

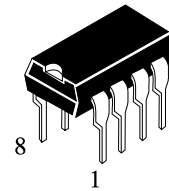
**IL1458**

## Dual Operational Amplifiers

The IL1458 is general purpose dual 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 match between amplifiers



N SUFFIX  
PLASTIC



D SUFFIX  
SOIC

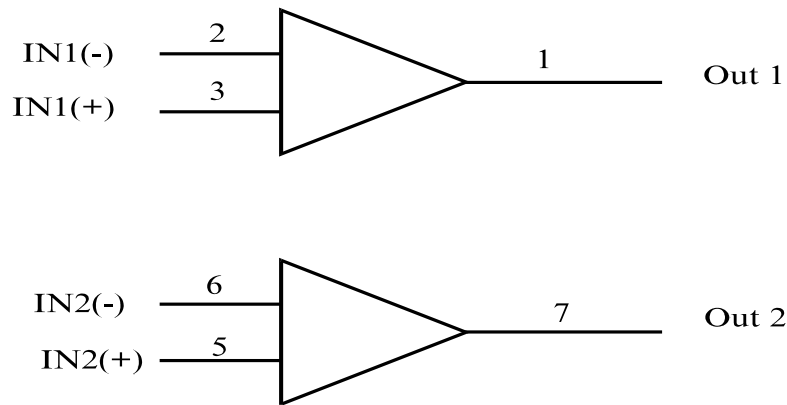
### ORDERING INFORMATION

IL1458N Plastic

IL1458D SOIC

$T_A = -40^\circ$  to  $85^\circ$  C  
for all packages.

### BLOCK DIAGRAM



PIN 4 = GND ( $V^-$ )

PIN 8 =  $V_{CC}$  ( $V^+$ )

**MAXIMUM RATINGS\***

| Symbol    | Parameter                      | Value      | Unit |
|-----------|--------------------------------|------------|------|
| $V^+$     | Supply Voltage                 | 18         | V    |
| $V^-$     | Supply Voltage                 | -18        | V    |
| $V_{IDR}$ | Differential Input Voltage     | $\pm 30$   | V    |
| $V_{IN}$  | Input Voltage                  | $\pm 15$   | V    |
| $P_D$     | Power Dissipation in Still Air | 570        | mW   |
| $T_a$     | Operation Temperature Range    | -40 to 85  | °C   |
| $T_{stg}$ | Storage Temperature Range      | -55 to 125 | °C   |

\* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

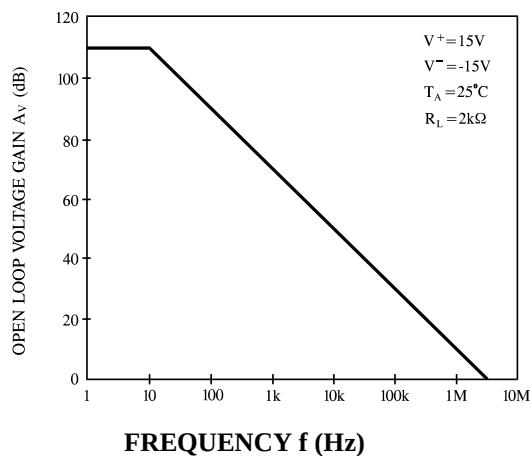
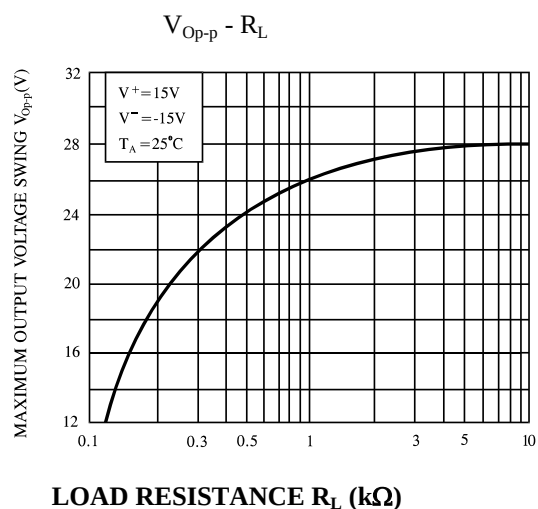
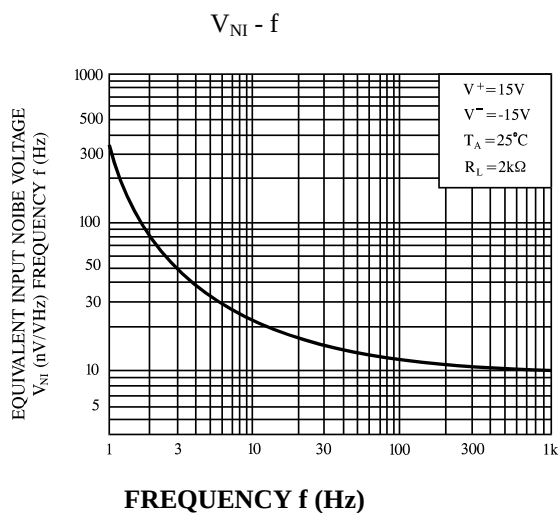
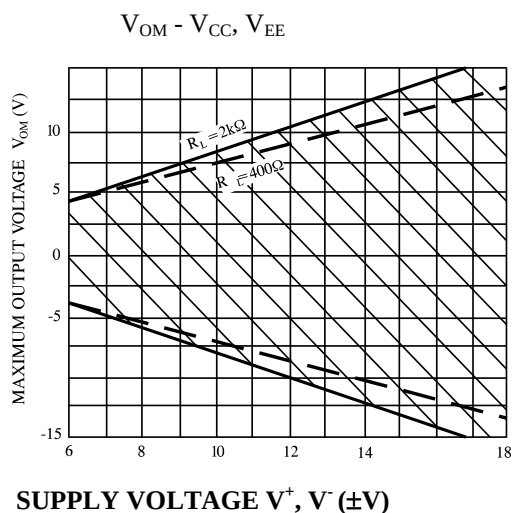
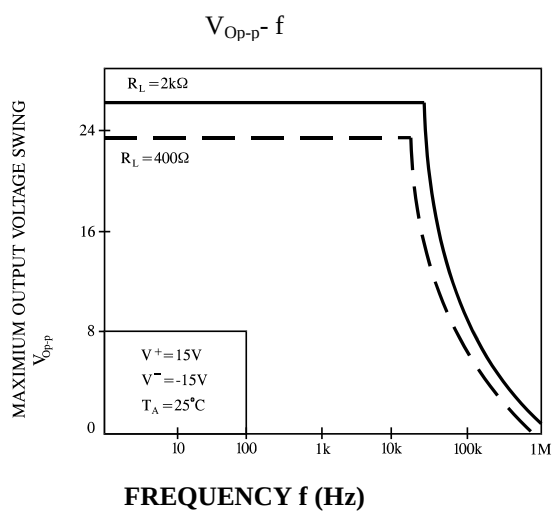
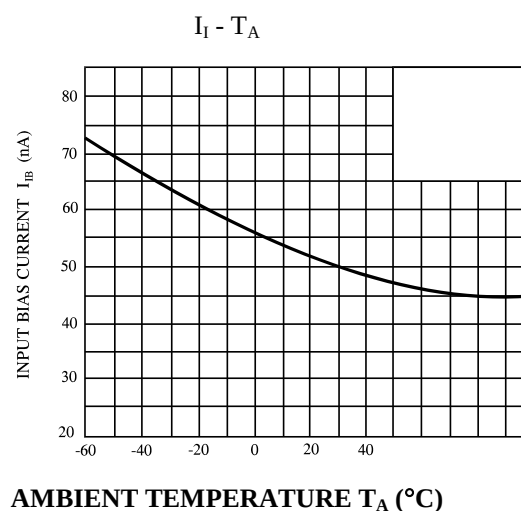
**RECOMMENDED OPERATING CONDITIONS**

| Symbol | Parameter      | Min | Max | Unit |
|--------|----------------|-----|-----|------|
| $V^+$  | Supply Voltage |     | 16  | V    |
| $V^-$  | Supply Voltage |     | -16 | V    |

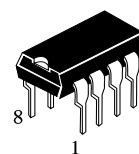
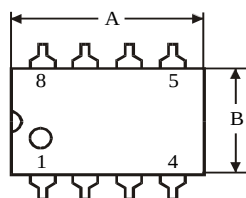
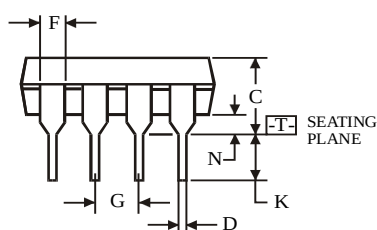
**ELECTRICAL CHARACTERISTICS**( $T_A = 25^\circ\text{C}$ ,  $V^+ = +15\text{ V}$ ,  $V^- = -15\text{ V}$ )

| Symbol              | Parameter                       | Test Conditions                                                | Guaranteed Limits |           | Unit                       |
|---------------------|---------------------------------|----------------------------------------------------------------|-------------------|-----------|----------------------------|
|                     |                                 |                                                                | Min               | Max       |                            |
| $V_{IO}$            | Input Offset Voltage            | $R_S \leq 10\text{K}\Omega$                                    |                   | $\pm 5.0$ | mV                         |
| $I_{IO}$            | Input Offset Current            |                                                                |                   | $\pm 200$ | nA                         |
| $I_{IB}$            | Input Bias Current              |                                                                |                   | - 500     | nA                         |
| $r_i$               | Input Resistance                |                                                                | 0.3               |           | M $\Omega$                 |
| $A_V$               | 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            | $R_L \geq 10\text{K}\Omega$                                    | $\pm 12$          |           | V                          |
|                     |                                 | $R_L \geq 2\text{K}\Omega$                                     | $\pm 10$          |           | V                          |
| $V_{ICR}$           | Input Common-Mode Voltage Range |                                                                | $\pm 12$          |           | 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       | $\mu\text{V/V}$            |
| SR                  | Slew Rate                       | $R_L \geq 2\text{K}\Omega$                                     | 0.8               | 1.6       |                            |
| $I^+$ , $I^-$       | Supply Current                  |                                                                |                   | 5.6       | mA                         |
| SR                  | Slew Rate                       | $R_L = 2\text{K}\Omega$                                        |                   |           | V/ $\mu\text{s}$           |
| $P_C$               | Power Consumption               | $R_L = \infty$                                                 |                   | 170       | mW                         |
| $V_N$               | Input Noise Voltage             | $R_S = 1\text{K}\Omega$<br>$f = 30\text{Hz} \sim 30\text{KHz}$ |                   | 3.5       | $\mu\text{V}_{\text{rms}}$ |
| $I_{\text{source}}$ | Source Current                  |                                                                | - 20              |           | mA                         |
| $I_{\text{sink}}$   | Sink Current                    |                                                                | 20                |           | mA                         |

## TYPICAL PERFORMANCE CURVES



# N SUFFIX PLASTIC DIP (MS – 001BA)



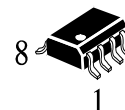
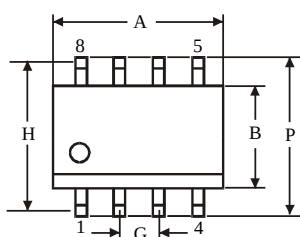
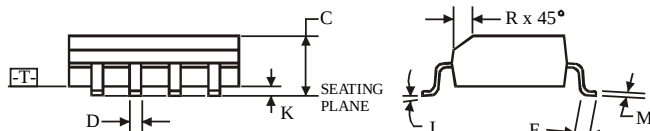
⌀ 0.25 (0.010) (M) T

## NOTES:

- Dimensions “A”, “B” do not include mold flash or protrusions.  
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

| Symbol | Dimension, mm |       |
|--------|---------------|-------|
|        | MIN           | MAX   |
| A      | 8.51          | 10.16 |
| B      | 6.1           | 7.11  |
| C      |               | 5.33  |
| D      | 0.36          | 0.56  |
| F      | 1.14          | 1.78  |
| G      | 2.54          |       |
| H      | 7.62          |       |
| J      | 0°            | 10°   |
| K      | 2.92          | 3.81  |
| L      | 7.62          | 8.26  |
| M      | 0.2           | 0.36  |
| N      | 0.38          |       |

# D SUFFIX SOIC (MS - 012AA)



⌀ 0.25 (0.010) (M) T C (M)

## NOTES:

- Dimensions A and B do not include mold flash or protrusion.
- Maximum mold flash or protrusion 0.15 mm (0.006) per side  
for A; for B - 0.25 mm (0.010) per side.

| Symbol | Dimension, mm |      |
|--------|---------------|------|
|        | MIN           | MAX  |
| A      | 4.8           | 5    |
| B      | 3.8           | 4    |
| C      | 1.35          | 1.75 |
| D      | 0.33          | 0.51 |
| F      | 0.4           | 1.27 |
| G      | 1.27          |      |
| H      | 5.72          |      |
| J      | 0°            | 8°   |
| K      | 0.1           | 0.25 |
| M      | 0.19          | 0.25 |
| P      | 5.8           | 6.2  |
| R      | 0.25          | 0.5  |