

UTC M4565 LINEAR INTEGRATED CIRCUIT

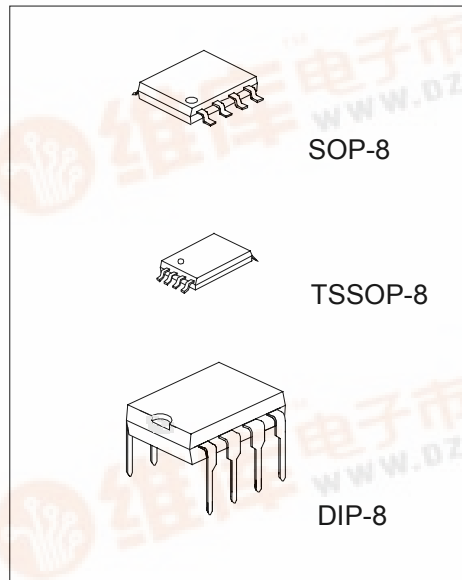
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

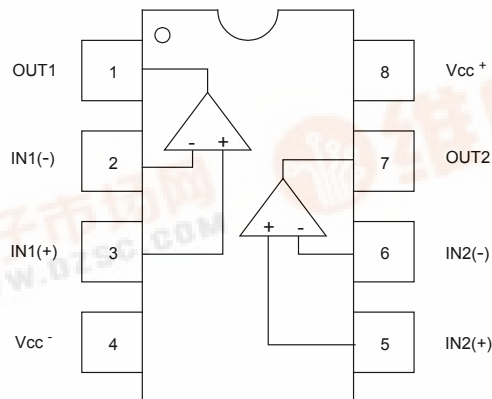
The UTC M4565 integrated circuit is a high-gain, wide-bandwidth, dual low noise operational amplifier capable of driving 20V peak-to-peak into 400 Ω load.

FEATURES

- *Operating Voltage: $\pm 4V \sim \pm 18V$
- *Wide Gain Bandwidth Product: 4MHz (typ.)
- *Slew Rate: 4V/ μ s (typ.)

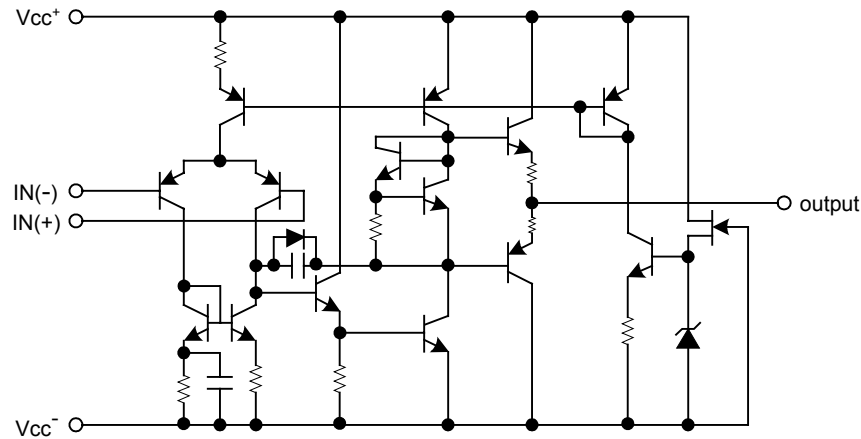


PIN CONFIGURATION



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EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|--------------------------------|----------|------|
| Supply Voltage | V ⁺ /V ⁻ | ±18 | V |
| Differential Input Voltage | V _{ID} | ±30 | V |
| Input Voltage | V _{IC} | ±15 * | V |
| Power Dissipation | P _D | 500 | mW |
| DIP-8 | | 300 | |
| SOP-8 TSSOP-8 | | 250 | |
| Operating Temperature Range | T _{OP} | -20~+75 | °C |
| Storage Temperature Range | T _{STG} | -40~+125 | °C |

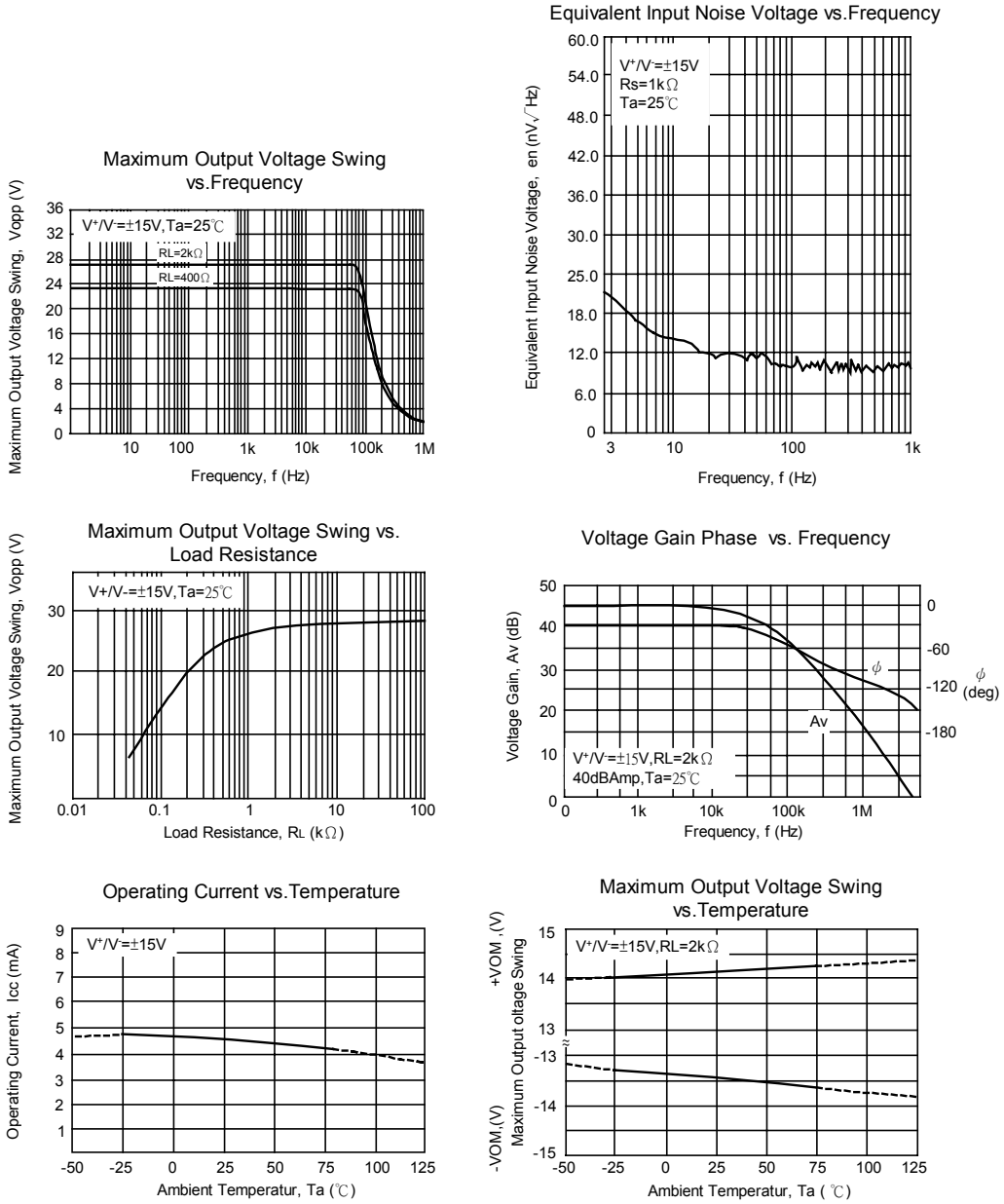
* For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

ELECTRICAL CHARACTERISTICS (Ta=25°C, V⁺/V⁻=±15V)

| PARAMETER | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|---------------------------------|------------------|--|------|-------|-----|-------|
| Input Offset Voltage | V _{IO} | R _S ≤ 10k Ω | | 0.5 | 3.0 | mV |
| Input Offset Current | I _{IO} | | | 2 | 50 | nA |
| Input Bias Current | I _B | | | 50 | 200 | nA |
| Input Resistance | R _{IN} | | 0.3 | 5 | | M Ω |
| Large Signal Voltage Gain | A _V | R _L ≥ 2k Ω, V _O = ±10V | 86 | 100 | | dB |
| Maximum Output Voltage Swing 1 | V _{OM1} | R _L ≥ 2k Ω | ±12 | ±14 | | V |
| Maximum Output Voltage Swing 2 | V _{OM2} | I _O = 25mA | ±10 | ±11.5 | | V |
| Input Common Mode Voltage Range | V _{ICM} | | ±12 | ±14 | | V |
| Common Mode Rejection Ratio | CMR | R _S ≤ 10k Ω | 70 | 90 | | dB |
| Supply Voltage Rejection Ratio | SVR | R _S ≤ 10k Ω | 76.5 | 90 | | dB |
| Operating Current | I _{CC} | | | 4.5 | 7 | mA |
| Slew Rate | SR | | | 4 | | V/μs |
| Gain Bandwidth Product | GB | | | 10 | | MHz |
| Equivalent Input Noise Voltage | V _{NI} | RIAA, R _S = 2.2k Ω, 30kHz LPF | | 1.2 | | μVrms |

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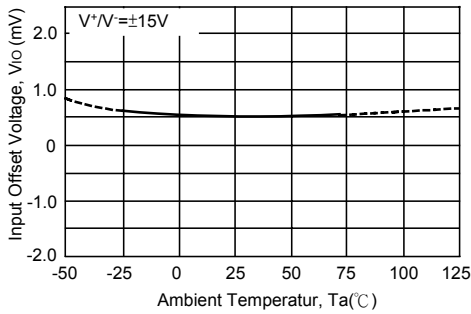
TYPICAL CHARACTERISTICS



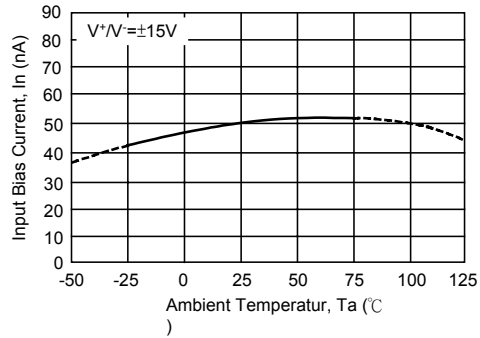
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TYPICAL CHARACTERISTICS

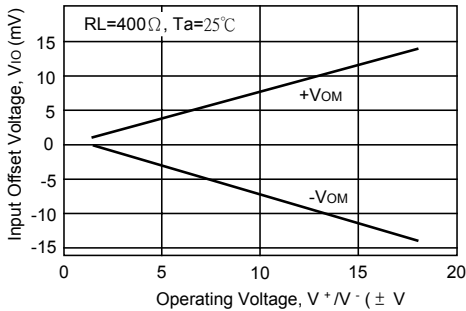
Input Offset Voltage vs. Temperature



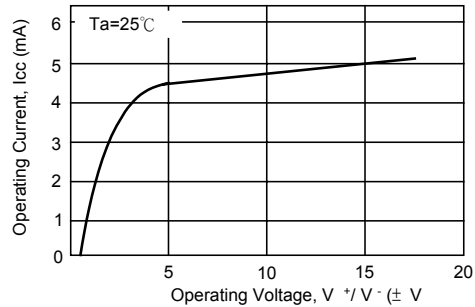
Input Bias Current vs. Temperature



Maximum Output Voltage Swing vs. Operating Voltage



Operating Current vs. Operating Voltage



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