

CHANGE NOTIFICATION



Linear Technology Corporation
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(408) 432-1900

April 16, 2014

Dear Sir/Madam:

PCN# 041614

Subject: Notification of Change to LTC4413-1, LTC4413-2 Datasheet

Please be advised that Linear Technology Corporation has made a minor change to the LTC4413 product datasheet to improve manufacturability. We have changed the upper limit for Enable Input Current to 5uA from 4uA. No other functional or parametric specifications are affected. A redlined datasheet characteristics table is attached. Product shipped after June 17, 2014 will be tested to the new limits.

Should you have any further questions, please feel free to contact me at 408-432-1900 ext. 2077, or by email at JASON.HU@LINEAR.COM. If I do not hear from you by June 17, 2014, we will consider this change to be approved by your company.

Sincerely,

Jason Hu
Quality Assurance Engineer

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$. (Notes 2, 6)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
I_{QROUTB}	Quiescent Current While in Reverse Turn-Off. Current Drawn from V_{OUTA} When $OUTB$ Supplies Chip Power	$V_{INA} = V_{INB} = 0V$, $V_{OUTA} = 3.6V$, $V_{OUTB} = 5.5V$	●	3.5	6.5	μA
I_{QOFF}	Quiescent Current with Both $ENBA$ and $ENBB$ High	$V_{INA} = V_{INB} = 3.6V$, $V_{ENBA} = V_{ENBB} = 1V$	●	28	38	μA
V_{RTO}	Reverse Turn-Off Voltage ($V_{OUT} - V_{IN}$)	$V_{IN} = 3.6V$	●	-5	10	mV
V_{FWD}	Forward Voltage Drop ($V_{IN} - V_{OUT}$) at $I_{OUT} = -1\text{mA}$	$V_{IN} = 3.6V$	●	18	24	mV
R_{FWD}	On-Resistance, R_{FWD} Regulation (Measured as $\Delta V/\Delta I$)	$V_{IN} = 3.6V$, $I_{OUT} = -100\text{mA}$ to -500mA (Note 5)		100	140	$\text{m}\Omega$
R_{ON}	On-Resistance, R_{ON} Regulation (Measured as V/I at $I_{IN} = 1\text{A}$)	$V_{IN} = 3.6V$, $I_{IN} = 1\text{A}$ (Note 5)		140	200	$\text{m}\Omega$
t_{ON}	PowerPath Turn-On Time	$V_{IN} = 3.6V$, from ENB Falling to I_{OUT} Ramp Starting		11		μs
t_{OFF}	PowerPath Turn-Off Time	$V_{IN} = 3.6V$, from ENB Rising with $I_{IN} = 100\text{mA}$ Falling to 0mA		2		μs

Short-Circuit Response

I_{OC}	Current Limit	V_{INA} OR $B = 3.6V$ (Note 5)		1.8		A
I_{QOC}	Quiescent Current While in Overcurrent Operation	V_{INA} OR $B = 3.6V$, $I_{OUT} = 1.8\text{A}$ (Note 5)		100	130	μA

STAT Output

I_{SOFF}	STAT Off Current	Shut Down	●	-1	0	1	μA
I_{SON}	STAT Sink Current	$V_{IN} > V_{OUT}$, $V_{CTL} < V_{IL}$, $T_J < 135^\circ\text{C}$, $I_{OUT} < I_{MAX}$	●	7	11	15	μA
$t_{S(ON)}$	STAT Pin Current Turn-On Time	$V_{IN} = 3.6V$, from ENB Falling			1.8		μs
$t_{S(OFF)}$	STAT Pin Current Turn-Off Time	$V_{IN} = 3.6V$, from ENB Rising			0.8		μs

ENB Inputs

V_{ENBIH}	ENB Inputs Rising Threshold Voltage	V_{ENB} Rising	●	540	600	mV	
V_{ENBIL}	ENB Inputs Falling Threshold Voltage	V_{ENB} Falling	●	400	460	mV	
$V_{ENBHYST}$	ENB Input Hysteresis	$V_{ENBHYST} = (V_{ENBIH} - V_{ENBIL})$		90		mV	
I_{ENB}	ENB Inputs Pull-Down Current	$V_{OUT} < V_{IN} = 3.6V$, $V_{ENB} < V_{IL}$	●	2	3	4	μA

OVI Input (LTC4413-2 Only)

V_{OVIH}	OVI Input Rising Threshold Voltage	V_{OVI} Rising		5.9	6.2	V
V_{OVIL}	OVI Input Falling Threshold Voltage	V_{OVI} Falling		5.4	5.6	V
V_{OVID}	OVI-OVP Voltage Drop	$V_{OVI} = 8V$, No Load at OVP		100		mV
I_{OVI}	OVI Bias Current	$V_{OVI} = 8V$		80		μA

Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

Note 2: The LTC4413-1/LTC4413-2 are guaranteed to meet performance specifications from 0°C to 85°C . Specifications over the -40°C to 85°C operating temperature range are assured by design, characterization and correlation with statistical process controls.

Note 3: Quiescent current increases with diode current: refer to plot of I_{QF} vs I_{OUT} .

Note 4: This IC includes overtemperature protection that is intended to protect the device during momentary overload conditions. Overtemperature protection will become active at a junction temperature greater than the maximum operating temperature. Continuous operation above the specified maximum operating junction temperature may impair device reliability.

Note 5: Specification is guaranteed by correlation to wafer-level measurements.

Note 6: Unless otherwise specified, current into a pin is positive and current out of a pin is negative. All voltages referenced to GND.

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