



MICROCIRCUIT DATA SHEET

MNLF411M-X REV 0BL

Original Creation Date: 06/21/95
Last Update Date: 03/17/97
Last Major Revision Date: 06/21/95

LOW OFFSET, LOW DRIFT JFET INPUT OPERATIONAL AMPLIFIER

Industry Part Number

LF411

NS Part Numbers

LF411MH/883

Prime Die

LF411

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-833, 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: $V_s = \pm 15V$, $V_{cm} = 0$, $R_s = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	$R_s = 10K\ \Omega$ ms			-2	2	mV	1
					-3.7	3.7	mV	2
					-3.3	3.3	mV	3
Iio	Input Offset Current		3		-0.1	0.1	nA	1
			3		-25	25	nA	2
Iib+	Input Bias Current		3		-0.2	0.2	nA	1
			3		-50	50	nA	2
Iib-	Input Bias Current		3		-0.2	0.2	nA	1
			3		-50	-50	nA	2
Vcm	Input Common Mode Voltage Range		1		+9		V	1, 2, 3
CMRR	Common Mode Rejection Ratio	$R_s \leq 10K\ \Omega$ ms, $V_{cm} = \pm 9V$			70		dB	1, 2, 3
+PSRR	Supply Voltage Rejection Ratio	$+V_s = 6V$, $-V_s = -15V$			70		dB	1, 2, 3
-PSRR	Supply Voltage Rejection Ratio	$+V_s = 15V$, $-V_s = -6V$			70		dB	1, 2, 3
Is	Supply Current					3.4	mA	1, 2, 3
-Ios	Output Short Circuit Current	$+V_{in} = -11V$, $-V_{in} = 11V$, $R_s = 10K\ \Omega$ ms			13	45	mA	1
					6	45	mA	2, 3
+Ios	Output Short Circuit Current	$+V_{in} = 11V$, $-V_{in} = -11V$, $R_s = 10K\ \Omega$ ms			-45	-13	mA	1
					-45	-6	mA	2, 3
+Vioadj	Input Offset Voltage Adjustment				8		mV	1
-Vioadj	Input Offset Voltage Adjustment					-8	mV	1
+Avs	Large Signal Voltage Gain	$V_o = 0$ to $10V$, $R_L = 2K\ \Omega$ ms	2		25		V/mV	4
			2		15		V/mV	5, 6
-Avs	Large Signal Voltage Gain	$V_o = 0$ to $-10V$, $R_L = 2K\ \Omega$ ms	2		25		V/mV	4
			2		15		V/mV	5, 6
Vo+	Output Voltage Swing	$R_L = 10K\ \Omega$ ms, $+V_{in} = 11V$, $-V_{in} = -11V$, $R_s = 10K\ \Omega$ ms			12		V	4, 5, 6

Electrical Characteristics

DC PARAMETERS(Continued)

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

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

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vo-	Output Voltage Swing	$R_l = 10K\ \Omega$ ms, $+V_{in} = -11V$, $-V_{in} = 11V$, $R_s = 10K\ \Omega$ ms				-12	V	4, 5, 6

AC PARAMETERS

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

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

Sr+	Slew Rate	$V_{out} = -5V$ to $5V$			8		V/ μ S	7
Sr-	Slew Rate	$V_{out} = 5V$ to $-5V$			8		V/ μ S	7
Gbw	Gain Bandwidth Product	No Subgroups			2.7		MHz	

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

Note 2: Datalog in K = V/mV.

Note 3: $R_s = 10K\ \Omega$ ms at $+125\ ^\circ C$.

Graphics and Diagrams

GRAPHICS#	DESCRIPTION
09749HR	(blank)
MKT-H08CRE	(blank)
MKT-J08ARL	(blank)

See attached graphics following this page.