

# UTC M2100

# LINEAR INTEGRATED CIRCUIT

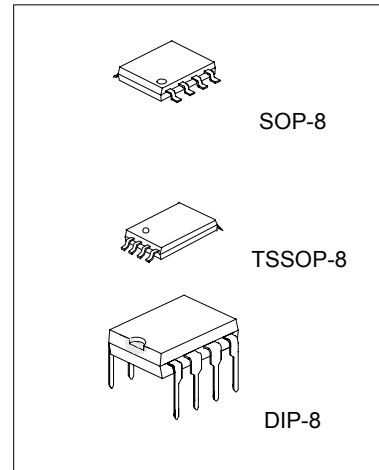
## SINGLE OPERATIONAL AMPLIFIER

### DESCRIPTION

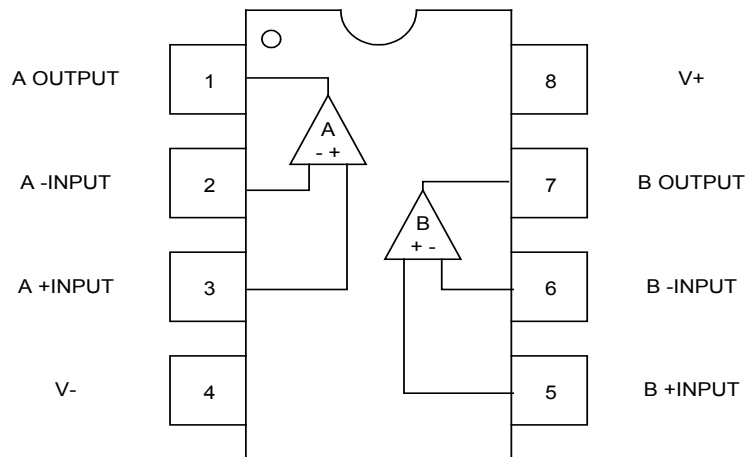
The UTC M2100 is a low supply voltage and low saturation output voltage (+2.0V p-p at supply voltage +2.5V) operational amplifier. It is applicable to handy type CD, radio cassette CD, and portable DAT, that are digital audio apparatus which require the 5V single supply operation and high output voltage.

### FEATURES

- \*Single Supply Operation
- \*Operating Voltage (+1.0V~+3.5V)
- \*Low Saturation Output Voltage
- \*High Slew Rate (4V/  $\mu$ s typ.)
- \*Package Outline
- \*Bipolar Technology

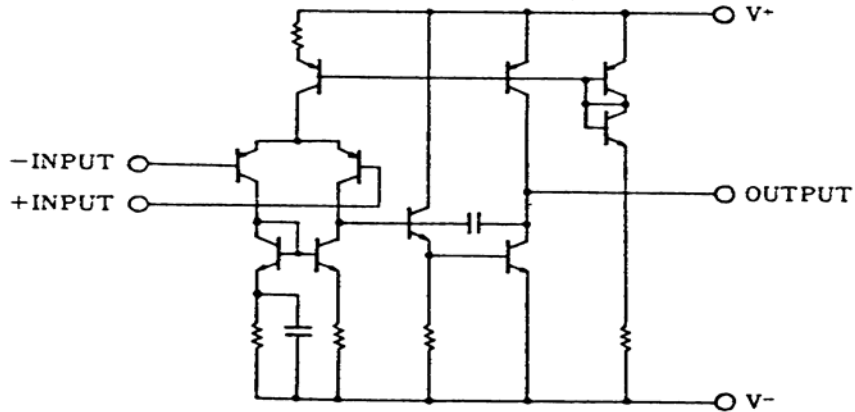


### PIN CONFIGURATION



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## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER                   | SYMBOL           | VALUE                                    | UNIT |
|-----------------------------|------------------|------------------------------------------|------|
| Supply Voltage              | V+/V-            | +3.5                                     | V    |
| Differential Input Voltage  | V <sub>ID</sub>  | +7                                       | V    |
| Power Dissipation           | P <sub>D</sub>   | 500 (DIP8)<br>300 (SOP8)<br>250 (TSSOP8) | mW   |
| Operating Temperature Range | T <sub>opr</sub> | -20~+75                                  | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -40~+125                                 | °C   |

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

(V<sup>+</sup>=5V, Ta=25°C, unless otherwise specified)

| PARAMETER                       | SYMBOL           | TEST CONDITIONS                         | MIN  | TYP. | MAX | UNIT |
|---------------------------------|------------------|-----------------------------------------|------|------|-----|------|
| Input Offset Voltage            | V <sub>IO</sub>  | R <sub>S</sub> ≤10kΩ                    |      | 1    | 6   | mV   |
| Input Bias Current              | I <sub>IB</sub>  |                                         |      | 100  | 300 | nA   |
| Large Signal Voltage Gain       | A <sub>v</sub>   | R <sub>L</sub> ≥10kΩ                    | 60   | 80   |     | dB   |
| Maximum Output Voltage Swing    | V <sub>OM</sub>  | R <sub>L</sub> ≥2.5kΩ                   | +2   | +2.2 |     | V    |
| Input Common Mode Voltage Range | V <sub>ICM</sub> |                                         | +1.5 |      |     | V    |
| Common Mode Rejection Ratio     | CMR              |                                         | 60   | 74   |     | dB   |
| Supply Voltage Rejection Ratio  | SVR              |                                         | 60   | 80   |     | dB   |
| Operating Current               | I <sub>CC</sub>  | V <sub>IN</sub> =0, R <sub>L</sub> =∞   |      | 3.5  | 5   | mA   |
| Slew Rate                       | SR               | A <sub>v</sub> =1, V <sub>IN</sub> =±1V |      | 4    |     | V/μS |
| Gain-Bandwidth product          | GB               | f=10kHz                                 |      | 12   |     | MHz  |

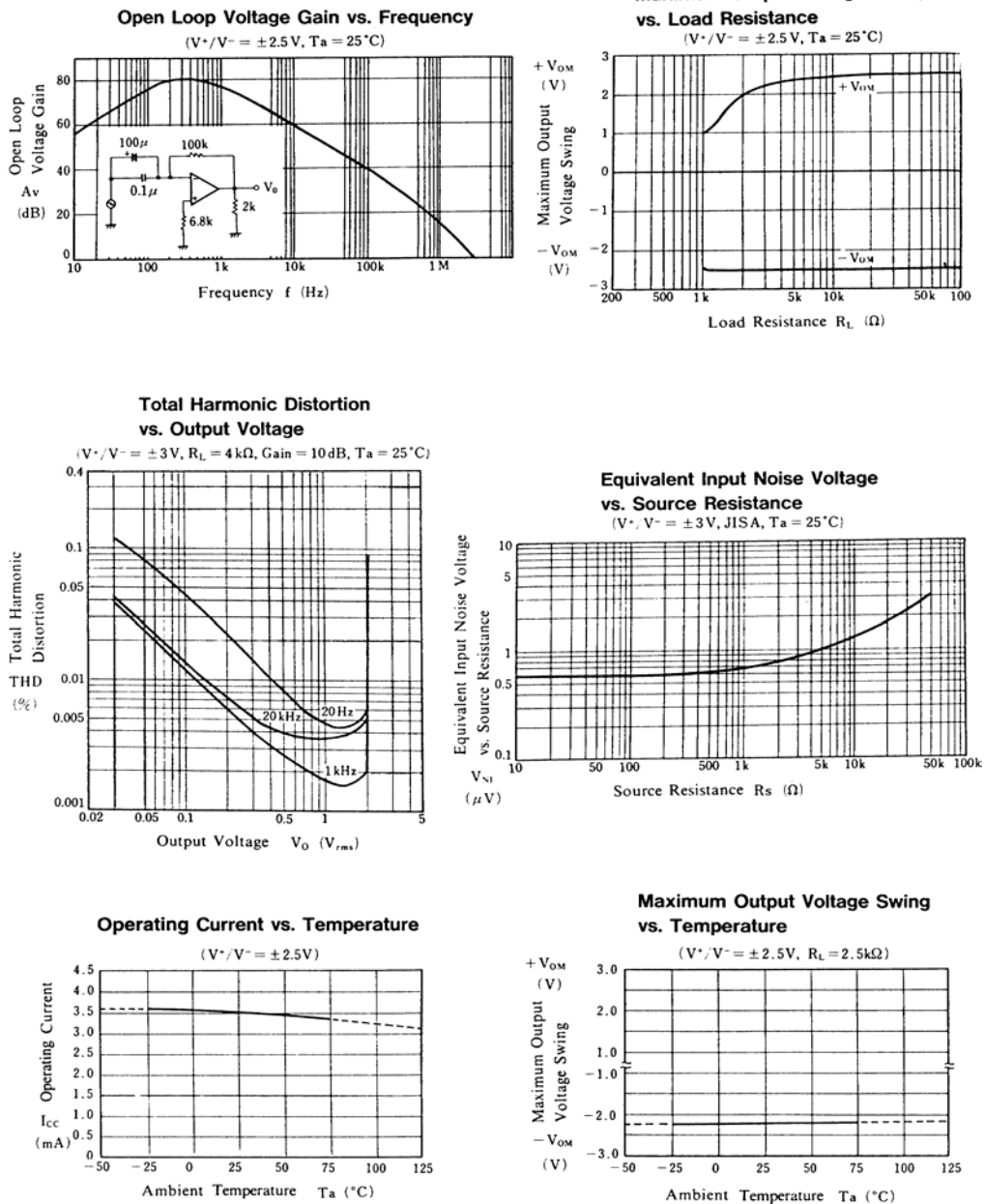
NOTE1: Applied circuit voltage gain is desired to be operated within the range of 3 dB to 30dB.

NOTE2: Special care being required for input common mode voltage range and the oscillation due to the capacitive load when operating on voltage follower.

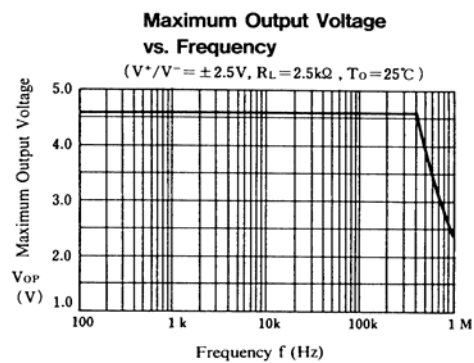
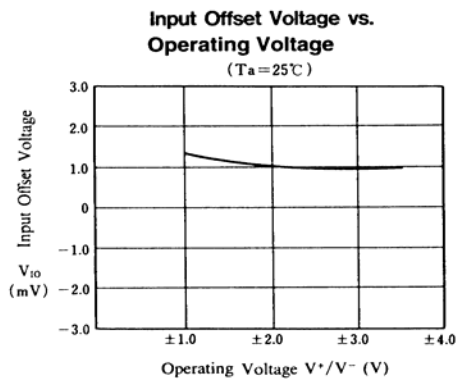
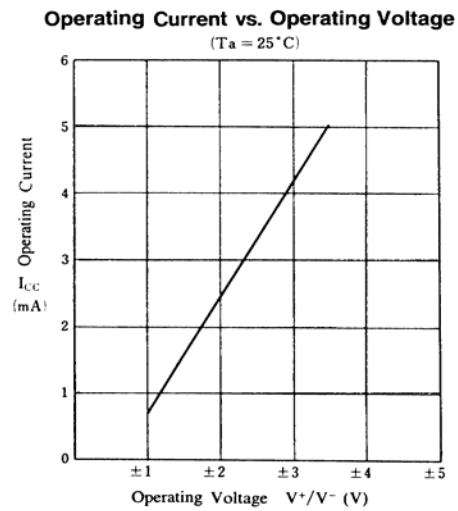
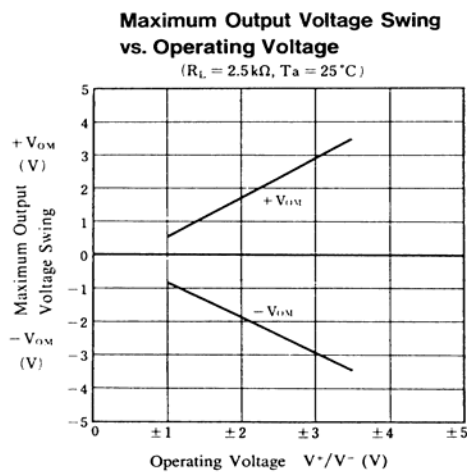
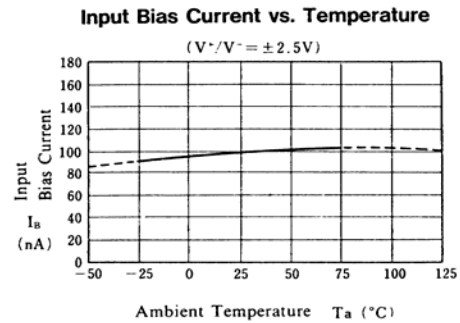
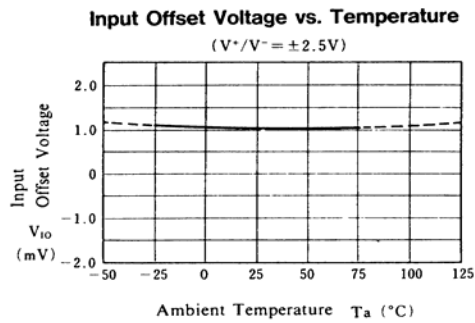
NOTE3: Special care being required for the oscillation, yet having the gain when the supply voltage is applied at more than 5V (single supply voltage 5V)

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## TYPICAL CHARACTERISTICS



# UTCM2100 LINEAR INTEGRATED CIRCUIT



# UTCM2100      LINEAR INTEGRATED CIRCUIT

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