Voltage	$V_{OM}$	2	THD = 0.5%, NAB EQ	2	2.8	—	Vrms
Equivalent Input Noise Voltage	$V_{NI}$	2	$R_g = 2.2\text{k}\Omega$ BPF = 15Hz ~ 30kHz	—	1	2.5	$\mu\text{Vrms}$
Input Resistance	$R_{IN}$	2	$V_o = 1\text{Vrms}$	—	100	—	k $\Omega$
Channel Separation	$CH_{SEP}$	2	$f = 10\text{kHz}$ , $R_g = 2.2\text{k}\Omega$ $V_o = 1\text{Vrms}$	—	70	—	dB
Ripple Rejection	R.R.	2	$f = 100\text{Hz}$ , $V_{IN} = 1\text{Vrms}$ CB = NO connection	—	50	—	dB
Muting Ratio	M.R.	2	$V_o = 1V$ , $OdB = 1\text{Vrms}$	—	80	—	dB



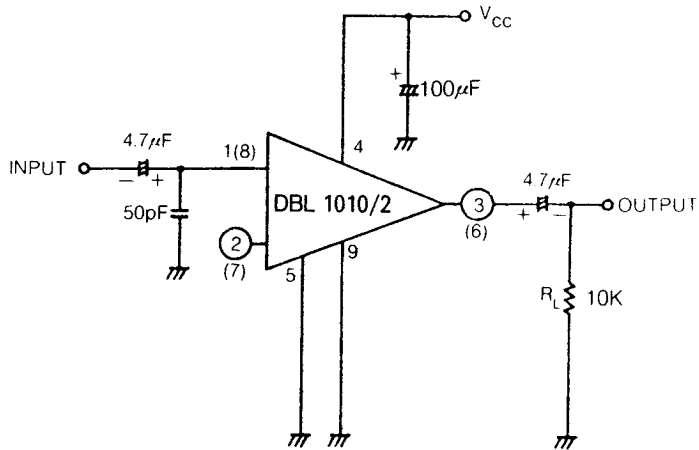
# DBL 1010/2

## □ BLOCK DIAGRAM

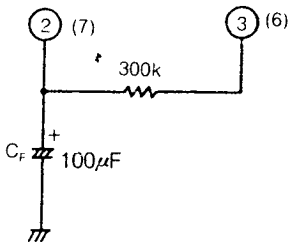


1. Input (+)
2. Input (-)
3. Output
4. Power Supply
5. Ground
6. Output
7. Input (-)
8. Input (+)
9. Muting

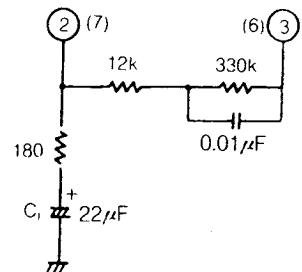
## □ TEST CIRCUIT



1.  $G_{VO}$ ,  $I_{CC}$



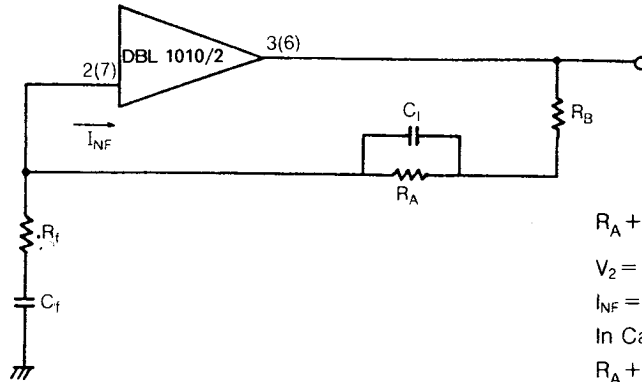
2.  $V_{OM}$ ,  $V_{NI}$ ,  $R_{NI}$ ,  $R_R$



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## APPLICATION

### 1. Decision of Feedback Resistance



$$R_A + R_B = \frac{V_3(\frac{1}{2}V_{CC}) - V_2}{I_{NF}}$$

$$V_2 = 1.4V$$

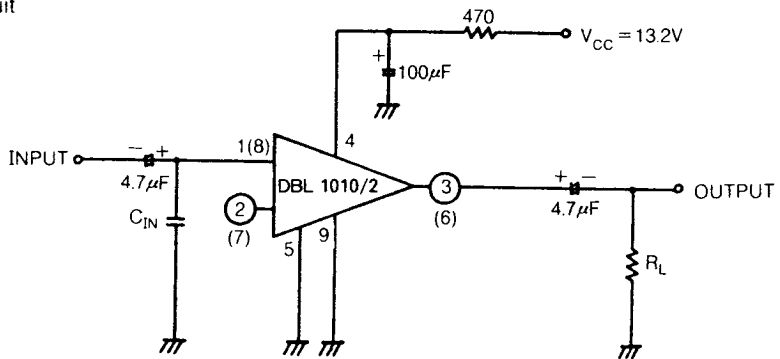
$$I_{NF} = 10\mu A$$

In Case of  $V_{CC} = 10V$

$$R_A + R_B = 360(k\Omega)$$

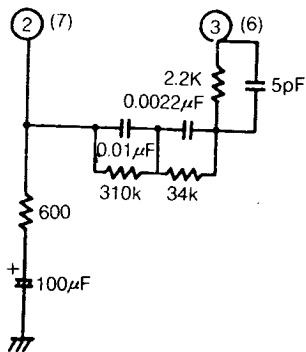
### 2. EQ Amplifier

#### ○ Main Circuit

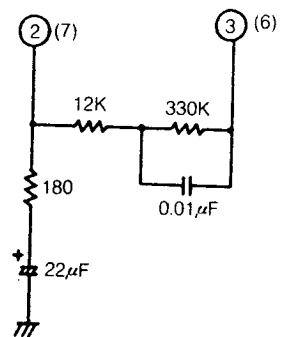


#### ○ Feedback Circuits

##### 1) RIAA EQ

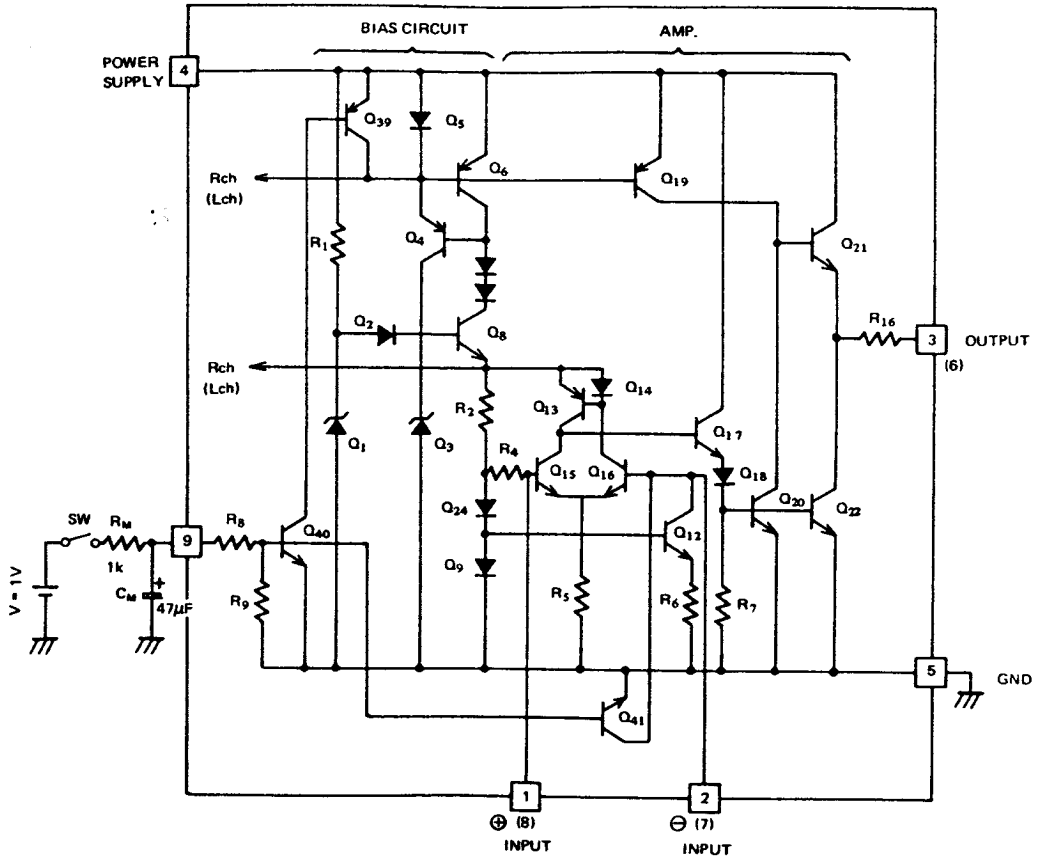


##### 2) NAB EQ



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## 3. MUTING CIRCUIT APPLICATION



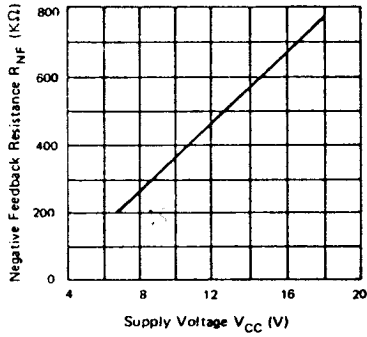
○ The Q40 is turned ON when the voltage above 0.9V feed into PIN 9, Q41 and Q39 'turned ON' consequently and the muting operating obtained.

## 4. NOTE

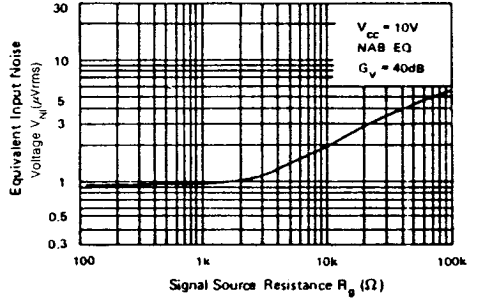
- Care should be taken not to decrease a closed loop gain less 20dB cause parasitic oscillation.
- The maximum allowable input voltage is 300 mVrms not to increase the input voltage above this value for stable operation.

## □ TYPICAL PERFORMANCE CHARACTERISTICS

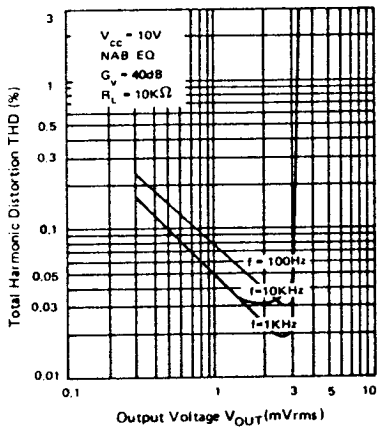
$V_{CC} - R_{NF}$



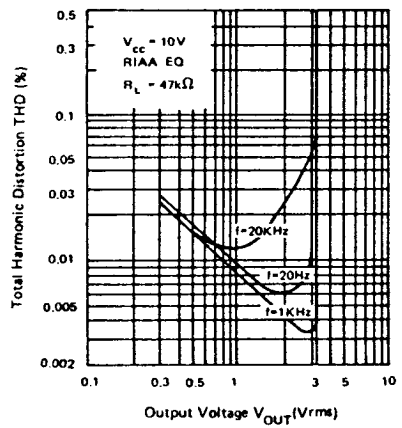
$R_g - V_{NI}$



$V_{OUT} - THD$



$V_{OUT} - THD$



$V_{IN} - V_{OUT}$

