ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C, I_{IN} + I_{VZ} = 4mA with V_{IN} Connected to V_Z. (Note 2)

SYMBOL	PARAMETER	CONDITIONS			MIN	TYP	MAX	UNITS
Drain Monitor								
$V_{D,PG(TH)}$	DRAIN Input Threshold for Power Good	DRAIN Falling		●	2	2.05	2.1	V
$\Delta V_{D,PG(HYST)}$	DRAIN Input Hysteresis for Power Good					20		mV
$V_{D,FET(TH)}$	DRAIN Input Threshold for FET Bad Timer and TMR Pull-Up Current (Table 11)	DRAIN Rising, V_{DTH} = 00b – 11b		●			±10	%
$\Delta V_{D,FET(HYST)}$	DRAIN Input Hysteresis with $V_{D,FET(TH)}$					10		mV
I_{DRAIN}	DRAIN Input Current	V_{DRAIN} = 200mV		●		0	±0.1	µA
		V_{DRAIN} = 2 V		●		0	±1	µA
Current Limit								
V_{ILIM}	Current Limit Voltage DAC Zero-Scale	~~ILIM = 0000b, C-Grade (Note 6)~~		●	~~14.7~~	~~15~~	~~15.3~~	~~mV~~
		ILIM = 0000b, I-, H-Grade		●	14.5	15	15.5	mV
	Current Limit Voltage DAC Full-Scale	~~ILIM = 1111b, C-Grade (Note 6)~~		●	~~29.4~~	~~30~~	~~30.6~~	~~mV~~
		ILIM = 1111b, I-, H-Grade		●	29	30	31	mV
	Current Limit Voltage DAC INL			●		0	±50	µV
ΔV_{ILIM}	Current Limit Voltage Mismatch between Channel 1 and Channel 2			●		0	±350	µV
$\alpha_{STARTUP}$	Current Limit Foldback Factor at Startup	RTNS = 1.8V, DRNS = 0, 1.8V	FB = 01b	●	45	50	55	%
			FB = 10b	●	16	20	24	%
			FB = 11b	●	7	10	13	%
α_{NORMAL}	Current Limit Foldback Factor in Normal Operation	RTNS = DRNS = 1.8V	FB = 01b	●	45	50	55	%
			FB = 10b	●	15	20	26	%
			FB = 11b	●	6	10	16	%
$V_{ILIM(FAST)}$	Fast Pull-Down Sense Threshold Voltage	ILIM = 0000b		●	20	30	40	mV
		ILIM = 1111b		●	47	60	70	mV
I_{SENSE^+}	SENSE1,2$^+$ Input Current	SENSE1,2$^+$ = 33mV		●		0	±1	µA
I_{SENSE^-}	SENSE1,2$^-$ Input Current	SENSE1,2$^-$ = SENSE1,2$^+$ = 0		●	–4	–10.5	–15	µA
~~TMR Pin Function~~ Circuit Breaker/SOA Timer								
$I_{TMR(UP)}$	TMR Pull-Up Current in Current Limit							
	Onset	DRNS = 0V, TMR = 1V		●	–1.5	–2	–2.5	µA
	Startup in Foldback	dV/dt Control Disabled, DRNS = 1.8V, TMR = 1V	FB = 00b	●	–192	–202	–212	µA
			FB = 01b	●	–96	–102	–108	µA
			FB = 10b	●	–39	–42	–45	µA
			FB = 11b	●	–20	–22	–24	µA
	Startup in dV/dt	dV/dt Control Enabled, DRNS = 1.8V, TMR = 1V		●	–192	–202	–212	µA
	Hard Short in Normal Operation	DRNS = 1.8V, TMR = 1V		●	–192	–202	–212	µA
$I_{TMR(DN)}$	TMR Pull-Down Current	DRAIN < $V_{D,FET(TH)}$ or Start into dV/dt Control, THERM_TMR = 0, TMR = 1V		●	1.6	2	2.3	µA
$I_{TMR(RST)}$	TMR Reset Current	EN# = High, TMR = 1V		●	3	5	8	mA
$V_{TMRH(TH)}$	TMR Fault Threshold	TMR Rising		●	2.028	2.048	2.068	V
$V_{TMRH(HYST)}$	TMR Fault Hysteresis					20		mV
$V_{TMRL(TH)}$	TMR Low Status Threshold	TMR Falling		●	80	100	120	mV
$V_{TMRL(HYST)}$	TMR Low Hysteresis					20		mV

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C, I_{IN} + I_{VZ} = 4mA with V_{IN} Connected to V_Z. (Note 2)

SYMBOL	PARAMETER	CONDITIONS			MIN	TYP	MAX	UNITS
V_{FS}	Full-Scale Voltage	Single-Ended Inputs				2.048		V
		Differential Inputs				32.768		mV
LSB	LSB Step Voltage	RTNS, ADIN1-4, ADIO1-4, DRNS, DRAIN	ADC = 000b			8		mV
			ADC = 010b			2		mV
			ADC = 100b			0.5		mV
			ADC = 110b			0.125		mV
			ADC = xx1b			0.03125		mV
		$ADC^+ – ADC^–$	ADC = 000b			128		µV
			ADC = 010b			32		µV
			ADC = 100b			8		µV
			ADC = 110b			2		µV
			ADC = xx1b			0.5		µV
		$SENSE1,2^+ – SENSE1,2^–$, ADIN2 – ADIN1, ADIN4 – ADIN3, ADIO2 – ADIO1, ADIO4 – ADIO3	ADC = 000b			256		µV
			ADC = 010b			64		µV
			ADC = 100b			16		µV
			ADC = 110b			4		µV
			ADC = xx1b			1		µV
V_{OS}	Offset Error (Note 7)	Single-Ended Inputs		●		0	±0.125	% V_{FS}
		Differential Inputs		●		0	±0.25	% V_{FS}
INL	Integral Nonlinearity (Note 7)	ADIN1-4, ADIO1-4, RTNS, DRNS, DRAIN, $ADC^+ – ADC^–$		●		±0.01	±0.06	% V_{FS}
		$SENSE1,2^+ – SENSE1,2^–$, ADIN2 – ADIN1, ADIN4 – ADIN3, ADIO2 – ADIO1, ADIO4 – ADIO3		●		±0.02	±0.12	% V_{FS}
FSE	Full-Scale Error (Note 7)	~~Single-Ended Inputs, C-Grade (Note 6)~~		●			~~±0.5~~	~~%~~
		Single-Ended Inputs, I-, H-Grade		●			±0.7	%
		~~Differential Inputs, C-Grade (Note 6)~~		●			~~±1~~	~~%~~
		Differential Inputs, I-, H-Grade		●			±1.2	%
		~~Power, C-Grade (Note 6)~~		●			~~±1~~	~~%~~
		Power, I-, H-Grade		●			~~±1.2~~ ±1.5	%
		Energy		●			±5	%
f_{CONV}	Refresh Rate in Continuous Mode (Table 12)			●			±5	%
I_{ADC^+}	ADC^+ Input Current	ADC^+ = 33mV		●		0	±1	µA
$I_{ADC^–}$	ADC^+ Input Current	$ADC^–$ = ADC^+ = 0		●		–3	–7	µA
$R_{ADIN(SE)}$	ADIN1-4, ADIO1-4 Input Impedance, Single-Ended	V = 3V		●	3			MΩ
$I_{ADIN(SE)}$	ADIN1-4, ADIO1-4 Input Current, Single-Ended	V = 3V		●		0	±1	µA
$I_{ADIN(DIFF)}$	ADIN1, ADIN3, ADIO1, ADIO3 Input Current, Differential Mode	ADIN1, ADIN3, ADIO1, ADIO3 = 0, ADIN2, ADIN4, ADIO2, ADIO4 = 0		●		–3	–7	µA
	ADIN2, ADIN4, ADIO2, ADIO4 Input Current, Differential Mode	ADIN2, ADIN4, ADIO2, ADIO4 = 33mV		●		0	±1	µA