National Semiconductor

MILITARY DATA SHEET

MNLM161-X REV 0BL

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HIGH SPEED DIFFERENTIAL COMPARATOR

Industry Part Number

LM161

NS Part Numbers

LM161H/883
LM161J/883

Prime Die

LM161

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: Vcc = 5.25V, V+ = +10V, V- = -10V

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Icc	Supply Current					18	mA	1, 2, 3
		Vcc = 7V, V+ = +16V, V- = -16V	2			21	mA	1, 2, 3
I+	Supply Current					4.5	mA	1, 2, 3
		Vcc = 7V, V+ = +16V, V- = -16V	2			9.3	mA	1, 2, 3
I-	Supply Current					-10	mA	1, 2, 3
		Vcc = 7V, V+ = +16V, V- = -16V	2			-15	mA	1, 2, 3
Voh (B)	Logical "1" Output Voltage	Vcc = 4.75V, Isource = -500uA			2.4		V	1, 2, 3
Voh (A)	Logical "1" Output Voltage	Vcc = 4.75V, Isource = -500uA			2.4		V	1, 2, 3
Vol (A)	Logical "0" Output Voltage	Vcc = 4.75V, Isink = 6.4 mA				0.4	V	1, 2, 3
Vol (B)	Logical "0" Output Voltage	Vcc = 4.75V, Isink = 6.4 mA				0.4	V	1, 2, 3
Ist1 (A)	Strobe "1" input Current	Vstrobe = 2.4V				200	uA	1, 2, 3
Ist1 (B)	Strobe "1" input Current	Vstrobe = 2.4V				200	uA	1, 2, 3
Ist0 (A)	Strobe "0" input Current	Vstrobe = 0.4V				-1.6	mA	1, 2, 3
Ist0 (B)	Strobe "0" input Current	Vstrobe = 0.4V				-1.6	mA	1, 2, 3
Vst1 (A)	Strobe "1" input Voltage	Vcc = 4.75V, Isink = 6.4mA	1		2		V	1
			1		2.4		V	2, 3
Vst1 (B)	Strobe "1" input Voltage	Vcc = 4.75V, Isink = 6.4mA	1		2		V	1
			1		2.4		V	2, 3
Vst0 (A)	Strobe "0" input Voltage	Vcc = 4.75V, Isource = 0.5mA	1			0.8	V	1, 2, 3
Vst0 (B)	Strobe "0" input Voltage	Vcc = 4.75V, Isource = 0.5mA	1			0.8	V	1, 2, 3
Ios (B)	Ouput Short Circuit Current				-18	-55	mA	1, 2, 3

Electrical Characteristics

DC PARAMETERS(Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: Vcc = 5.25V, V+ = +10V, V- = -10V

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Ios (A)	Ouput Short Circuit Current				-18	-55	mA	1, 2, 3
Iib	Input Bias Current	Vin = 5V				20	uA	1, 2, 3
Vos	Input Offset Voltage				-3	+3	mV	1
					-5	+5	mV	2, 3
Ioffset	Input Offset Current				-4	+4	uA	1
					-8	+8	uA	2, 3
Vstc (A)	Strobe Clamping Voltage	Ii = -12mA			-1.5		V	1, 2, 3
Vstc (B)	Strobe Clamping Voltage	Ii = -12mA			-1.5		V	1, 2, 3

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
AC: Vcc = 5.25V, V+ = +10V, V- = -10V

tPHL	Propagation Delay Time	Vin = 50mV Overdrive	3			20	nS	7
tPLH	Propagation Delay Time	Vin = 50mV Overdrive	3			20	nS	7
	Delay Between Output A and Output B	Vin = 50mV Overdrive	3			5	nS	7

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: Vcc = 5.25V, V+ = +10V, V- = -10V. "Deltas not required on B-Level product. Deltas required for S-Level product ONLY as specified on Internal Processing Instructions (IPI)."

Voh (B)	Logical "1" Output Voltage	Vcc = 4.75V, Isource = -500uA			-0.2	0.2	V	1
Voh (A)	Logical "1" Output Voltage	Vcc = 4.75V, Isource = -500uA			-0.2	0.2	V	1
Istr1 (A)	Strobe "1" Input Current	Vstrobe =2.4V			-20	20	uA	1
Istr1 (B)	Strobe "1" Input Current	Vstrobe =2.4V			-20	20	uA	1
Iib	Input Bias Current	Vin = 5V			-2	2	uA	1
Vos	Input Offset Voltage				-0.6	0.6	mV	1

Note 1: Parameter tested go-no-go only.
Note 2: Strobe 1 and Strobe 2 MUST BE LOW.
Note 3: Bench test per THP2-045, use TDN No. 70256647 for Flatpacks and TDN No. 72256646 for Dips.