

## CHANGE NOTIFICATION



Linear Technology Corporation  
1630 McCarthy Blvd., Milpitas, CA 95035-7417  
(408) 432-1900

October 23, 2015

Dear Sir/Madam:

PCN#102315

**Subject: Notification of Change to LT8312 Datasheet**

Please be advised that Linear Technology Corporation has made a minor change to the LT8312 product datasheet to facilitate improvement in our manufacturing yield. The changes are shown on the attached page of the marked up datasheet. There was no change made to the die. The product shipped after December 23, 2015 will be tested to the new limits.

Should you have any further questions or concerns please contact your local Linear Technology Sales person or you may contact me at 408-432-1900 ext. 2077, or by e-mail at [JASON.HU@LINEAR.COM](mailto:JASON.HU@LINEAR.COM). If I do not hear from you by December 23, 2015, 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  $T_A = 25^\circ\text{C}$ .

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Voltage Range		10		38	V
Quiescent Current	$V_{EN/UVLO} = 0.2\text{V}$ Not Switching	45	60 70	70	$\mu\text{A}$ $\mu\text{A}$
$V_{IN}$ Quiescent Current, INTV <sub>CC</sub> Overdriven	$V_{INTVCC} = 11\text{V}$		60		$\mu\text{A}$
$V_{IN}$ Shunt Regulator Voltage	$I = 1\text{mA}$		40		V
$V_{IN}$ Shunt Regulator Current Limit			8		mA
INTV <sub>CC</sub> Quiescent Current	$V_{EN/UVLO} = 0.2\text{V}$ $V_{EN/UVLO} = 1.5\text{V}$ , Not Switching	12.5 1.8	15.5 2.2	17.5 2.7	$\mu\text{A}$ mA
EN/UVLO Pin Threshold	EN/UVLO Pin Voltage Rising	● 1.21	1.25	1.29	V
EN/UVLO Pin Hysteresis Current	EN/UVLO = 1V	8	10	12	$\mu\text{A}$
$V_{REF}$ Voltage	0 $\mu\text{A}$ Load 200 $\mu\text{A}$ Load	● 1.97 ● 1.95	2.0 1.98	2.03 2.03	V V
SENSE Current Limit Threshold		96	102	107	mV
Minimum SENSE Current Limit			3		mV
SENSE Input Bias Current	Current Out of Pin		15		$\mu\text{A}$
Current Sense Blanking Time		90	130	170	ns
FB Voltage		● 1.22	1.25	1.28	V
FB Voltage Line Regulation	$10\text{V} < V_{IN} < 35\text{V}$		0.01	0.03	%/V
FB Pin Bias Current	(Note 3), $\text{FB} = 1.25\text{V}$ , $\text{OVP} = 1.35\text{V}$		100	600	nA
FB Error Amplifier Voltage Gain	$\Delta V_{VO}/\Delta V_{FB}$		180		V/V
FB Error Amplifier Transconductance	$\Delta I = 5\mu\text{A}$		170		$\mu\text{mhos}$
FB Low Detection Voltage			0.1		V
DCM Current Turn-On Threshold	Current Out of Pin		80		$\mu\text{A}$
Maximum Oscillator Frequency			400		kHz
<b>Linear Regulator</b>					
INTV <sub>CC</sub> Regulation Voltage		9.8	10	10.4	V
Dropout ( $V_{IN} - \text{INTV}_{CC}$ )	$I_{\text{INTVCC}} = -10\text{mA}$ , $V_{IN} = 10\text{V}$		500	900	mV
Current Limit	$\text{INTV}_{CC} < 9.5\text{V}$ $\text{INTV}_{CC} > 9.5\text{V}$	17 80	25 120		mA mA
<b>Gate Driver</b>					
$t_r$ GATE Driver Output Rise Time	$C_L = 3300\text{pF}$		18		ns
$t_f$ GATE Driver Output Fall Time	$C_L = 3300\text{pF}$		18		ns
GATE Output Low ( $V_{OL}$ )				0.01	V
GATE Output High ( $V_{OH}$ )				$\text{INTV}_{CC} - 50\text{mV}$	V

Change to 12

**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 LT8312E is guaranteed to meet specified performance from  $0^\circ\text{C}$  to  $125^\circ\text{C}$  junction temperature. Specification over the  $-40^\circ\text{C}$  and  $125^\circ\text{C}$  operating junction temperature range are assured by design, characterization and correlation with statistical process controls. The LT8312I is guaranteed to meet specified performance from  $-40^\circ\text{C}$  to

$125^\circ\text{C}$  operating junction temperature range. The LT8312H is guaranteed to meet performance specifications over the  $-40^\circ\text{C}$  to  $150^\circ\text{C}$  operating junction temperature range. The LT8312MP is guaranteed to meet performance specifications over the  $-55^\circ\text{C}$  to  $150^\circ\text{C}$  operating junction temperature range. High junction temperatures degrade operating lifetimes. Operating lifetime is derated for junction temperatures greater than  $125^\circ\text{C}$ .

**Note 3:** Current flows out of the FB pin.