

UTC TA7738P LINEAR INTEGRATED CIRCUIT

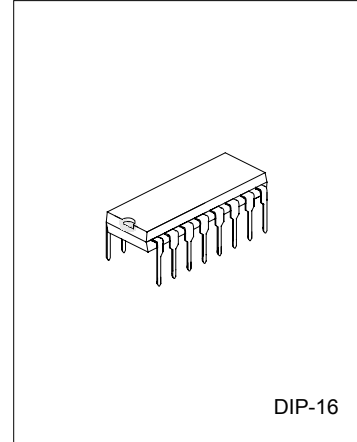
AMPLIFIER SYSTEM FOR CASSETTE TAPE RECORDER

DESCRIPTION

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

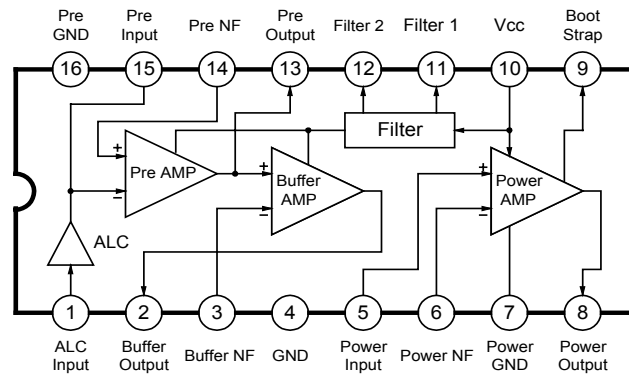
FEATURES

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



DIP-16

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)

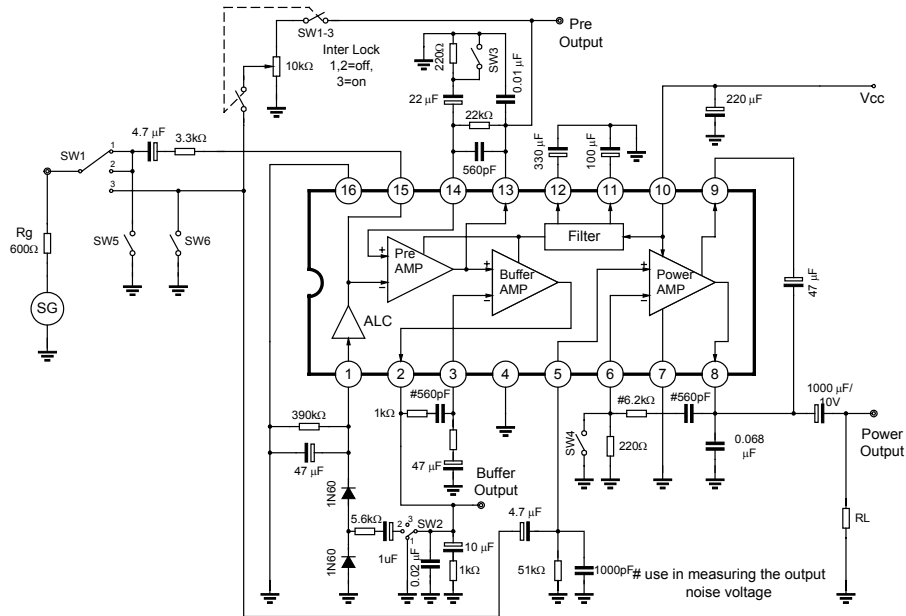
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|----------------------------------|--------|-------------------------------------|-----|------|-----|--------|
| Total | | | | | | |
| Quiescent Current | IccQ1 | VCC=3.5V | 7.5 | | | mA |
| | IccQ2 | VCC=6V | 11 | | 35 | |
| Pre-amplifier | | | | | | |
| Open Loop Voltage Gain | Gv01 | | 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 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 | Gv01 | | 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



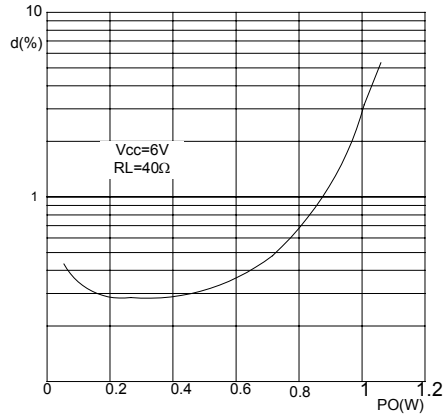
SWITCH MODE

| 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 |

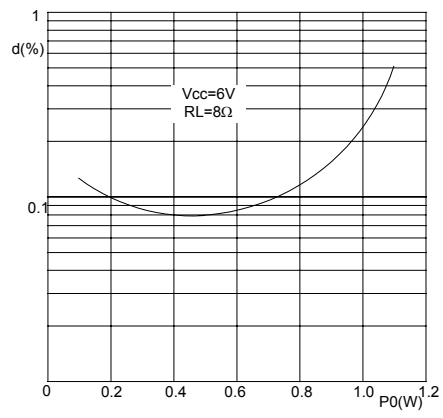
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TYPICAL PERFORMANCE CHARACTERISTICS

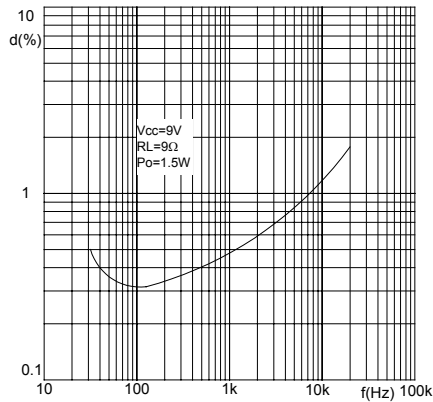
THD vs Output Power 1



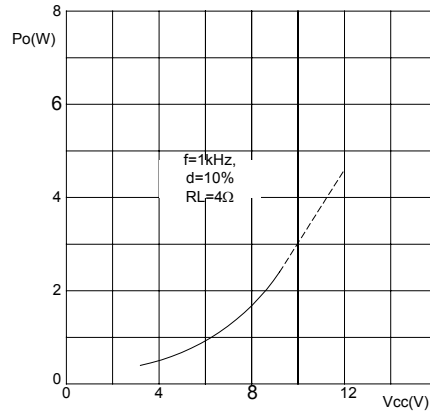
THD vs Output Power 2



THD vs Output Frequency



Double Channel Mode Output Power vs Supply Voltage



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