



## MICROCIRCUIT DATA SHEET

**MNLF444M-X REV 0AL**

Original Creation Date: 06/21/95  
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### QUAD LOW POWER JFET INPUT OPERATIONAL AMPLIFIER

#### Industry Part Number

LF444

#### NS Part Numbers

LF444MD/883

#### Prime Die

LF444

#### Processing

MIL-STD-883, Method 5004

#### Quality Conformance Inspection

MIL-STD-883, Method 5005

| Subgrp | Description         | Temp ( °C) |
|--------|---------------------|------------|
| 1      | Static tests at     | +25        |
| 2      | Static tests at     | +125       |
| 3      | Static tests at     | -55        |
| 4      | Dynamic tests at    | +25        |
| 5      | Dynamic tests at    | +125       |
| 6      | Dynamic tests at    | -55        |
| 7      | Functional tests at | +25        |
| 8A     | Functional tests at | +125       |
| 8B     | Functional tests at | -55        |
| 9      | Switching tests at  | +25        |
| 10     | Switching tests at  | +125       |
| 11     | Switching tests at  | -55        |

## Electrical Characteristics

### DC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)

DC:  $V_s = \pm 15V$ ,  $V_{cm} = 0V$ ,  $R_s = 0$ ,  $R_l = 0$

| SYMBOL | PARAMETER                       | CONDITIONS                                                      | NOTES | PIN-NAME | MIN     | MAX  | UNIT | SUB-GROUPS |
|--------|---------------------------------|-----------------------------------------------------------------|-------|----------|---------|------|------|------------|
| Vio    | Input Offset Voltage            | $R_s = 10K\ \Omega$                                             |       |          | -10     | 10   | mV   | 1          |
|        |                                 |                                                                 |       |          | -14     | 14   | mV   | 2, 3       |
| Iio    | Input Offset Current            | $R_l = 10K\ \Omega$                                             |       |          | -0.05   | 0.05 | nA   | 1          |
|        |                                 |                                                                 |       |          | -10     | 10   | nA   | 2          |
| +Iib   | Input Bias Current              | $R_l = 10K\ \Omega$                                             |       |          | -0.10   | 0.10 | nA   | 1          |
|        |                                 |                                                                 |       |          | -20     | 20   | nA   | 2          |
| -Iib   | Input Bias Current              | $R_l = 10K\ \Omega$                                             |       |          | -0.10   | 0.10 | nA   | 1          |
|        |                                 |                                                                 |       |          | -20     | 20   | nA   | 2          |
| +Avs   | Large Signal Voltage Gain       | $V_o = 0$ to $+10V$ , $R_l = 10K\ \Omega$ , $R_s = 10K\ \Omega$ | 2     |          | 25      |      | V/mV | 1          |
|        |                                 |                                                                 | 2     |          | 15      |      | V/mV | 2, 3       |
| -Avs   | Large Signal Voltage Gain       | $V_o = 0$ to $-10V$ , $R_l = 10K\ \Omega$ , $R_s = 10K\ \Omega$ | 2     |          | 25      |      | V/mV | 1          |
|        |                                 |                                                                 | 2     |          | 15      |      | V/mV | 2, 3       |
| +Vo    | Output Voltage Swing            | $R_l = 10K\ \Omega$ , $V_{in} = +1V$                            |       |          | 12      |      | V    | 1, 2, 3    |
| -Vo    | Output Voltage Swing            | $R_l = 10K\ \Omega$ , $V_{in} = -1V$                            |       |          |         | -12  | V    | 1, 2, 3    |
| Vcm    | Input Common Mode Voltage Range |                                                                 | 1     |          | $\pm 9$ |      | V    | 1, 2, 3    |
| CMRR   | Common Mode Rejection Ratio     | $R_s = 10K\ \Omega$ , $V_{cm} = \pm 9V$                         |       |          | 70      |      | dB   | 1, 2, 3    |
| PSRR+  | Power Supply Rejection Ratio    | $V_s = \pm 15V$ to $V_s = \pm 6V$                               |       |          | 70      |      | dB   | 1, 2, 3    |
| PSRR-  | Power Supply Rejection Ratio    | $V_s = \pm 15V$ to $V_s = \pm 6V$                               |       |          | 70      |      | dB   | 1, 2, 3    |
| Is     | Supply Current                  |                                                                 |       |          |         | 1    | mA   | 1, 2, 3    |
| +Ios   | Output Short Circuit Current    | $V_{in} = 1V$                                                   |       |          | -3      | -20  | mA   | 1          |
|        |                                 |                                                                 |       |          | -3      | -40  | mA   | 2, 3       |
| -Ios   | Output Short Circuit Current    | $V_{in} = -1V$                                                  |       |          | 3       | 20   | mA   | 1          |
|        |                                 |                                                                 |       |          | 3       | 40   | mA   | 2, 3       |

Note 1: Parameter tested go-no-go only.

Note 2: Datalog in K = V/mV.