

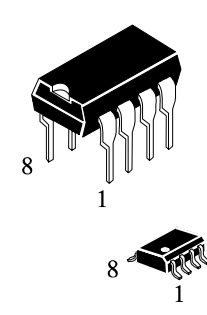
**KK1458**

**Dual Operational Amplifiers**

The KK1458 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

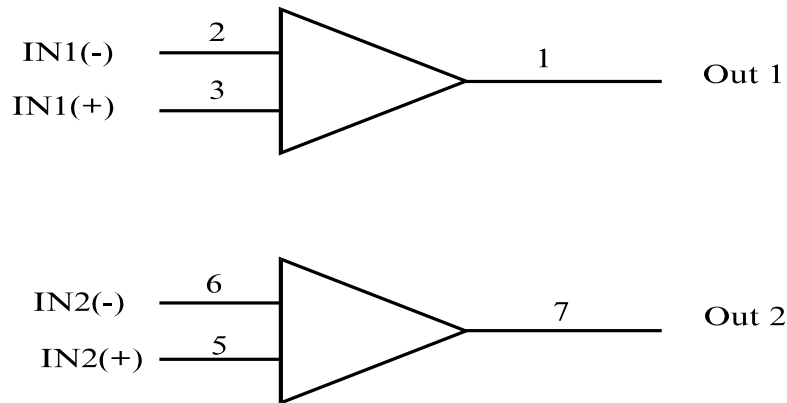


N SUFFIX  
PLASTIC

D SUFFIX  
SOIC

**ORDERING INFORMATION**  
 KK1458N Plastic  
 KK1458D SOIC  
 $T_A = -40^\circ$  to  $85^\circ$  C  
 for all packages.

**BLOCK DIAGRAM**



PIN 4 = GND (V<sup>-</sup>)

PIN 8 = V<sub>CC</sub> (V<sup>+</sup>)

**MAXIMUM RATINGS\***

| Symbol           | Parameter                      | Value      | Unit |
|------------------|--------------------------------|------------|------|
| V <sup>+</sup>   | Supply Voltage                 | 18         | V    |
| V <sup>-</sup>   | Supply Voltage                 | -18        | V    |
| V <sub>IDR</sub> | Differential Input Voltage     | ±30        | V    |
| V <sub>IN</sub>  | Input Voltage                  | ±15        | V    |
| P <sub>D</sub>   | Power Dissipation in Still Air | 570        | mW   |
| T <sub>a</sub>   | Operation Temperature Range    | -40 to 85  | °C   |
| T <sub>stg</sub> | 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.

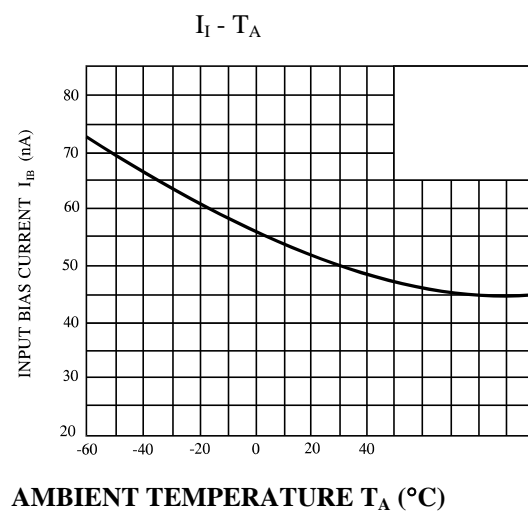
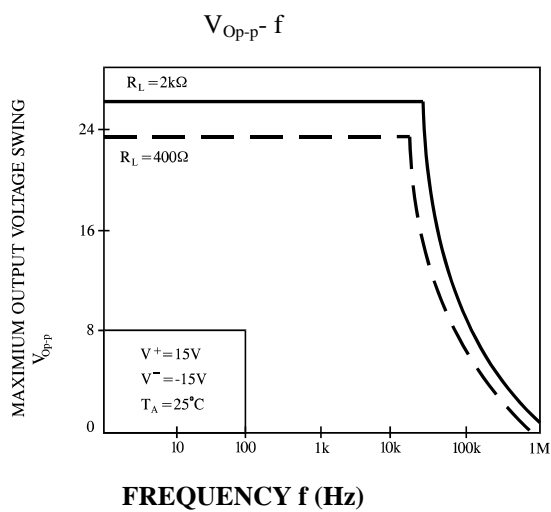
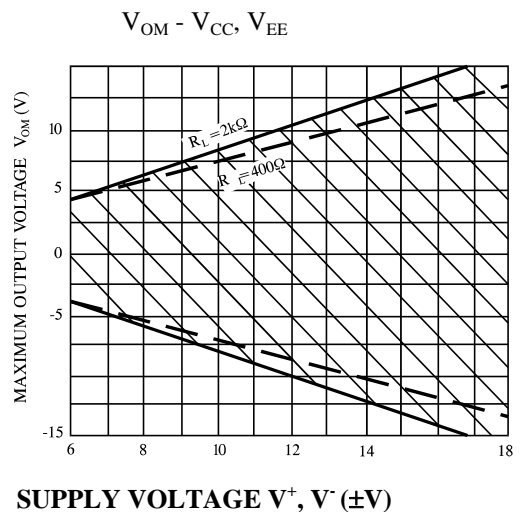
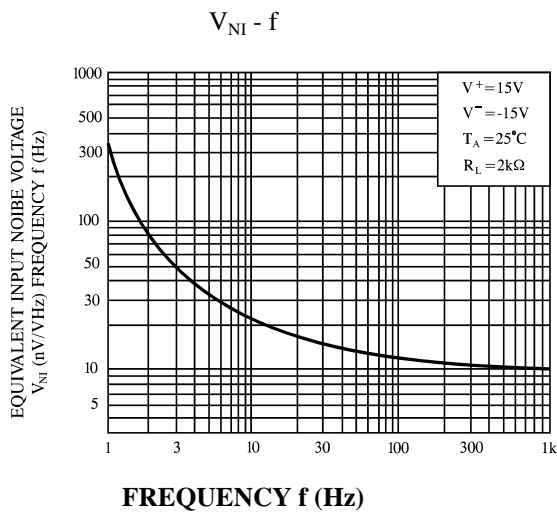
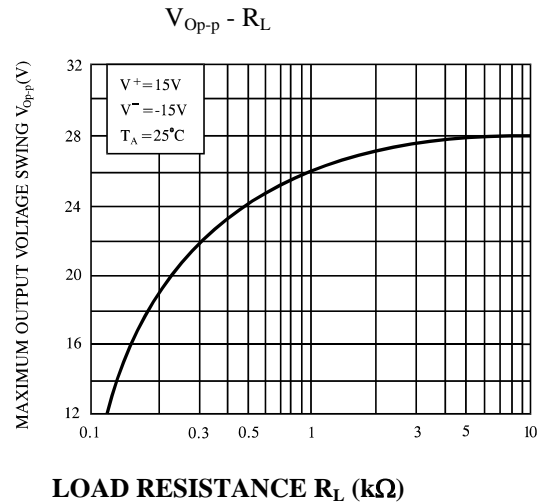
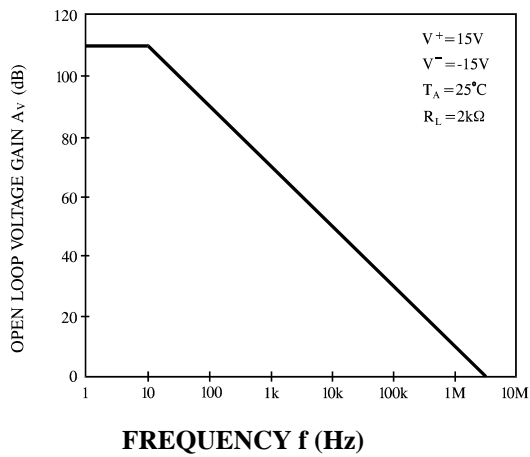
**RECOMMENDED OPERATING CONDITIONS**

| Symbol         | Parameter      | Min | Max | Unit |
|----------------|----------------|-----|-----|------|
| V <sup>+</sup> | Supply Voltage |     | 16  | V    |
| V <sup>-</sup> | Supply Voltage |     | -16 | V    |

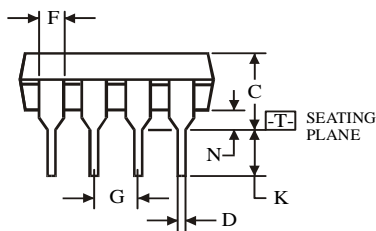
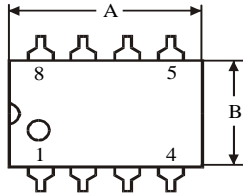
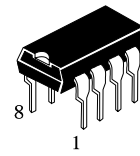
**ELECTRICAL CHARACTERISTICS**( $T_A = 25^\circ\text{C}$ ,  $V^+ = +15\text{ V}$ ,  $V^- = -15\text{ V}$ )

| 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       | $\mu\text{Vrms}$ |
| $I_{\text{source}}$ | Source Current                  |  | - 20              |           | mA               |
| $I_{\text{sink}}$   | Sink Current                    |  | 20                |           | mA               |

## TYPICAL PERFORMANCE CURVES



**N SUFFIX PLASTIC DIP  
(MS - 001BA)**



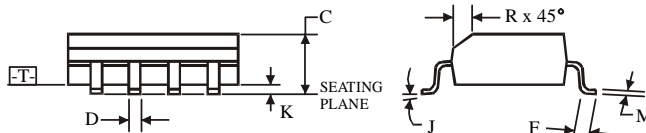
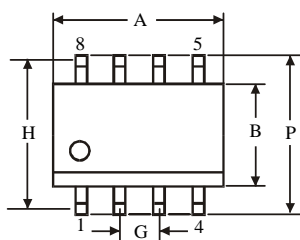
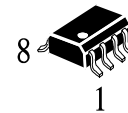
$\oplus 0.25 (0.010) \text{M} \text{T}$

| 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          |       |

**NOTES:**

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

**D SUFFIX SOIC  
(MS - 012AA)**



$\oplus 0.25 (0.010) \text{M} \text{T} \text{C} \text{M}$

| 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  |

**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.