1.0 ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings†

V_{DD} 7.0V
Input current (V_{DD}) . . . . . .10 mA
Output current ($\overline{RST}$) . . . . . .10 mA
Rated Rise Time of V_{DD} 100V/µs
All inputs and outputs (except $\overline{RST}$) w.r.t. V_{SS} . . . . . .-0.6V to (V_{DD} + 1.0V)
$\overline{RST}$ output w.r.t. V_{SS} . . . . . -0.6V to 13.5V
Storage temperature . . . . . .65°C to + 150°C
Ambient temp. with power applied . . . . . -40°C to + 125°C
Maximum Junction temp. with power applied . . . . . .150°C
ESD protection on all pins . . . . . ≥ 2 kV

† **Notice:** Stresses above those listed under “Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operational listings of this specification is not implied. Exposure to maximum rating conditions for extended periods may affect device reliability.

DC CHARACTERISTICS

Electrical Specifications: Unless otherwise indicated, all limits are specified for V_{DD} = 1V to 5.5V, R_{PU} = 100 kΩ (only **MCP111**), T_A = -40°C to +125°C.

Parameters		Sym	Min	Typ	Max	Units	Conditions
Operating Voltage Range		V_{DD}	1.0	—	5.5	V	
Specified V_{DD} Value to V_{OUT} low		V_{DD}	1.0	—		V	$I_{\overline{RST}}$ = 10 µA, $V_{\overline{RST}}$ < 0.2V
Operating Current		I_{DD}	—	< 1	1.75	µA	
V_{DD} Trip Point	**MCP1XX-195**	V_{TRIP}	1.872	1.900	1.929	V	T_A = +25°C **(Note 1)**
			1.853	1.900	1.948	V	T_A = -40°C to +85°C **(Note 2)**
	MCP1XX-240		2.285	2.320	2.355	V	T_A = +25°C **(Note 1)**
			2.262	2.320	2.378	V	**Note 2**
	MCP1XX-270		2.591	2.630	2.670	V	T_A = +25°C **(Note 1)**
			2.564	2.630	2.696	V	**Note 2**
	MCP1XX-290		2.857	2.900	2.944	V	T_A = +25°C **(Note 1)**
			2.828	2.900	2.973	V	**Note 2**
	MCP1XX-300		2.886	2.930	2.974	V	T_A = +25°C **(Note 1)**
			2.857	2.930	3.003	V	**Note 2**
	MCP1XX-315		3.034	3.080	3.126	V	T_A = +25°C **(Note 1)**
			3.003	3.080	3.157	V	**Note 2**
	MCP1XX-450		4.314	4.380	4.446	V	T_A = +25°C **(Note 1)**
			4.271	4.380	4.490	V	**Note 2**
	MCP1XX-475		4.561	4.630	4.700	V	T_A = +25°C **(Note 1)**
			4.514	4.630	4.746	V	**Note 2**
V_{DD} Trip Point Tempco		T_{TPCO}	—	±100	—	ppm/°C	

Note 1: Trip point is ±1.5% from typical value.
2: Trip point is ±2.5% from typical value.
3: This specification allows this device to be used in PICmicro® microcontroller applications that require the In-Circuit Serial Programming™ (ICSP™) feature (see device-specific programming specifications for voltage requirements). This specification DOES NOT allow a continuous high voltage to be present on the open-drain output pin (V_{OUT}). The total time that the V_{OUT} pin can be above the maximum device operational voltage (5.5V) is 100 sec. Current into the V_{OUT} pin should be limited to 2 mA. It is recommended that the device operational temperature be maintained between 0°C to 70°C (+25°C preferred). For additional information, please refer to Figure 2-28.
4: This parameter is established by characterization and is not 100% tested.