



MILITARY DATA SHEET

MNLF156A-X REV 0BL

Original Creation Date: 06/20/95
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MONOLITHIC JFET INPUT OPERATIONAL AMPLIFIERS

Industry Part Number

LF156A

NS Part Numbers

LF156AH/883

Prime Die

LF156

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp Description

Temp (°C)

	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: $R_s = 50 \text{ Ohms}$, $V_{cc} = \pm 15V$, $V_{cm} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage				-2	2	mV	1
					-2.5	2.5	mV	2, 3
		Vcc = $\pm 20V$			-2	2	mV	1
		Vcc = $\pm 20V$			-2.5	2.5	mV	2, 3
Iio	Input Offset Current	Vcc = $\pm 20V$			-0.02	0.02	nA	1
		Vcc = $\pm 20V$			-10	10	nA	2, 3
+Iib	Input Bias Current	Vcc = $\pm 20V$			-0.1	0.08	nA	1
		Vcc = $\pm 20V$			-10	25	nA	2, 3
		Vcc = $\pm 20V$, Vcm = -16V			-0.1	0.1	nA	1
		Vcc = $\pm 20V$, Vcm = -16V			-10	50	nA	2, 3
		Vcc = $\pm 20V$, Vcm = 16V			-0.1	3.5	nA	1
		Vcc = $\pm 20V$, Vcm = 16V			-10	60	nA	2, 3
-Iib	Input Bias Current	Vcc = $\pm 20V$			-0.1	0.08	nA	1
		Vcc = $\pm 20V$			-10	25	nA	2, 3
		Vcc = $\pm 20V$, Vcm = -16V			-0.1	0.1	nA	1
		Vcc = $\pm 20V$, Vcm = -16V			-10	50	nA	2, 3
		Vcc = $\pm 20V$, Vcm = 16V			-0.1	3.5	nA	1
		Vcc = $\pm 20V$, Vcm = 16V			-10	60	nA	2, 3
+PSRR	Power Supply Rejection Ratio	+Vcc = 20V to 10V, -Vcc = -20V			85		dB	1, 2, 3
-PSRR	Power Supply Rejection Ratio	-Vcc = -20V to -10V, +Vcc = 20V			85		dB	1, 2, 3
CMRR	Common Mode Rejection Ratio	Vcm = $\pm 11V$			85		dB	1, 2, 3
Icc	Power Supply Current					7	mA	1
						14	mA	2, 3
+Ios	Short Circuit Current	Vout = 0V			-45	-15	mA	1
					-35	-10	mA	2
					-65	-15	mA	3
-Ios	Short Circuit Current	Vout = 0V			15	45	mA	1
					10	35	mA	2
					15	65	mA	3

Electrical Characteristics

DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)
 DC: $R_s = 50 \text{ Ohms}$, $V_{cc} = \pm 15\text{V}$, $V_{cm} = 0\text{V}$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
V_{cm}	Common Mode Voltage Range		1		-11	11	V	1, 2, 3
$\Delta V_{io}/\Delta T$	Average TC of Input Offset Voltage		2			5	$\mu\text{V}/\text{C}$	2, 3

DC/AC PARAMETERS

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

DC: $R_s = 50 \text{ Ohms}$, $V_{cc} = \pm 15\text{V}$, $V_{cm} = 0\text{V}$

AC: $R_s = 50 \text{ Ohms}$, $V_{cc} = \pm 15\text{V}$, $V_{cm} = 0\text{V}$

$+V_{op}$	Output Voltage Swing	$R_l = 10\text{K Ohms}$			12		V	4, 5, 6
		$R_l = 2\text{K Ohms}$	3		10		V	4, 5, 6
$-V_{op}$	Output Voltage Swing	$R_l = 10\text{K Ohms}$				-12	V	4, 5, 6
		$R_l = 2\text{K Ohms}$	3			-10	V	4, 5, 6
A_{vs}	Large Signal Voltage Gain	$R_l = 2\text{K Ohms}$, $V_{out} = 0 \text{ to } 10\text{V}$			50		V/mV	4
					25		V/mV	5, 6
		$R_l = 2\text{K Ohms}$, $V_{out} = 0 \text{ to } -10\text{V}$			50		V/mV	4
					25		V/mV	5, 6
Sr_{\pm}	Slew Rate	$A_v = 1$			10		V/ μS	7
G_{bw}	Gain Bandwidth				4		MHz	7

DC PARAMETERS: DRIFT VALUES

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

DC: $R_s = 50 \text{ Ohms}$, $V_{cc} = \pm 15\text{V}$, $V_{cm} = 0\text{V}$. "Deltas not required on B-Level product. Deltas required for S-Level product ONLY as specified on Internal Processing Instructions (IPI)."

V_{io}	Input Offset Voltage				-1	1	mV	1
I_{cc}	Power Supply Current				-1	1	mA	1

Note 1: Parameter Guaranteed by CMRR test.

Note 2: Bench tested.

Note 3: Parameter Guaranteed by A_{vs} test.

Graphics and Diagrams

GRAPHICS#	DESCRIPTION
05094HR	(blank)
H08CRE	(blank)

See attached graphics following this page.