

ABSOLUTE MAXIMUM RATINGS*

Case Temperature under Bias . . . -55°C to +125°C

Storage Temperature -65°C to +150°C

Voltage on Any Pin with

Respect to Ground -1.0V to +7.0V

/Package Power Dissipation 1W

Not to exceed the maximum allowable die temperature based on thermal resistance of the package.

NOTICE: This data sheet contains information on products in the sampling and initial production phases of development. It is valid for the devices indicated in the revision history. The specifications are subject to change without notice.

**WARNING: Stressing the device beyond the "Absolute Maximum Ratings" may cause permanent damage. These are stress ratings only. Operation beyond the "Operating Conditions" is not recommended and extended exposure beyond the "Operating Conditions" may affect device reliability.*

NOTICE: The specifications are subject to change without notice.

DC CHARACTERISTICS $T_C = -55^\circ\text{C to } +125^\circ\text{C}$, $V_{CC} = 5V \pm 10\%$

Symbol	Parameter	Min	Max	Units	Test Conditions
V_{IL}	Input Low Voltage (Except X1)	-0.5	$0.2 V_{CC} - 0.3$	V	
V_{IL1}	Clock Input Low Voltage (X1)	-0.5	0.6	V	
V_{IH}	Input High Voltage (All except X1 and \overline{RES})	$0.2 V_{CC} + 0.9$	$V_{CC} + 0.5$	V	
V_{IH1}	Input High Voltage (\overline{RES})	3.0	$V_{CC} + 0.5$	V	
V_{IH2}	Clock Input High Voltage (X1)	3.9	$V_{CC} + 0.5$	V	
V_{OL}	Output Low Voltage		0.45	V	$I_{OL} = 2.5 \text{ mA}$ (S0, 1, 2) $I_{OL} = 2.0 \text{ mA}$ (others)
V_{OH}	Output High Voltage	2.4	V_{CC}	V	$I_{OH} = -2.4 \text{ mA @ } 2.4V$ (4)
		$V_{CC} - 0.5$	V_{CC}	V	$I_{OH} = -200 \mu\text{A @ } V_{CC} - 0.5V$ (4)
I_{CC}	Power Supply Current		100	mA	@ 20 MHz, -55°C $V_{CC} = 5.5V$ (3)
			90	mA	@ 16 MHz, -55°C $V_{CC} = 5.5V$ (3)
			80	mA	@ 12.5 MHz, -55°C $V_{CC} = 5.5V$ (3)
			70	mA	@ 10 MHz, -55°C $V_{CC} = 5.5V$ (3)
I_{LI}	Input Leakage Current		± 10	μA	@ 0.5 MHz, $0.45V \leq V_{IN} \leq V_{CC}$
I_{LO}	Output Leakage Current		± 10	μA	@ 0.5 MHz, $0.45V \leq V_{OUT} \leq V_{CC}$ (1)
V_{CLO}	Clock Output Low		0.45	V	$I_{CLO} = 4.0 \text{ mA}$

DC CHARACTERISTICS (Continued) $T_C = -55^\circ\text{C}$ to $+125^\circ\text{C}$, $V_{CC} = 5\text{V} \pm 10\%$

Symbol	Parameter	Min	Max	Units	Test Conditions
V_{CHO}	Clock Output High	$V_{CC} - 0.5$		V	$I_{CHO} = -500 \mu\text{A}$
C_{IN}	Input Capacitance		10	pF	@ 1 MHz(2)
C_{IO}	Output or I/O Capacitance		20	pF	@ 1 MHz(2)

NOTES:

1. Pins being floated during HOLD or by invoking the ONCE Mode.
2. Characterization conditions are a) Frequency = 1 MHz; b) Unmeasured pins at GND; c) V_{IN} at + 5.0V or 0.45V. This parameter is not tested.
3. Current is measured with the device in RESET with X1 and X2 driven and all other non-power pins open.
4. $\overline{RD}/\overline{QSMD}$, \overline{UCS} , \overline{LCS} , $\overline{MCS0}/\overline{PEREQ}$, $\overline{MCS1}/\overline{ERROR}$ and $\overline{TEST}/\overline{BUSY}$ pins have internal pullup devices. Loading some of these pins above $I_{OH} = -200 \mu\text{A}$ can cause the M80C186XL to go into alternative modes of operation. See the section on Local Bus Controller and Reset for details.