

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_J = 25^\circ\text{C}$. $V_{PWR} = V_{IN_SNS} = 12\text{V}$, V_{DD33} , V_{DD25} and REF pins floating, unless otherwise indicated. (Notes 2, 3)

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
V_{IN_SNS} Input Characteristics							
V_{IN_SNS}	V_{IN_SNS} Input Voltage Range		●	0		15	V
R_{VIN_SNS}	V_{IN_SNS} Input Resistance		●	70	90	110	k Ω
TUE_{VIN_SNS}	VIN_ON, VIN_OFF Threshold Total Unadjusted Error	$3\text{V} \leq V_{VIN_SNS} \leq 8\text{V}$	●			± 2.0	% of Reading
		$V_{VIN_SNS} > 8\text{V}$	●			± 1.0	% of Reading
	READ_VIN Total Unadjusted Error	$3\text{V} \leq V_{VIN_SNS} \leq 8\text{V}$	●			± 1.5	% of Reading
		$V_{VIN_SNS} > 8\text{V}$	●			± 1.0	% of Reading
Temperature Sensor Characteristics							
TUE_{TS}	Total Unadjusted Error				± 1		$^\circ\text{C}$
V_{OUT_ENn} Enable Output (V_{OUT_EN} [3:0]) Characteristics							
V_{VOUT_ENn}	Output High Voltage (Note 9)	$I_{VOUT_ENn} = -5\mu\text{A}$, $V_{DD33} = 3.3\text{V}$	●	10	12.5	14.7	V
I_{VOUT_ENn}	Output Sourcing Current	V_{VOUT_ENn} Pull-Up Enabled, $V_{VOUT_ENn} = 1\text{V}$	●	-5	-6	-8	μA
	Output Sinking Current	Strong Pull-Down Enabled, $V_{VOUT_ENn} = 0.4\text{V}$	●	3	5	8	mA
		Weak Pull-Down Enabled, $V_{VOUT_ENn} = 0.4\text{V}$	●	3	5	60	μA
Output Leakage Current	Internal Pull-Up Disabled, $0\text{V} \leq V_{VOUT_ENn} \leq 15\text{V}$	●			± 1	μA	
V_{OUT_ENn} Enable Output (V_{OUT_EN} [7:4]) Characteristics							
I_{VOUT_ENn}	Output Sinking Current	Strong Pull-Down Enabled, $V_{OUT_ENn} = 0.1\text{V}$	●	3	6	8	mA
	Output Leakage Current	$0\text{V} \leq V_{VOUT_ENn} \leq 6\text{V}$	●			± 1	μA
V_{IN_EN} Enable Output (V_{IN_EN}) Characteristics							
V_{VIN_EN}	Output High Voltage	$I_{VIN_EN} = -5\mu\text{A}$, $V_{DD33} = 3.3\text{V}$	●	10	12.5	14.7	V
I_{VIN_EN}	Output Sourcing Current	V_{IN_EN} Pull-Up Enabled, $V_{VIN_EN} = 1\text{V}$	●	-5	-6	-8	μA
	Output Sinking Current	$V_{VIN_EN} = 0.4\text{V}$	●	3	5	8	mA
	Leakage Current	Internal Pull-Up Disabled, $0\text{V} \leq V_{VIN_EN} \leq 15\text{V}$	●			± 1	μA
EEPROM Characteristics							
Endurance	(Notes 10, 11)	$0^\circ\text{C} < T_J < 85^\circ\text{C}$ During EEPROM Write Operations	●	10,000			Cycles
Retention	(Notes 10, 11)	$T_J < 105^\circ\text{C}$	●	20			Years
t_{MASS_WRITE}	Mass Write Operation Time (Note 12)	STORE_USER_ALL, $0^\circ\text{C} < T_J < 85^\circ\text{C}$ During EEPROM Write Operations	●		440	4100	ms
Digital Inputs SCL, SDA, CONTROL0, CONTROL1, WDI/RESETB, FAULTB00, FAULTB01, FAULTB10, FAULTB11, WP							
V_{IH}	High Level Input Voltage		●	2.1			V
V_{IL}	Low Level Input Voltage		●			1.5	V
V_{HYST}	Input Hysteresis				20		mV
I_{LEAK}	Input Leakage Current	$0\text{V} \leq V_{PIN} \leq 5.5\text{V}$, SDA, SCL, CONTROL $_n$ Pins Only	●			± 2	μA
		$0\text{V} \leq V_{PIN} \leq V_{DD33} + 0.3\text{V}$, FAULTB zn , WDI/RESETB, WP Pins Only	●			± 2	μA