

# DBL 1045

## DUAL PREAMPLIFIER FOR AUTO REVERSE

The DBL1045 contains forward/reverse control switches and metal/normal tape equalizer control switches.

### FEATURES

- High open loop voltage gain :  
 $G_{VO} = 98\text{dB(Typ.)}$  at  $V_{CC} = 9\text{V}$ ,  $f = 1\text{KHz}$
- No input coupling capacitor
- Low distortion :  
 $\text{THD} = 0.035\%(\text{Typ.})$   
 at  $G_V = 40\text{dB}$ ,  $V_{OUT} = 0.5\text{Vrms}$
- Low equivalent input noise voltage :  
 $V_{NI} = 0.9\text{Vrms(Typ.)}$   
 at  $R_g = 620\ \Omega$ ,  $\text{BW} = 20\text{Hz} \sim 20\text{KHz}$ , NAB EQ

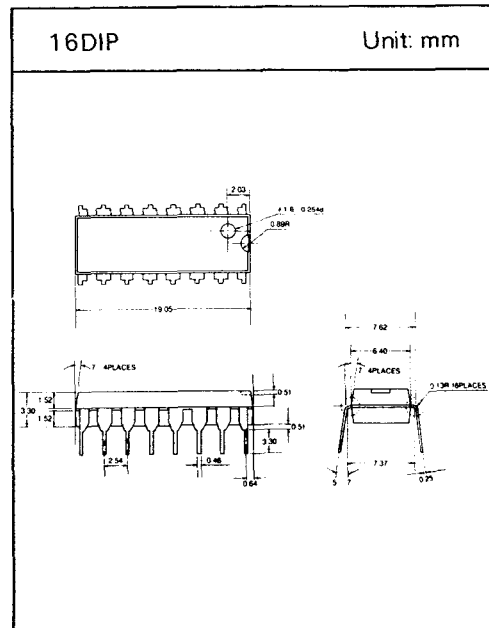
### APPLICATIONS

- Radio cassette, Car stereo

### MAXIMUM RATINGS (Ta=25°C)

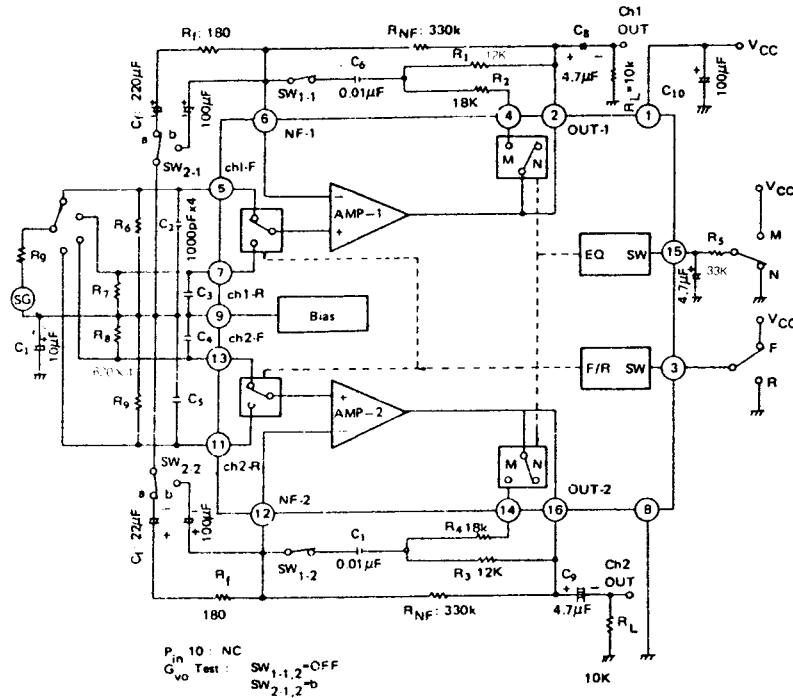
Characteristic	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	16	V
Power Dissipation*	$P_D$	750	mW
Operating Temperature	$T_{opr}$	-30 ~ +75	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	°C

\* Power dissipation is derated above  $T_a = 25^\circ\text{C}$  in the proportion of  $6\text{mW}/^\circ\text{C}$



# DBL 1045

## □ BLOCK DIAGRAM AND TEST CIRCUIT



## □ ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $V_{CC} = 9V$ ,  $f = 1KHz$ ,  $R_g = 600\Omega$ ,  $T_a = 25^\circ C$ , Normal EQ)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Quiescent current	$I_{CC01}$	Normal EQ	—	5	—	mA
	$I_{CC02}$	Metal EQ	—	6	9	mA
Open Loop Voltage Gain	$G_{VO}$	$C_f = 100\mu F$ , $R_f = 0$	—	98	—	dB
Maximum Output Voltage	$V_{OM}$	THD = 0.5%	1.5	2	—	$V_{rms}$
Total Harmonic Distortion	THD	$V_{OUT} = 0.5V_{rms}$	—	0.035	0.12	%
Equivalent Input Noise Voltage	$V_{NI}$	$R_g = 620\Omega$ , NAB BW: 20Hz~20KHz	—	0.9	1.7	$\mu V_{rms}$
Input Resistance	$R_{IN}$	—	—	500	—	K $\Omega$
Ripple Rejection	R.R.	$f_r = 100Hz$ , $V_r = 1V_{rms}$	—	55	—	dB
Cross Talk	C.T.	$V_{OUT} = 0dBm$	50	60	—	dB
Forward/Reverse Cross Talk	C.T. (F/R)	$V_{OUT} = 0dBm$	60	70	—	dB

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## TYPICAL DC VOLTAGE OF EACH TERMINAL ( $V_{CC} = 9V$ , $T_a = 25^\circ C$ , Dual Mode)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage(V)	$V_{CC}$	3.0	0.7	2.9	2.9	2.9	2.9	GND	2.9	NC	2.9	2.9	2.9	2.9	3.5	2.9

## APPLICATION INFORMATION

### 1. Forward/Reverse Selection Switch

The forward and the reverse selection is controlled by the change of the pin 3 voltage.

Reverse : 0 ~ 0.5V

Forward : 1.0V ~  $V_{CC}$

$I_3 = 12\mu A$ (MAX.)

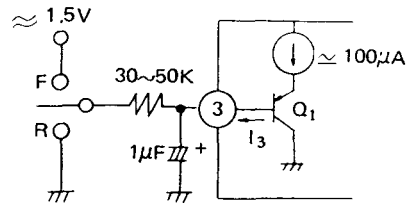


Fig. 1

### 2. Metal/Normal Selection Switch

The metal and the normal selection is controlled by the change of the pin 15 voltage.

Metal : 3.2V ~  $V_{CC}$

Normal : 0 ~ 2.4V

The emitter Voltage of  $Q_2$  is set by  $6V_{BE}$  (= 3.9V)

The voltage of pin 15 above 3.2V make the  $Q_2$  nonconducting condition.

And then the metal function can be operated.

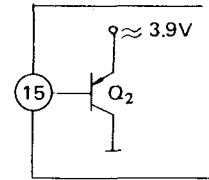
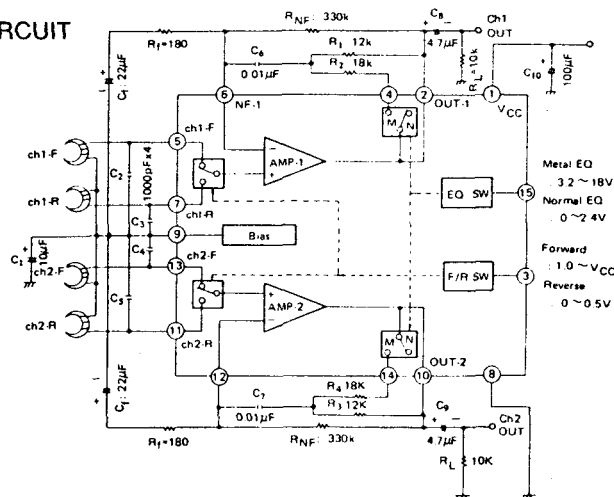


Fig. 2.

### 3. $C_2/C_3/C_4/C_5$

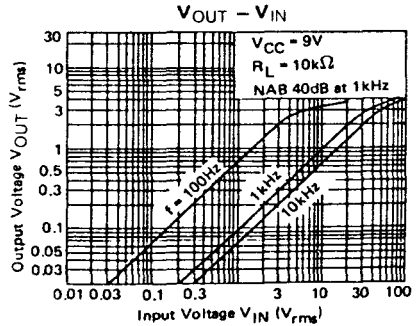
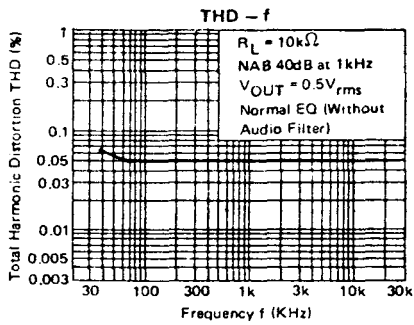
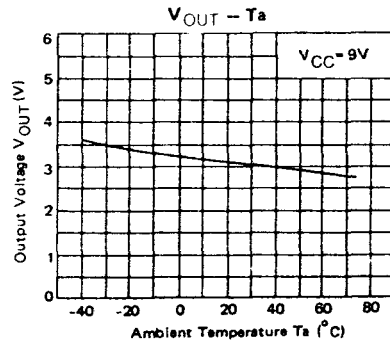
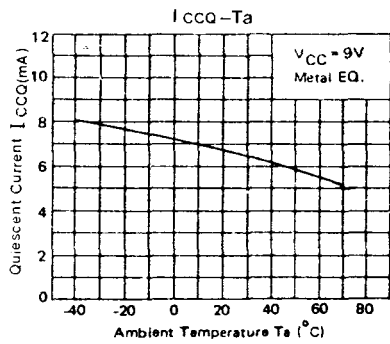
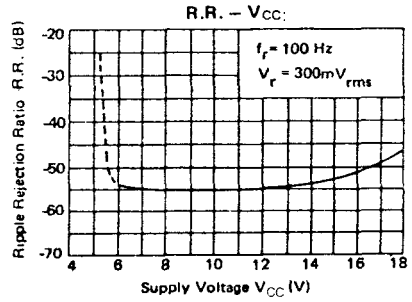
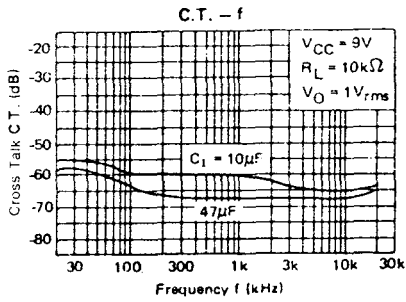
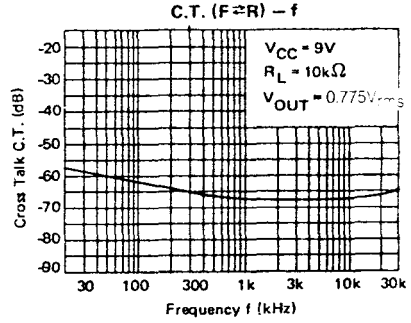
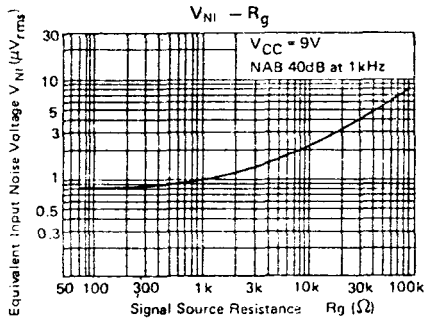
Capacitor  $C_2 \sim C_5$  can prevent an instability caused by the pattern layout or interference of external high frequency signal.

## APPLICATION CIRCUIT



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## TYPICAL PERFORMANCE CHARACTERISTICS



# DBL 1045

□ TYPICAL PERFORMANCE CHARACTERISTICS (continued)

