

IL4558

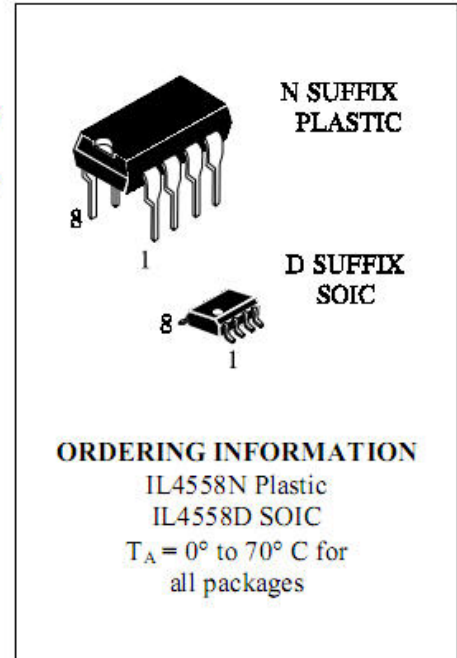
Dual Operational Amplifiers

The IL4558 is dual general purpose operational amplifiers.

The high common-mode input voltage range and the absence of latch-up make these amplifiers ideal for voltage follower application.

The devices are short circuit protected and the internal frequency compensation ensures stability without external components.

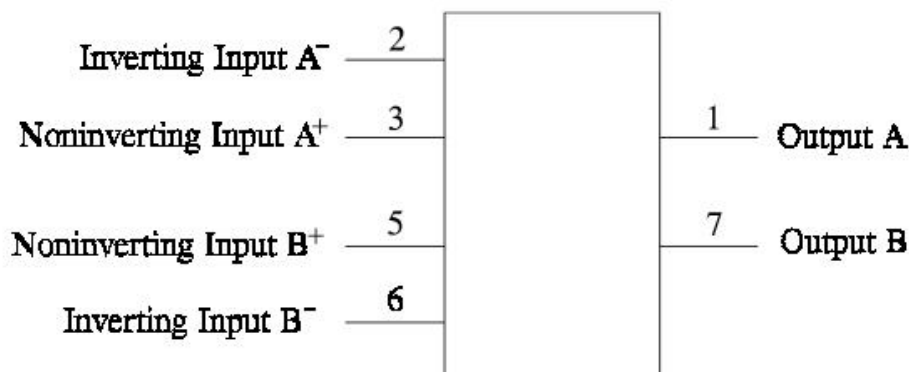
- Short-Circuit Protection
- Wide common-mode and differential ranges
- No frequency compensation required
- Low power consumption
- No latch-up
- 3 MHz unity gain bandwidth guaranteed
- Gain and phase math between amplifiers



PIN ASSIGNMENT



LOGIC DIAGRAM



Pin 4 = Supply Voltage V_{-}
Pin 8 = Supply Voltage V_{+}

MAXIMUM RATINGS*

| Symbol | Parameter | Value | Unit |
|------------------|--------------------------------|-------------|------|
| V ⁺ | Supply Voltage | +18 | V |
| V ⁻ | Supply Voltage | -18 | V |
| V _{IDR} | Differential Input Voltage | ±30 | V |
| V _{IN} | Input Voltage | ±15 | V |
| P _D | Power Dissipation in Still Air | 570 | mW |
| T _{stg} | Storage Temperature Range | -55 to +125 | °C |

* Maximum Ratings are those values beyond which damage to the device may occur. Functional operation should be restricted to the Recommended Operating Conditions.

RECOMMENDED OPERATING CONDITIONS

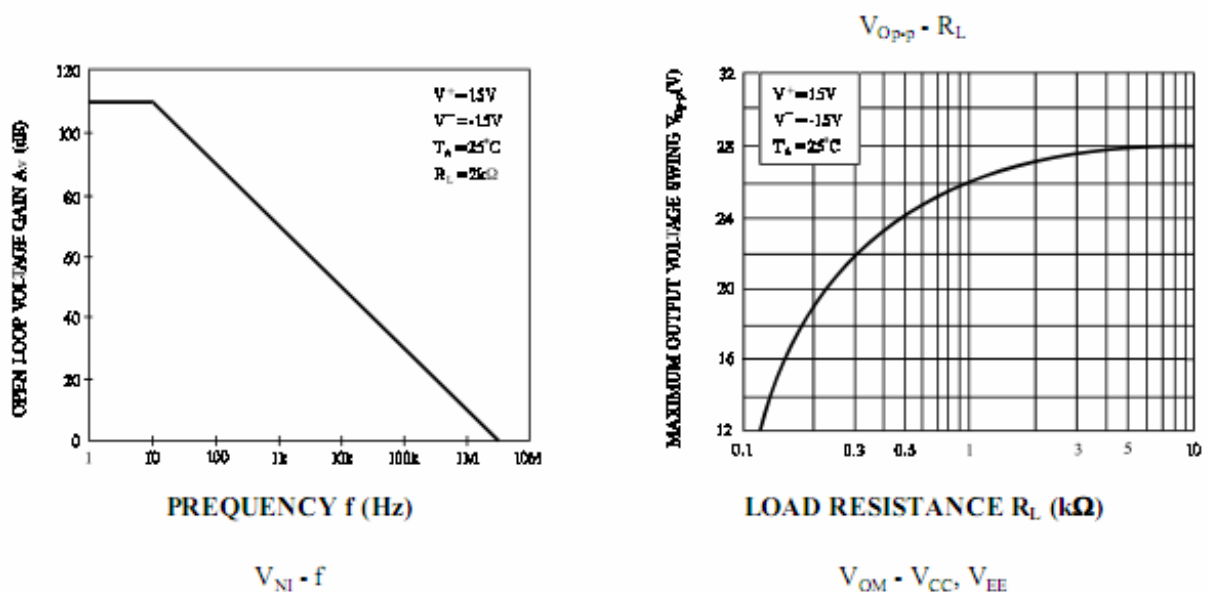
| Symbol | Parameter | Min | Max | Unit |
|----------------|--|-----|-----|------|
| V ⁺ | Supply Voltage | | +15 | V |
| V ⁻ | Supply Voltage | | -15 | V |
| T _A | Operating Temperature, All Package Types | 0 | +70 | °C |

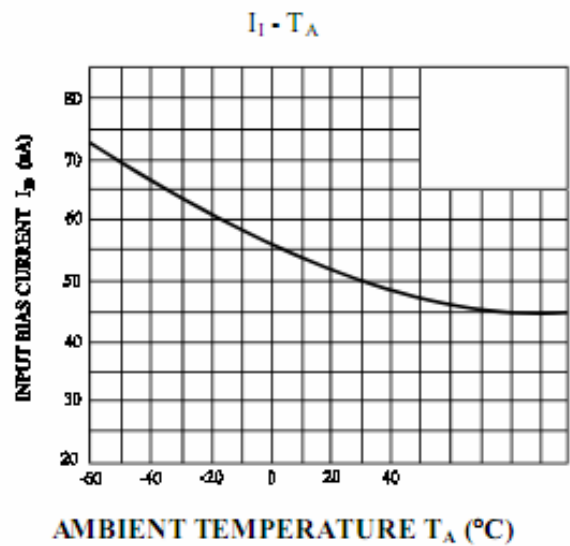
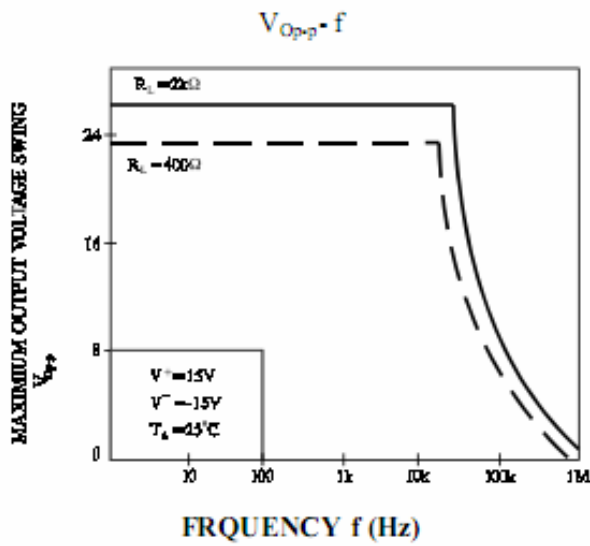
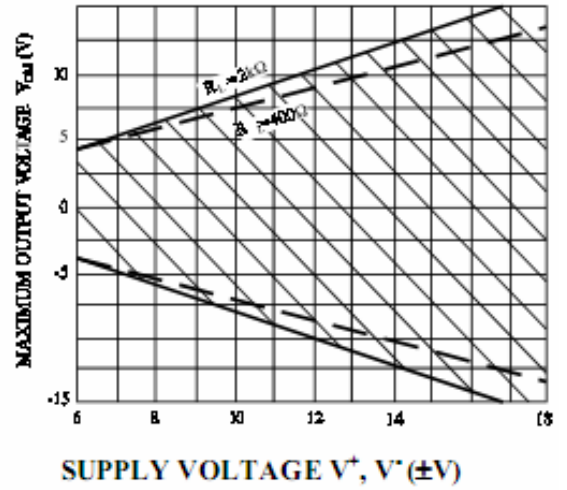
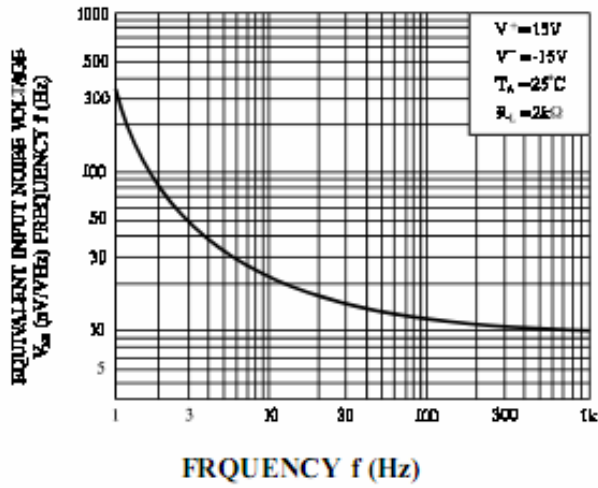
This device contains protection circuitry to guard against damage due to high static voltages or electric fields. However, precautions must be taken to avoid applications of any voltage higher than maximum rated voltages to this high-impedance circuit. For proper operation, V_{IN} and V_{OUT} should be constrained to the range GND ≤ (V_{IN} or V_{OUT}) ≤ V_{CC}.

Unused inputs must always be tied to an appropriate logic voltage level (e.g., either GND or V_{CC}). Unused outputs must be left open.

ELECTRICAL CHARACTERISTICS ($T_A = 0$ to $+70^\circ\text{C}$, $V^+ = +15\text{ V}$, $V^- = -15\text{ V}$)

| Symbol | Parameter | Test Conditions | Guaranteed Limits | | | Unit |
|--------------|---------------------------------|---|-------------------|-----|-----------|------------------|
| | | | Min | Typ | Max | |
| V_{IO} | Input Offset Voltage | $R_S \leq 10\text{ K}\Omega$ | | | ± 5.0 | mV |
| I_{IO} | Input Offset Current | | | | ± 200 | nA |
| I_{IB} | Input Bias Current | | | | -500 | nA |
| r_i | Input Resistance | | 0.3 | | | M Ω |
| A_V | Large-Signal Voltage Gain | $R_L \geq 2\text{ K}\Omega$, $V_C = \pm 10\text{ V}$ | 20 | | | V/mV |
| V_{OM} | Output Voltage Swing | $R_L \geq 10\text{ K}\Omega$ | ± 12 | | | V |
| | | $R_L \geq 2\text{ K}\Omega$ | ± 10 | | | V |
| V_{ICR} | Input Common-Mode Voltage Range | | ± 12 | | | V |
| CMRR | Common Mode Rejection Ratio | $R_S \leq 10\text{ K}\Omega$ | 70 | | | dB |
| PSRR | Supply Voltage Rejection Ratio | $R_S \leq 10\text{ K}\Omega$ | | | 150 | $\mu\text{V/V}$ |
| I^+, I^- | Supply Current | | | | 5.6 | mA |
| SR | Slew Rate | $R_L = 2\text{ K}\Omega$ | | | | V/ μs |
| P_C | Power Consumption | $R_L = \infty$ | | | 170 | mW |
| V_N | Input Noise Voltage | $R_S = 1\text{ K}\Omega$ $f = 30\text{ Hz} \sim 30\text{ KHz}$ | | 2.5 | | μVrms |
| I_{source} | Source Current | | -20 | | | mA |
| I_{sink} | Sink Current | | 20 | | | mA |

TYPICAL PERFORMANCE CURVES




Schematic Diagram (Each Amplifier)

