

# UTC TA7738P LINEAR INTEGRATED CIRCUIT

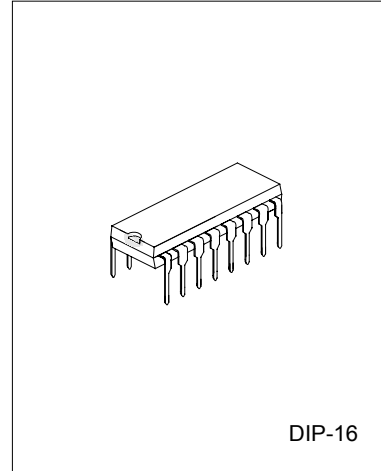
## AMPLIFIER SYSTEM FOR CASSETTE TAPE RECORDER

### DESCRIPTION

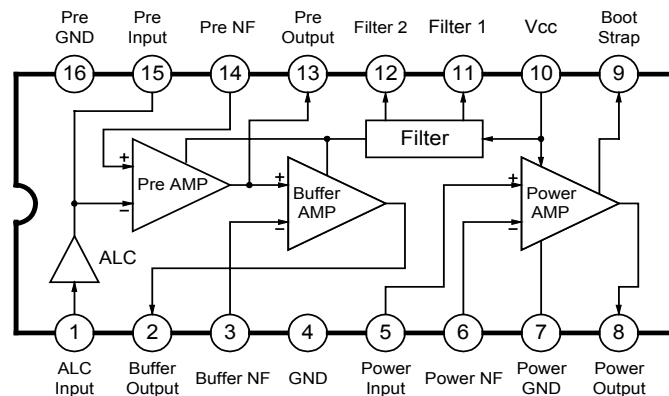
The UTC TA7738P is an amplifier system, designed for a stereo set and a radio cassette tape recorder.

### FEATURES

- \*Recorder play balk for pre-amplifier
- \*Buffer amplifier( recorder amplifier)
- \*Power amplifier
- \*Wide operating voltage range( 3.5V to 9V)



### BLOCK DIAGRAM



### ABSOLUTE MAXIMUM RATING(Ta=25°C)

| PARAMETER             | SYMBOL    | VALUE   | UNIT |
|-----------------------|-----------|---------|------|
| Supply Voltage        | VCC       | 14      | V    |
| Output Current        | I O(peak) | 1.5     | A    |
| Power Dissipation*    | PD        | 1200    | mW   |
| Operating Temperature | TOPR      | -25~75  | °C   |
| Storage Temperature   | TSTG      | -55~150 | °C   |

\*Note: De-rated above Ta=25°C in proportion of 9.6mW/°C

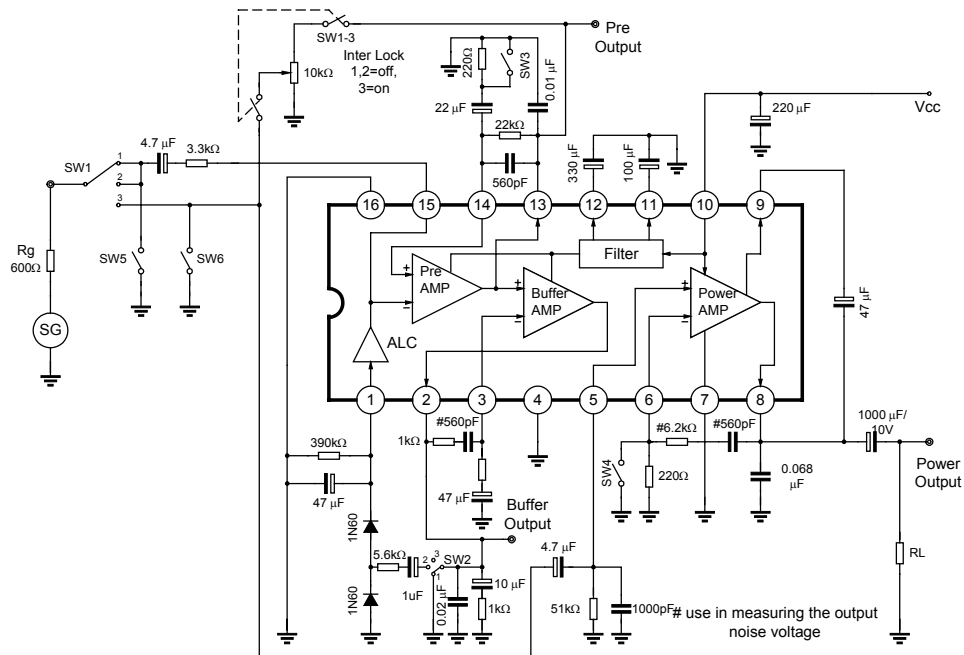
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ELECTRONIC CHARACTERISTICS (Ta=25°C, Vcc=6V, f=1kHz, unless otherwise specified)

| PARAMETER                        | SYMBOL | TEST CONDITIONS                     | MIN | TYP  | MAX | UNIT   |
|----------------------------------|--------|-------------------------------------|-----|------|-----|--------|
| Total                            |        |                                     |     |      |     |        |
| Quiescent Current                | IccQ1  | VCC=3.5V                            | 7.5 |      |     | mA     |
|                                  | IccQ2  | VCC=6V                              | 11  |      | 35  |        |
| Pre-amplifier                    |        |                                     |     |      |     |        |
| Open Loop Voltage Gain           | GvO1   |                                     | 55  | 70   |     | dB     |
| Closed Loop Voltage Gain         | Gv1    |                                     |     | 40   |     | dB     |
| Maximum Output Voltage           | VOUT1  | THD<1%                              |     | 0.7  |     | Vrms   |
| Input Impedance                  | RIN1   | VOUT=0.5Vrms                        |     | 30   |     | kΩ     |
| Equivalent Input Noise Voltage   | VNI    | Rg=0                                |     | 1.4  | 2.5 | μΩVrms |
| Pre-amplifier + Buffer amplifier |        |                                     |     |      |     |        |
| Closed Loop Voltage Gain         | Gv2    | Pre-AMP GV=40dB<br>Buff-AMP GV=20dB |     | 60   |     | dB     |
| Maximum Output Voltage           | VOUT2  | THD=3%                              | 1.5 | 1.7  |     | Vrms   |
| Equivalent Input Noise Voltage   | VNO2   | Rg=0, GV2=60dB                      |     | 1.2  | 2.5 | mVrms  |
| ALC Effect                       | ALC1   | VIN= -60dBm~ -20dBm                 |     | 2    |     | dB     |
| ALC Range                        | ALC2   | THD<1%                              |     | 60   |     | dB     |
| Power amplifier                  |        |                                     |     |      |     |        |
| Open Loop Voltage Gain           | GvO1   |                                     | 60  | 70   |     | dB     |
| Closed Loop Voltage Gain         | Gv1    |                                     |     | 40   |     | dB     |
| Maximum Output Power             | POM    | RL=4Ω, THD=10%                      | 0.8 | 0.96 |     | W      |
|                                  |        | VCC=9V, RLΩ, THD=10%                |     | 2    |     |        |
| Output Noise Voltage             | VNO3   | Rg=0, GV=40dB                       |     | 0.3  | 1   | mVrms  |

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## TEST CIRCUIT

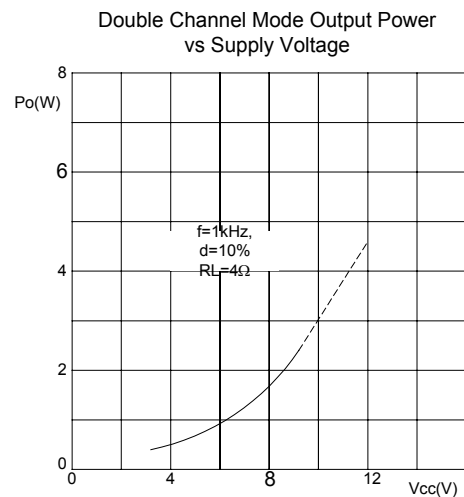
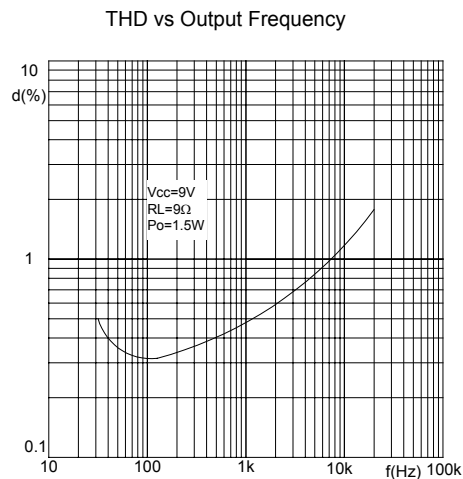
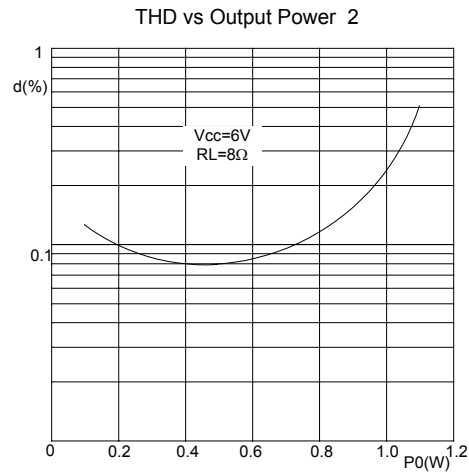
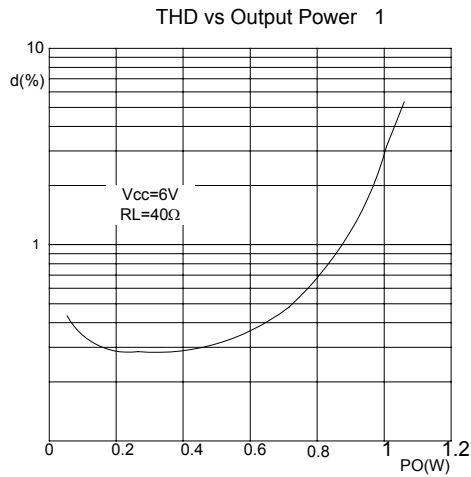


## SWITCH MODE

| TEST ITEM | SW1 | SW2 | SW3 | SW4 | SW5 | SW6 |
|-----------|-----|-----|-----|-----|-----|-----|
| GVO1      | 1   | 1   | ON  | OFF | OFF | OFF |
| GV1       | 1   | 1   | OFF | OFF | OFF | OFF |
| VOUT1     | 1   | 1   | OFF | OFF | OFF | OFF |
| GV2       | 1   | 3   | OFF | OFF | OFF | OFF |
| VOUT2     | 1   | 3   | OFF | OFF | OFF | OFF |
| VNO2      | 1   | 3   | OFF | OFF | ON  | OFF |
| ALC       | 1   | 2   | OFF | OFF | OFF | OFF |
| GVO3      | 2   | 1   | OFF | ON  | OFF | OFF |
| GV3       | 2   | 1   | OFF | OFF | OFF | OFF |
| PO        | 2   | 1   | OFF | OFF | OFF | OFF |
| VNO3      | 2   | 1   | OFF | OFF | OFF | ON  |

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## TYPICAL PERFORMANCE CHARACTERISTICS



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