

UTC TA7784P LINEAR INTEGRATED CIRCUIT

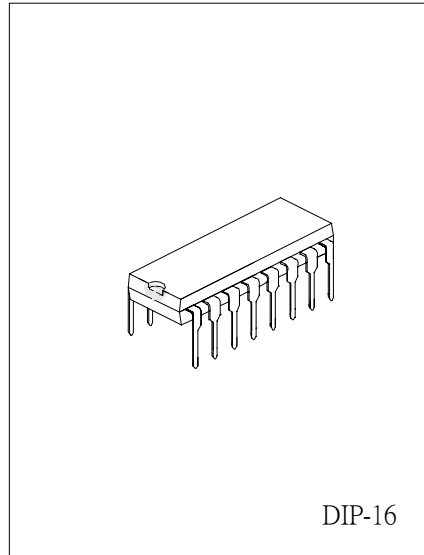
DUAL PRE-AMPLIFIER FOR AUTO-REVERSE

DESCRIPTION

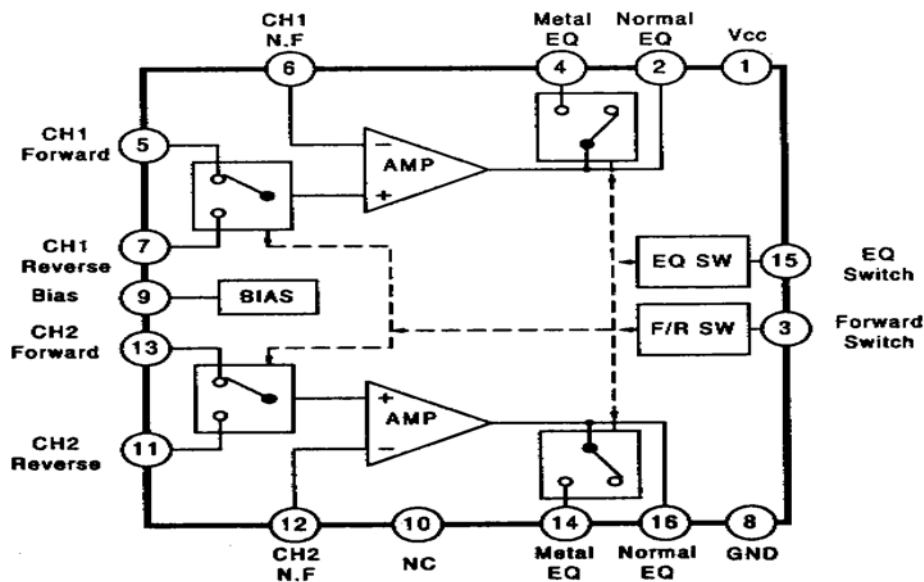
The UTC TA7784P is a dual pre-amplifier for auto-reverse type and W-cassette type tape player. This IC contains dual pre-amplifier, forward/ reverse control switches and metal/ normal tape equalizer control switches.

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)



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

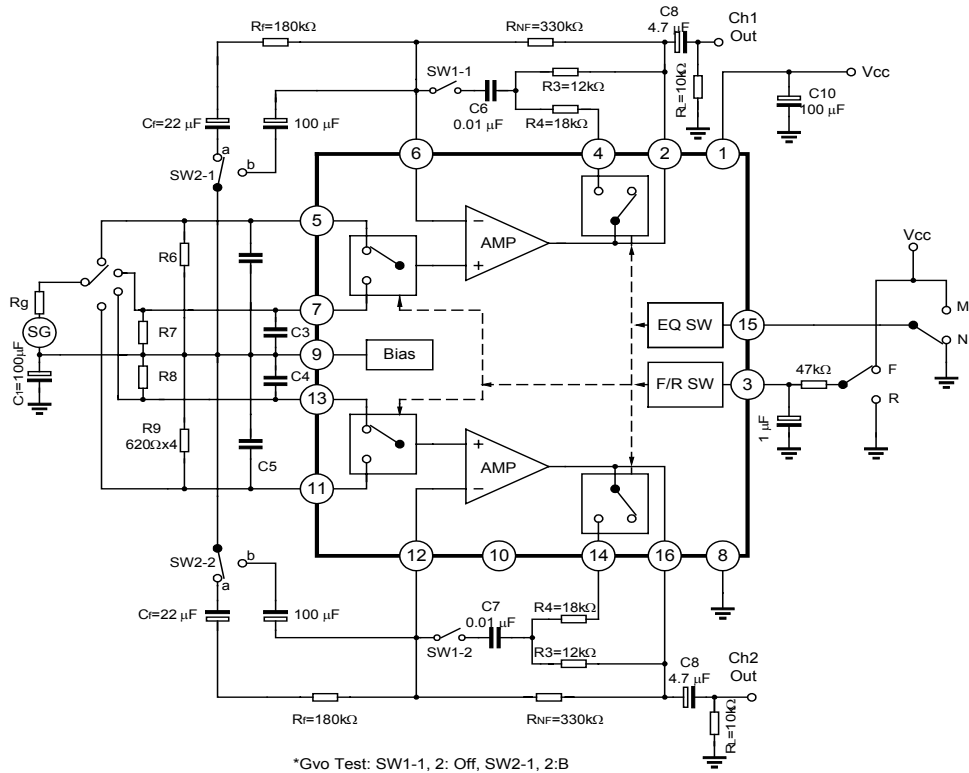
Note: de-rated above Ta=25°C in the proportion of 6mW/°C.

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 BW:20Hz~20kHz 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~V_{cc} at the Forward stage.
- 2) The recommended Forward/ Reverse select circuit is shown in Fig. 2
- 3) I₃(Fig. 1)=12μA, T_a=25°C.

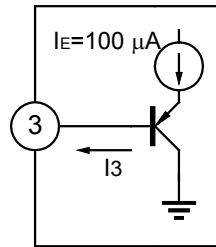


Fig 1

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~V_{cc} at Metal EQ stage and is 0~1.2V at the Normal EQ stage.

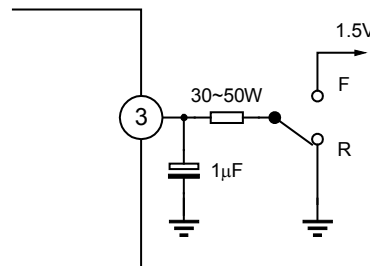


Fig 2

3. C2/C3/C4/C5

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

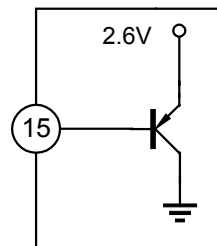


Fig 3

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