

# TA7784P LINEAR INTEGRATED CIRCUIT

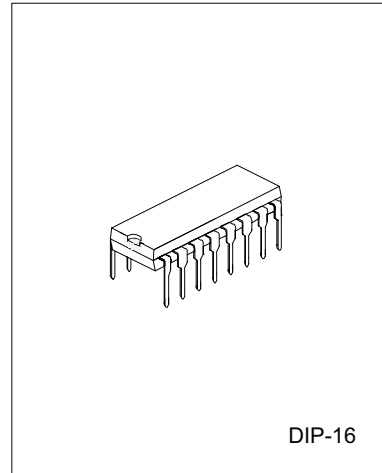
## DUAL PRE-AMPLIFIER FOR AUTO-REVERSE

### DESCRIPTION

The Contek TA7784P is a dual pre-amplifier for auto-reverse type and W-cassette type tape player. This IC contains dual pre-amplifier, forward/ reverse control switches and metal/ normal tape equalizer control switches.

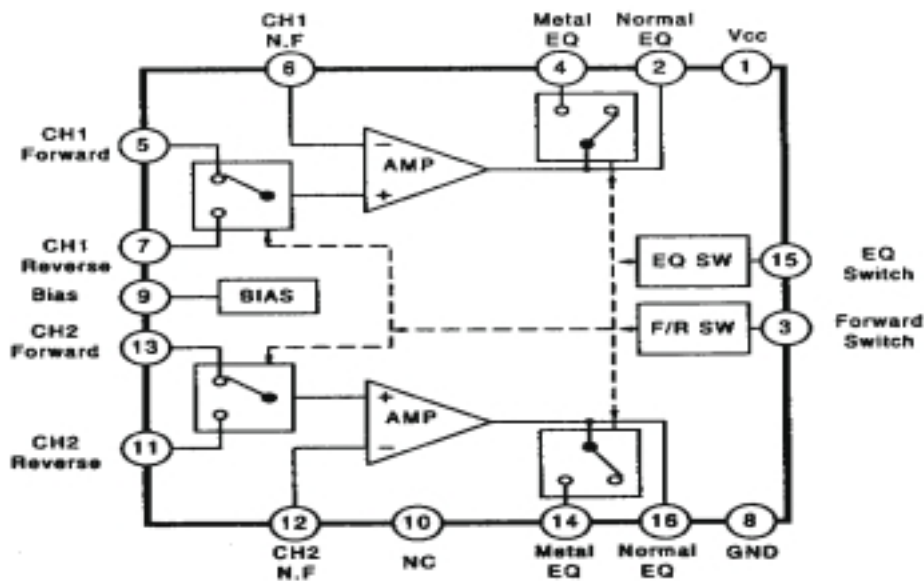
### FEATURES

- \*High voltage gain:  $G_{VO}=95\text{dB}(\text{typ})$  at  $V_{CC}=6\text{V}$   $f=1\text{kHz}$
- \*Wide operating supply voltage ( $V_{CC}=3.5\text{V}\sim 15\text{V}$ )
- \*No input coupling capacitor
- \*Low noise ( $V_{NI}=1\mu\text{Vrms}(\text{typ})$  at  $R_g=600\Omega$ ,  $BW=20\text{Hz}\sim 20\text{kHz}$ , NAB EQ)



DIP-16

### BLOCK DIAGRAM



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## ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

| PARAMETER             | SYMBOL | VALUE   | UNIT |
|-----------------------|--------|---------|------|
| Supply Voltage        | Vcc    | 16      | V    |
| Power Dissipation     | PD     | 750     | mW   |
| Operating Temperature | Topr   | -25~75  | °C   |
| Storage Temperature   | Tstg   | -55~150 | °C   |

Note: de-rated above Ta=25 °C in the proportion of 6mW/ °C.

## ELECTRICAL CHARACTERISTICS (Ta=25 °C, Vcc=6V, Rg=600Ω, f=1kHz, unless otherwise specified)

| PARAMETER                   | SYMBOL  | TEST CIRCUIT | TEST CONDITIONS                           | MIN | TYP   | MAX  | UNIT  |
|-----------------------------|---------|--------------|-------------------------------------------|-----|-------|------|-------|
| Quiescent Current           | ICCQ1   | 1            | VIN=0, Normal EQ                          |     | 5.5   |      | mA    |
|                             | ICCQ1   | 1            | VIN=0, Metal EQ                           |     | 7     | 11   |       |
| Open Loop Voltage Gain      | GVo     | 1            | Cf=100μF, Rf=0                            |     | 95    |      | dB    |
| Maximum Output Voltage      | VOM     | 1            | THD=0.5%                                  | 1.1 | 1.5   |      | Vrms  |
| Total Harmonic Distortion   | THD     | 1            | Vout=0.5Vrms                              |     | 0.035 | 0.12 | %     |
| Equivalent Input Noise      | VNI     | 1            | Rg=620Ω, NAB<br>BW:20Hz~20kHz<br>Metal EQ |     | 1     | 1.7  | μVrms |
| Ripple Rejection            | RR      | 1            | f=100Hz, Vin=1Vrms                        |     | 55    |      | dB    |
| Cross Talk                  | CT      | 1            | Vout=0dBm                                 | 50  | 60    |      | dB    |
| Forward/ Reverse Cross Talk | CT(F/R) |              | Vout=0dBm                                 | 60  | 70    |      | dB    |



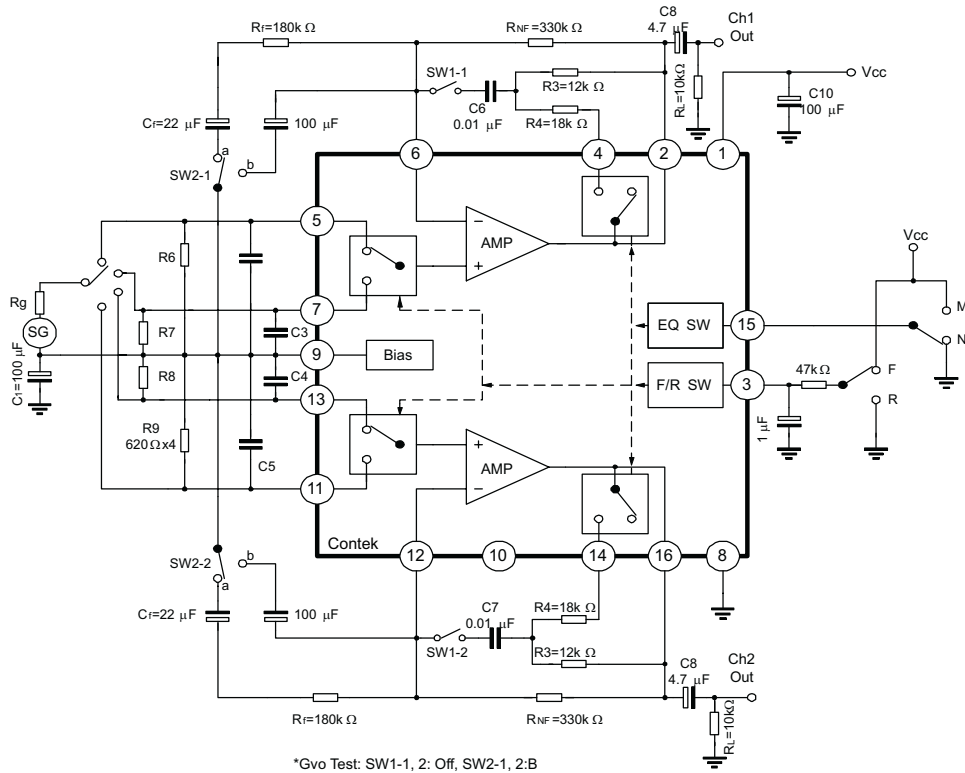
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## TEST CIRCUIT (Pin Configuration and DC Voltage)



\*Gvo Test: SW1-1, 2: Off, SW2-1, 2:B

Pin Configuration and DC Voltage ( Vcc=6V, Ta=25 C, Unless otherwise specified)

### DC VOLTAGE

| PIN NO.   | 1   | 2   | 3       | 4   | 5   | 6   | 7   | 8   | 9   | 10 | 11  | 12  | 13  | 14  | 15      | 16  |
|-----------|-----|-----|---------|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|---------|-----|
| VALUE (V) | Vcc | 2.3 | Vcc/GND | 2.2 | 2.2 | 2.2 | 2.2 | GND | 2.2 | NC | 2.2 | 2.2 | 2.2 | 2.2 | Vcc/GND | 2.2 |



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APPLICATION INFORMATION

1. Forward/Reverse select switch

- 1 Threshold voltage: Pin 3 is coupled to the base of Q1( PNP-Tr) as Fig. 1 The threshold voltage is 0~0.3V at reverse stage and is 1.1~Vcc at the Forward stage.
- 2 The recommended Forward/ Reverse select circuit is shown in Fig. 2
- 3 I3(Fig. 1)=12μA, Ta=25 C

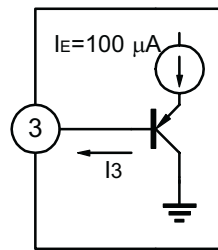


Fig 1

2. Equalizer control switch

Pin 15 is coupled to the base of Q2 ( PNP Tr) as shown Fig. 3. The emitter potential of Q2 is 2.6V. The threshold voltage is 21~Vcc at Metal EQ stage and is 0~1.2V at the Normal EQ stage.

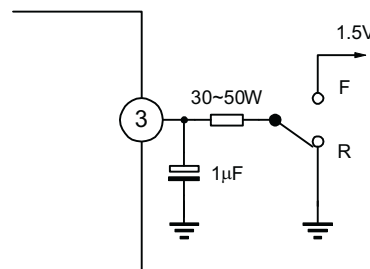


Fig 2

3. C2/C3/C4/C5

Capacitor C2~C5 may be required for preventing instability caused by the pattern layout or interference of external high frequency signal.

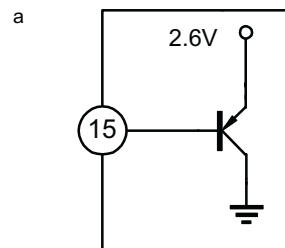


Fig 3