

**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
<b><math>V_{IN\_SNS}</math> Input Characteristics</b>							
$V_{IN\_SNS}$	$V_{IN\_SNS}$ Input Voltage Range		●	0		15	V
$R_{VIN\_SNS}$	$V_{IN\_SNS}$ Input Resistance		●	70	90	110	k $\Omega$
$TUE_{VIN\_SNS}$	VIN_ON, VIN_OFF Threshold Total Unadjusted Error	$3\text{V} \leq V_{VIN\_SNS} \leq 8\text{V}$	●			$\pm 2.0$	% of Reading
		$V_{VIN\_SNS} > 8\text{V}$	●			$\pm 1.0$	% of Reading
	READ_VIN Total Unadjusted Error	$3\text{V} \leq V_{VIN\_SNS} \leq 8\text{V}$	●			$\pm 1.5$	% of Reading
		$V_{VIN\_SNS} > 8\text{V}$	●			$\pm 1.0$	% of Reading
<b>Temperature Sensor Characteristics</b>							
$TUE_{TS}$	Total Unadjusted Error				$\pm 1$		$^\circ\text{C}$
<b><math>V_{OUT\_ENn}</math> Output (<math>V_{OUT\_EN}</math> [3:0]) Characteristics</b>							
$V_{VOUT\_ENn}$	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	$\mu\text{A}$
	Output Sinking Current	Strong Pull-Down Enabled, $V_{VOUT\_ENn} = 0.4\text{V}$	●	3	5	8	mA
		Weak Pull-Down Enabled, $V_{VOUT\_ENn} = 0.4\text{V}$	●	<del>33</del>	<del>50</del>	60	$\mu\text{A}$
Output Leakage Current	Internal Pull-Up Disabled, $0\text{V} \leq V_{VOUT\_ENn} \leq 15\text{V}$	●			$\pm 1$	$\mu\text{A}$	
<b><math>V_{OUT\_ENn}</math> Output (<math>V_{OUT\_EN}</math> [7:4]) Characteristics</b>							
$I_{VOUT\_ENn}$	Output Sinking Current	Strong Pull-Down Enabled, $V_{OUT\_ENn} = 0.1\text{V}$	●	<del>8</del>	6	<del>9</del>	mA
	Output Leakage Current	$0\text{V} \leq V_{VOUT\_ENn} \leq 6\text{V}$	●			$\pm 2$	$\mu\text{A}$
<b><math>V_{IN\_EN}</math> Enable Output (<math>V_{IN\_EN}</math>) Characteristics</b>							
$V_{VIN\_EN}$	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	$\mu\text{A}$
	Output Sinking Current	$V_{VIN\_EN} = 0.4\text{V}$	●	3	5	8	mA
	Leakage Current	Internal Pull-Up Disabled, $0\text{V} \leq V_{VIN\_EN} \leq 15\text{V}$	●			$\pm 2$	$\mu\text{A}$
<b>EEPROM Characteristics</b>							
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
<b>Digital Inputs SCL, SDA, CONTROL0, CONTROL1, WDI/RESETB, FAULTB00, FAULTB01, FAULTB10, FAULTB11, WP</b>							
$V_{IH}$	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	●			$\pm 2$	$\mu\text{A}$
		$0\text{V} \leq V_{PIN} \leq V_{DD33} + 0.3\text{V}$ , FAULTB $zn$ , WDI/RESETB, WP Pins Only	●			$\pm 2$	$\mu\text{A}$