



**MILITARY DATA SHEET**

**MNCD40106BM-X REV 0AL**

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**HEX SCHMITT TRIGGER**

**Industry Part Number**

CD40106BM

**NS Part Numbers**

CD40106BMJ/883  
CD40106BMW/883

**Prime Die**

CD40106BM

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**Processing**

MIL-STD-883, Method 5004

**Quality Conformance Inspection**

MIL-STD-883, Method 5005

<b>Subgrp</b>	<b>Description</b>	<b>Temp (°C)</b>
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: Vss = 0V

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vol	Logical "0" Output Voltage	Vdd = 5V, Vih = 5V, Vil = 0V, Iout < 1uA			.05		V	1, 2, 3
		Vdd = 10V, Vih = 10V, Vil = 0V, Iout < 1uA			.05		V	1, 2, 3
		Vdd = 15V, Vih = 15V, Vil = 0V, Iout < 1uA			.05		V	1, 2, 3
Voh	Logical "1" Output Voltage	Vdd = 5V, Vih = 5V, Vil = 0V, Iout < 1uA			4.95		V	1, 2, 3
		Vdd = 10V, Vih = 10V, Vil = 0V, Iout < 1uA			9.95		V	1, 2, 3
		Vdd = 15V, Vih = 15V, Vil = 0V, Iout < 1uA			14.95		V	1, 2, 3
Iih	Logical "1" Input Current	Vdd = 15V, Vin = 15V (all inputs tied)				97	nA	1
						1000	nA	2
						100	nA	3
Iil	Logical "0" Input Current	Vdd = 15V, Vin = 0V (all inputs tied)				-97	nA	1
						-1000	nA	2
						-100	nA	3
Ioh	Logical "1" Output Current	Vdd = 5V, Vih = 5V, Vil = 0V, Vout = 4.6V			-0.525		mA	1
					-0.36		mA	2
					-0.64		mA	3
		Vdd = 10V, Vih = 10V, Vil = 0V, Vout = 9.5V			-1.34		mA	1
					-0.9		mA	2
					-1.6		mA	3
		Vdd = 15V, Vih = 15V, Vil = 0V, Vout = 13.5V	3		-3.5		mA	1
			3		-2.4		mA	2
			3		-4.2		mA	3

## Electrical Characteristics

### DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{ss} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Iol	Logical "0" Output Current	Vdd = 5V, Vih = 5V, Vil = 0V, Vout = .4V			.51		mA	1
					.36		mA	2
					.64		mA	3
		Vdd = 10V, Vih = 10V, Vil = 0V, Vout = .5V			1.3		mA	1
					.9		mA	2
					1.6		mA	3
		Vdd = 15V, Vih = 15V, Vil = 0V, Vout = 1.5V	3		3.4		mA	1
			3		2.4		mA	2
			3		4.2		mA	3
Isource	Output Source Current	Vdd = 5V, Vih = 5V, Vil = 0V, Vout = 0V			-1.94		mA	1
					-1.4		mA	2
					-2.5		mA	3
Isink	Output Sink Current	Vdd = 5V, Vih = 5V, Vil = 0V, Vout = 5V			2.14		mA	1
					1.4		mA	2
					2.45		mA	3
Icc	Power Supply Current	Vdd = 5V, Vih = 5V, Vil = 0V,				1	uA	1, 3
						30	uA	2
		Vdd = 10V, Vih = 10V, Vil = 0V,				2	uA	1, 3
						60	uA	2
		Vdd = 15V, Vih = 15V, Vil = 0V,	5			4	uA	1, 3
			5			120	uA	2
Vt-	Threshold Voltage	Vdd = 5V	1		.7	2	V	1, 2, 3
		Vdd = 10V	1		1.4	4	V	1, 2, 3
		Vdd = 15V	1		2.1	6	V	1, 2, 3

## Electrical Characteristics

### DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{ss} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vt+	Threshold Voltage	Vdd = 5V	1		3	4.3	V	1, 2, 3
		Vdd = 10V	1		6	8.6	V	1, 2, 3
		Vdd = 15V	1		9	12.9	V	1, 2, 3
Vh	Hysteresis	Vdd = 5V	1		1	3.6	V	1, 2, 3
		Vdd = 10V	1		2	7.2	V	1, 2, 3
		Vdd = 15V	1		3	10.8	V	1, 2, 3

### DC HIGH TEMP VOLTAGE STRESS

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{ss} = 0V$ ,  $V_{dd} = 15V$

Iih	Input Leakage Current	Vih = 15V				1000	nA	2
Iil	Input Leakage Current	Vil = 0V				-1000	nA	2
Icc	Power Supply Current	Vih = 15V				120	$\mu A$	2

## Electrical Characteristics

### AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)  
 AC:  $t_r=t_f=20\text{nS}$ ,  $C_l = 50\text{pF}$ ,  $R_l = 200\text{K}$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
tPLH	Propagation Delay Time	Vdd = 5V	4			400	nS	9
			4			560	nS	10
			4			320	nS	11
		Vdd = 10V	2			200	nS	9
			2			280	nS	10
			2			160	nS	11
		Vdd = 15V	2			160	nS	9
			2			225	nS	10
			2			130	nS	11
tPHL	Propagation Delay Time	Vdd = 5V	4			400	nS	9
			4			560	nS	10
			4			320	nS	11
		Vdd = 10V	2			200	nS	9
			2			280	nS	10
			2			160	nS	11
		Vdd = 15V	2			160	nS	9
			2			225	nS	10
			2			130	nS	11
tTLH	Transition Time	Vdd = 5V	4			200	nS	9
			4			300	nS	10, 11
		Vdd = 10V	2			100	nS	9
			2			150	nS	10, 11
		Vdd = 15V	2			80	nS	9
			2			120	nS	10, 11
tTHL	Transition Time	Vdd = 5V	4			200	nS	9
			4			300	nS	10, 11
		Vdd = 10V	2			100	nS	9
			2			150	nS	10, 11
		Vdd = 15V	2			80	nS	9
			2			120	nS	10, 11

## Electrical Characteristics

### AC PARAMETERS (Continued)

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

AC:  $t_r=t_f=20\text{nS}$ ,  $C_l = 50\text{pF}$ ,  $R_l = 200\text{K}$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
		Continuity Tests	6					9, 10, 11

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

Note 2: Guaranteed parameter not tested.

Note 3:  $\pm 15\%$  of the reading, and also Applies to Class "S" only, except 38510.

Note 4: Tested at 25 C; guaranteed but not tested at +125 C and -55 C.

Note 5: Applies to Class "S" only, except 38510. Drift Limits at 25 C for  $I_{cc} = \pm 1\mu\text{A}$ . "THIS NOTE IS INVALID AND CURRENTLY BEING UPDATED. CONTACT FACTORY."

Note 6: Engineering setup tests, no limits.