



MICROCIRCUIT DATA SHEET

MJLF155-X REV 0CL

Original Creation Date: 06/20/95
Last Update Date: 09/03/97
Last Major Revision Date: 06/20/95

JFET INPUT LOW POWER

Industry Part Number

LF155

NS Part Numbers

JL155BGA

Prime Die

LF155

Controlling Document

38510/11401, AMEND. 6 REV A

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
12	Settling time at	+25

Electrical Characteristics

DC PARAMETERS

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

DC: $V_{cc} = \pm 20V$, $R_s = 0$, $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
I _{cc}	Supply Current	+V _{cc} = 15V, -V _{cc} = -15V			4		mA	1, 2
					6		mA	3
V _{io}	Input Offset Voltage	+V _{cc} = 5V, -V _{cc} = -35V, V _{cm} = 15V			-5	5	mV	1
					-7	7	mV	2, 3
		+V _{cc} = 35V, -V _{cc} = -5V, V _{cm} = -15V			-5	5	mV	1
					-7	7	mV	2, 3
		+V _{cc} = 5V, -V _{cc} = -5V			-5	5	mV	1
					-7	7	mV	2, 3
-I _{ib}	Input Bias Current	+V _{cc} = 5V, -V _{cc} = -35V, V _{cm} = 15V			-0.1	3.5	nA	1
					-10	60	nA	2
		+V _{cc} = 35V, -V _{cc} = -5V, V _{cm} = -15V			-0.1	0.1	nA	1
					-10	50	nA	2
		+V _{cc} = 5V, -V _{cc} = -25V, V _{cm} = 10V			-0.1	0.1	nA	1
					-10	50	nA	2
+I _{ib}	Input Bias Current	+V _{cc} = 5V, -V _{cc} = -35V, V _{cm} = 15V			-0.1	3.5	nA	1
					-10	60	nA	2
		+V _{cc} = 35V, -V _{cc} = -5V, V _{cm} = -15V			-0.1	0.1	nA	1
					-10	50	nA	2
		+V _{cc} = 5V, -V _{cc} = -25V, V _{cm} = 10V			-0.1	0.1	nA	1
					-10	50	nA	2
I _{io}	Input Offset Current				-0.02	0.02	nA	1
					-20	20	nA	2
+PSRR	Power Supply Rejection Ratio	+V _{cc} = 10V, -V _{cc} = -20V			85		dB	1, 2, 3

Electrical Characteristics

DC PARAMETERS (Continued)

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

DC: $V_{cc} = \pm 20V$, $R_s = 0$, $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
-PSRR	Power Supply Rejection Ratio	$+V_{cc} = 20V$, $-V_{cc} = -10V$			85		dB	1, 2, 3
CMR	Input Voltage Common Rejection	$V_{cm} = -15V$ to $15V$			85		dB	1, 2, 3
Vio Adj(+)	Adjustment for Input Offset Voltage				8		mV	1, 2, 3
Vio Adj(-)	Adjustment for Input Offset Voltage					-8	mV	1, 2, 3
Ios(+)	Output Short Circuit Current (For Position Output)	$+V_{cc} = 15V$, $-V_{cc} = -15V$, $t \leq 25mS$			-50		mA	1, 2, 3
Ios(-)	Output Short Circuit Current (For Position Output)	$+V_{cc} = 15V$, $-V_{cc} = -15V$, $t \leq 25mS$				50	mA	1, 2, 3
Delta Vio/Delta T	Temperature Coefficient of Input Offset Voltage	$25\text{ C} \leq T_A \leq +125\text{ C}$	2		-30	30	$\mu V/^\circ C$	2
		$25\text{ C} \leq T_A \leq -55\text{ C}$	2		-30	30	$\mu V/^\circ C$	3
-Avs	Open Loop Voltage Gain (Single Ended)	$V_o = -15V$, $R_l = 2K$	1		50		V/mV	4
			1		25		V/mV	5, 6
+Avs	Open Loop Voltage Gain (Single Ended)	$V_o = +15V$, $R_l = 2K$	1		50		V/mV	4
			1		25		V/mV	5, 6
Avs	Open Loop Voltage Gain (Single Ended)	$V_{cc} = \pm 5V$, $V_o = \pm 2V$, $R_l = 2K$	1		10		V/mV	4, 5, 6
-Vop	Output Voltage Swing	$R_l = 10K$				-16	V	4, 5, 6
		$R_l = 2K$				-15	V	4, 5, 6
+Vop	Output Voltage Swing	$R_l = 10K$			16		V	4, 5, 6
		$R_l = 2K$			15		V	4, 5, 6

Electrical Characteristics

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
AC: $V_{cc} = \pm 20V$, $R_s = 0$, $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Sr-	Slew Rate (Fall)	$V_{cc} = \pm 15V$, $V_{in} = 5V$ to $-5V$, $A_v = 1$			2		V/uS	7
		$V_{cc} = \pm 15V$, $V_{in} = 5V$ to $-5V$, $A_v = 1$			1		V/uS	8A, 8B
Sr+	Slew Rate (Rise)	$V_{cc} = \pm 15V$, $V_{in} = -5V$ to $5V$, $A_v = 1$			2		V/uS	7
		$V_{cc} = \pm 15V$, $V_{in} = -5V$ to $5V$, $A_v = 1$			1		V/uS	8A, 8B
TR(tr)	Transient Response Rise Time	$\pm V_{cc} = \pm 15V$, $R_l = 2K$ Ohms, $C_l = 100pF$, $V_{in} = 50mV$, $A_v = 1$	3			150	nS	7, 8A, 8B
TR(os)	Transient Response Overshoot	$\pm V_{cc} = \pm 15V$, $R_l = 2K$ Ohms, $C_l = 100pF$, $V_{in} = 50mV$, $A_v = 1$	3			40	%	7, 8A, 8B
NI(BB)	Noise Broadband	Bandwidth = 5KHz	3			10	μV_{rms}	7
NI(PC)	Noise Popcorn	Bandwidth = 5KHz	3			40	μV_{pk}	7
ts(+)	Settling Time	$\pm V_{cc} = \pm 15V$, $A_v = -1$	3			4000	nS	12
ts(-)	Settling Time	$\pm V_{cc} = \pm 15V$, $A_v = -1$	3			4000	nS	12

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: $V_{cc} = \pm 20V$, $R_s = 0$, $V_{cm} = 0$. "Delta calculations performed on JAN S and QMLV devices at group B, subgroup 5 only".

Vio	Input Offset Voltage				-1	1	mV	1
-Iib	Input Bias Current				-0.05	0.05	nA	1
+Iib	Input Bias Current				-0.05	0.05	nA	1

Note 1: Datalog of K equivalent to V/mV.
Note 2: Calculated parameter.
Note 3: Bench test.

Graphics and Diagrams

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

See attached graphics following this page.

Revision History

Rev	ECN #	Rel Date	Originator	Changes
0CL	M0001716	09/03/97	Barbara Lopez	Changes: MJLF155-X Rev. 0BL to MJLF155-X Rev. 0CL. Added reference to Subgroup 12 on Main Table.