National Semiconductor

MICROCIRCUIT DATA SHEET

MJLF198-X REV 0CL

Original Creation Date: 07/20/95
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SAMPLE AND HOLD CIRCUIT, 10K OHM LOAD

Industry Part Number

LF198

NS Part Numbers

JL198BGA
JL198SGA

Prime Die

LF198

Controlling Document

38510/12501

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp	Description	Temp (^{O}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

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	+Vcc = 3.5V, -Vcc = -26.5V, Vcm = 11.5V			-3	3	mV	1
					-5	5	mV	2, 3
		+Vcc = 26.5V, -Vcc = -3.5V, Vcm = -11.5V			-3	3	mV	1
					-5	5	mV	2, 3
		+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-3	3	mV	1
					-5	5	mV	2, 3
		+Vcc = 7V, -Vcc = -3V, Vcm = 2V			-3	3	mV	1
					-5	5	mV	2, 3
		+Vcc = 3V, -Vcc = -7V, Vcm = -2V			-3	3	mV	1
					-5	5	mV	2, 3
Iib	Input Bias Current	+Vcc = 3.5V, -Vcc = -26.5V, Vcm = 11.5V			-1	25	nA	1
					-25	75	nA	2, 3
		+Vcc = 26.5V, -Vcc = -3.5V, Vcm = -11.5V			-1	25	nA	1
					-25	75	nA	2, 3
		+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-1	25	nA	1
					-25	75	nA	2, 3
		+Vcc = 7V, -Vcc = -3V, Vcm = 2V			-1	25	nA	1
					-25	75	nA	2, 3
		+Vcc = 3V, -Vcc = -7V, Vcm = -2V			-1	25	nA	1
					-25	75	nA	2, 3
Zi	Input Impedance	+Vcc = 3.5V to 26.6V, -Vcc = -26.5V to -3.5V, Vcm = 11.5V to -11.5V			2		GOhms	1
					1		GOhms	2, 3
Vio adj+	Input Offset Voltage Adjustment	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			6		mV	1, 2, 3
Vio adj-	Input Offset Voltage Adjustment	+Vcc = 15V, -Vcc = -15V, Vcm = 0V				-6	mV	1, 2, 3
PSRR+	Power Supply Rejection Ratio	-Vcc = -18V, +Vcc = 18V to 12V			80		dB	1, 2, 3
PSRR-	Power Supply Rejection Ratio	+Vcc = 18V, -Vcc = -12V			80		dB	1, 2, 3
Icc	Supply Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			1	5.5	mA	1, 2
					1	6.5	mA	3

Electrical Characteristics

DC PARAMETERS(Continued)

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Ae	Gain Error	+Vcc = 3.5V to 26.5V, -Vcc = -26.5V to -3.5V, Vcm = -11.5V to 11.5V			-0.005	0.005	%	1
					-0.02	0.02	%	2, 3
		+Vcc = 3V to 7V, -Vcc = -7V to -3V, Vcm = -2V to 2V			-0.02	0.02	%	1
					-0.04	0.04	%	2, 3
Rsc	Series Charge Resistance	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			75	400	Ohms	1, 2, 3
Iih (a)	Logical 1 Input Current	+Vcc = 8.5V, -Vcc = -21.5V			0	10	uA	1, 2, 3
Iih (b)	Logical 1 Input Current	+Vcc = 8.5V, -Vcc = -21.5V			0	10	uA	1, 2, 3
Iil (a)	Logical 0 Input Current	+Vcc = 21.5V, -Vcc = -8.5V			-1	1	uA	1, 2, 3
Iil (b)	Logical 0 Input Current	+Vcc = 21.5V, -Vcc = -8.5V			-1	1	uA	1, 2, 3
Ios+	Output Short Circuit Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-25		mA	1, 2, 3
Ios-	Output Short Circuit Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V				25	mA	1, 2, 3
Ich+	Hold Capacitor Charge Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V				-3	mA	1
						-2	mA	2, 3
Ich-	Hold Capacitor Charge Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			3		mA	1
					2		mA	2, 3
Vth(H)	Differential Logic Threshold	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			1		mA	1, 2, 3
Vth(L)	Differential Logic Threshold	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-10	10	uA	1, 2, 3
Ihl+	Hold Mode Leakage Current	+Vcc = 3.5V, -Vcc = -26.5V, Vcm = -11.5V			-0.100	0.100	nA	1
					-50	50	nA	2
Ihl-	Hold Mode Leakage Current	+Vcc = 26.5V, -Vcc = -3.5V, Vcm = 11.5V			-0.100	0.100	nA	1
					-50	50	nA	2
Zo	Output Impedance	+Vcc = 15V, -Vcc = -15V, Vcm = 0V				2	Ohms	1, 2, 3
Vhs	(HOLD) Step Voltage	+Vcc = 3.5V, -Vcc = -26.5V, Vcm = 11.5V			-2	2	mV	1
					-5	5	mV	2, 3
		+Vcc = 26.5V, -Vcc = -3.5V, Vcm = -11.5V			-2	2	mV	1
					-5	5	mV	2, 3

Electrical Characteristics

DC PARAMETERS(Continued)

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Frr	Feedthrough Rejection Ratio	+Vcc = 15V, -Vcc = -15V, Vcm = 0V, Vin = 0V to 11.5V			86		dB	1
					80		dB	2, 3
		+Vcc = 15V, -Vcc = -15V, Vcm = 0V, Vin = 11.5V to 0V			86		dB	1
					80		dB	2, 3
		+Vcc = 15V, -Vcc = -15V, Vcm = 0V, Vin = 0V to -11.5V			86		dB	1
					80		dB	2, 3
		+Vcc = 15V, -Vcc = -15V, Vcm = 0V, Vin = -11.5V to 0V			86		dB	1
					80		dB	2, 3

AC/DC PARAMETERS

Delta Vio/Delta T	Input Offset Voltage Temp Sensitivity		1		-20	20	uV/ C	8A, 8B
taq	Aquisition Time	+Vcc = 15V, -Vcc = -15V	2			25	uS	7
tap	Aperture Time	+Vcc = 15V, -Vcc = -15V	2			300	nS	7
ts	Settling Time	+Vcc = 15V, -Vcc = -15V	2			1.5	uS	7
Frr AC	Feedthrough Rejection Ratio	+Vcc = 15V, -Vcc = -15V, Vin = 20Vpp	2		86		dB	7
TR(ts)	Transient Response (settling time)	+Vcc = 3.5V, -Vcc = -26.5V, Vin = 100mV pulse	2			2.5	uS	7
		+Vcc = 26.5V, -Vcc = -3.5V, Vin = 100mV pulse	2			2.5	uS	7
TR(os)	Transient Response (Overshoot)	+Vcc = 3.5V, -Vcc = -26.5V, Vin = 100mV pulse	2			40	%	7
		+Vcc = 26.5V, -Vcc = -3.5V, Vin = 100mV pulse	2			40	%	7
en (H)	Noise	+Vcc = 15V, -Vcc = -15V	2			10	mVRMS	7
en (S)	Noise	+Vcc = 15V, -Vcc = -15V	2			10	mVRMS	7

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: "Delta calculations performed on JAN S and QMLV devices at group B, subgroup 5 only".

Vio	Input Offset Voltage	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-0.5	0.5	mV	1
Iib	Input Bias Current	+Vcc = 15V, -Vcc = -15V, Vcm = 0V			-2.5	2.5	nA	1

Note 1: Calculated parameters.
Note 2: Bench test.

Graphics and Diagrams

GRAPHICS#	DESCRIPTION
05022HR	(blank)
H08CRE	(blank)

See attached graphics following this page.