National
Semiconductor

MICROCIRCUIT DATA SHEET

MNDM9348-X REV 1A0

Original Creation Date: 03/30/99
Last Update Date: 07/30/99
Last Major Revision Date: 03/30/99

12-Input Parity Checker/Generator

General Description

The '9348 is a 12-input parity checker/generator generating odd and even parity outputs.
It can be used in high speed error detection applications.

Industry Part Number

DM9348

NS Part Numbers

DM9348J/883
DM9348W/883

Prime Die

A048

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp	Description	Temp ($^\circ$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

Features

(Absolute Maximum Ratings)
(Note 1)

Supply Voltage (Vcc)

                                                                +7.0V

Input Voltage

                                                                +5.5V

Storage Temperature (Tstg)

                                                                -65C to +150C

Operating Temperature Range

                                                                -55C to +125C

Note 1:   Absolute maximum ratings are those values beyond which damage to the device may
          occur. The databook specifications should be met, without exception, to ensure that
          the system design is reliable over its power supply, temperature, and output/input
          loading variable.

Electrical Characteristics

DC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: VCC=4.5V to 5.5V,   TEMP RANGE: -55C to +125C.

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
IIH	High Level Input Current	VCC=5.5V, VM=2.4V,	1, 3	INPUTS		80	uA	1, 2, 3
IBVI	High Level Input Current	VCC=5.5V, VM=5.5V,	1, 3	INPUTS		1.0	mA	1, 2, 3
IIL	Low Level Input Current	VCC=5.5V, VM=0.4V	1, 3	INPUTS		-3.2	mA	1, 2, 3
VOL	Low Level Output Voltage	VCC=4.5V, VIH=2.0V, IOL=16mA, VIL=0.8V	1, 3	OUTPUTS		0.4	V	1, 2, 3
VOH	High Level Output Voltage	VCC=4.5V, VIL=0.8V, IOH= -800uA, VIH=2.0V	1, 3	OUTPUTS	2.4		V	1, 2, 3
ICC	Supply Current	VCC=5.5V, VINH=4.5V, VINL=0.0V	1, 3	VCC		82	mA	1, 2, 3
IOS	Short Circuit Output Current	VCC=5.5V, VOUT=0.0V Not more than one output should be shorted at a time.	1, 3	OUTPUTS	-20	-70	mA	1, 2, 3
VIC	Input Clamp Voltage	VCC=4.5V, IM= -12mA	1, 3	INPUTS		-1.5	V	1, 2, 3

Electrical Characteristics

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
AC: VCC=5.0V, CL=15pF, RL=400 Ohms, Temp Range: -55C to 125C

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
tpLH1	Propagation Delay	VCC=5.0V, Pins I2, I3, I7 & I8 = 0.0V, all other input pins high	2, 4	I4 to P0		46	ns	9
			2, 4	I4 to P0		81	ns	10, 11
TPHL1	Propagation Delay	VCC=5.0V, Pins I2, I3, I7 & I8 = 0.0V, all other input pins high	2, 4	I4 to P0		42	ns	9
			2, 4	I4 to P0		74	ns	10, 11
tpLH2	Propagation Delay	VCC=5.0V, Pins I2, I3, I7 & I8 = 0.0V, all other input pins high	2, 4	I4 to PE		51	ns	9
			2, 4	I4 to PE		90	ns	10, 11
tpHL2	Propagation Delay	VCC=5.0V, Pins I2, I3, I7 & I8 = 0.0V, all other input pins high	2, 4	I4 to PE		48	ns	9
			2, 4	I4 to PE		84	ns	10, 11
tpLH3	Propagation Delay	VCC=5.0V, I7 = high, all other input pins = 0.0V	2, 4	I3 to P0		27	ns	9
			2, 4	I3 to P0		48	ns	10, 11
tpHL4	Propagation Delay	VCC=5.0V, all other input pins = 0.0V	2, 4	I4 to P0		25	ns	9
			2, 4	I4 to P0		44	ns	10, 11
tpLH/HL5	Propagation Delay	VCC=5.0V, all other input pins high or low	2, 4	In to P0		75	ns	9
			2, 4	In to P0		132	ns	10, 11
tpLH/HL6	Propagation Delay	VCC=5.0V, all other input pins high or low	2, 4	In to PE		75	ns	9
			2, 4	In to PE		132	ns	10, 11

Note 1:   SCREEN TESTED 100% ON EACH DEVICE AT +25C, +125C & -55C TEMPERATURE, SUBGROUPS A1, 2, 3, 7 & 8.
Note 2:   SCREEN TESTED (METHOD 5005, TABLE 1) ON EACH MFG. LOT AT +25C TEMPERATURE ONLY, SUBGROUP A9.
Note 3:   SAMPLE TESTED (METHOD 5005, TABLE 1) ON EACH MFG. LOT AT +25C, +125C & -55C TEMPERATURE, SUBGROUPS A1, 2, 3, 7 & 8.
Note 4:   SAMPLE TESTED (METHOD 5005, TABLE 1) ON EACH MFG. LOT AT +25C TEMPERATURE ONLY, SUBGROUP A9. SUBGROUPS 10 & 11 ARE GUARANTEED, NOT TESTED.

Revision History

Rev	ECN #	Rel Date	Originator	Changes
1A0	M0003348	07/30/99	Donald B. Miller	Archive Table 1, 9348 rev C1.1. Release MDS MNDM9348-X rev 1A0.