

## CHANGE NOTIFICATION



Linear Technology Corporation  
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(408) 432-1900

March 16, 2015

Dear Sir/Madam:

PCN# 031615

**Subject: Notification of Change to LT8620 Datasheet**

Please be advised that Linear Technology Corporation has made a minor change to the LT8620 product datasheet to improve the product performance. The change is shown on the attached pages of the marked up datasheet. There was no change in form, fit, function, quality or reliability of the product. The product shipped after May 16, 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 May 16, 2015, we will consider this change to be approved by your company.

Sincerely,

Jason Hu  
Quality Assurance Engineer

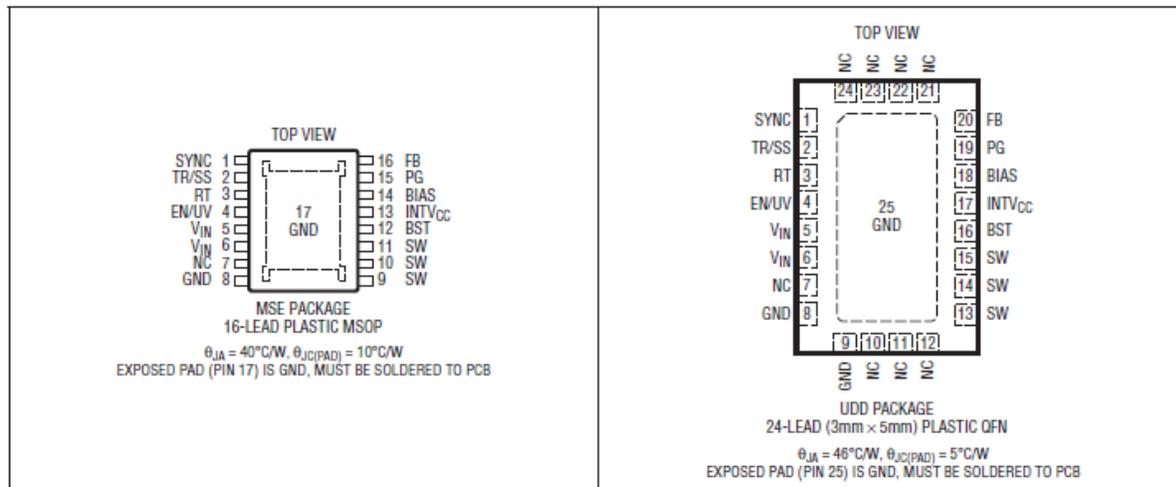
# LT8620

## ABSOLUTE MAXIMUM RATINGS (Note 1)

V <sub>IN</sub> , EN/UV.....	65V	SYNC Voltage .....	6V
PG.....	42V	Operating Junction Temperature Range (Note 2)	
BIAS.....	25V	LT8620E .....	-40 to 125°C
BST Pin Above SW Pin.....	4V	LT8620I .....	-40 to 125°C
FB, TR/SS, RT, INTV <sub>CC</sub> .....	4V	Storage Temperature Range .....	-65 to 150°C

LT8620H.....	-40 to 150°C
LT8620MP.....	-55 to 150°C

## PIN CONFIGURATION



## ORDER INFORMATION

LEAD FREE FINISH	TAPE AND REEL	PART MARKING*	PACKAGE DESCRIPTION	TEMPERATURE RANGE
LT8620EMSE#PBF	LT8620EMSE#TRPBF	8620	16-Lead Plastic MSOP	-40°C to 125°C
LT8620IMSE#PBF	LT8620IMSE#TRPBF	8620	16-Lead Plastic MSOP	-40°C to 125°C
LT8620EUDD#PBF	LT8620EUDD#TRPBF	LGGV	24-Lead (3mm x 5mm) Plastic QFN	-40°C to 125°C
LT8620IUDD#PBF	LT8620IUDD#TRPBF	LGGV	24-Lead (3mm x 5mm) Plastic QFN	-40°C to 125°C

Consult LTC Marketing for parts specified with wider operating temperature ranges. \*The temperature grade is identified by a label on the shipping container. Consult LTC Marketing for information on non-standard lead based finish parts.

For more information on lead free part marking, go to: <http://www.linear.com/leadfree/>

For more information on tape and reel specifications, go to: <http://www.linear.com/tapeandreeel/>

LT8620HMSE#PBF	LT8620HMSE#TRPBF	8620	16-Lead Plastic MSOP	-40°C to 150°C
LT8620MPMSE#PBF	LT8620MPMSE#TRPBF	8620	16-Lead Plastic MSOP	-55°C to 150°C

**ELECTRICAL CHARACTERISTICS** The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T<sub>A</sub> = 25°C.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	
Minimum Input Voltage		●	2.9	3.4	V	
V <sub>IN</sub> Quiescent Current	V <sub>EN/UV</sub> = 0V, V <sub>SYNC</sub> = 0V	●	1.0	3	μA	
		●	1.0	8	μA	
	V <sub>EN/UV</sub> = 2V, Not Switching, V <sub>SYNC</sub> = 0V	●	1.7	4	μA	
		●	1.7	10	μA	
V <sub>IN</sub> Current in Regulation	V <sub>OUT</sub> = 0.97V, V <sub>IN</sub> = 6V, Output Load = 100μA	●	20	50	μA	
	V <sub>OUT</sub> = 0.97V, V <sub>IN</sub> = 6V, Output Load = 1mA	●	200	350	μA	
Feedback Reference Voltage	V <sub>IN</sub> = 6V, I <sub>LOAD</sub> = 0.5A	●	0.964	0.970	0.976	V
	V <sub>IN</sub> = 6V, I <sub>LOAD</sub> = 0.5A	●	0.958	0.970	0.982	V
Feedback Voltage Line Regulation	V <sub>IN</sub> = 4.0V to 42V, I <sub>LOAD</sub> = 0.5A	●	0.004	0.02	%/V	
Feedback Pin Input Current	V <sub>FB</sub> = 1V		-20	20	nA	
INTV <sub>CC</sub> Voltage	I <sub>LOAD</sub> = 0mA, V <sub>BIAS</sub> = 0V		3.23	3.4	3.57	V
	I <sub>LOAD</sub> = 0mA, V <sub>BIAS</sub> = 3.3V		3.25	3.29	3.35	V
INTV <sub>CC</sub> Undervoltage Lockout			2.5	2.6	2.7	V
BIAS Pin Current Consumption	V <sub>BIAS</sub> = 3.3V, I <sub>LOAD</sub> = 1A, 2MHz		7.2		mA	
Minimum On-Time	I <sub>LOAD</sub> = 1A, SYNC = 0V	●	30	45	ns	
	I <sub>LOAD</sub> = 1A, SYNC = 3.3V	●	30	45	ns	
Minimum Off-Time			90	130	ns	
Oscillator Frequency	R <sub>T</sub> = 221k, I <sub>LOAD</sub> = 1A	●	180	210	240	kHz
	R <sub>T</sub> = 60.4k, I <sub>LOAD</sub> = 1A	●	665	700	735	kHz
	R <sub>T</sub> = 18.2k, I <sub>LOAD</sub> = 1A	●	1.85	2.00	2.15	MHz
Top Power NMOS On-Resistance	I <sub>SW</sub> = 1A		175		mΩ	
Top Power NMOS Current Limit		●	2.8	<del>3.8</del> 4.1 4.6 4.9	A	
Bottom Power NMOS On-Resistance	V <sub>INTVCC</sub> = 3.4V, I <sub>SW</sub> = 1A		85		mΩ	
Bottom Power NMOS Current Limit	V <sub>INTVCC</sub> = 3.4V		2.9	<del>3.6</del> 3.9 4.3 4.7	A	
SW Leakage Current	V <sub>IN</sub> = 42V, V <sub>SW</sub> = 0V, 42V		-1.5	1.5	μA	
EN/UV Pin Threshold	EN/UV Rising	●	0.94	1.0	1.06	V
EN/UV Pin Hysteresis			40		mV	
EN/UV Pin Current	V <sub>EN/UV</sub> = 2V		-20	20	nA	
PG Upper Threshold Offset from V <sub>FB</sub>	V <sub>FB</sub> Falling	●	6	9.0	12	%
PG Lower Threshold Offset from V <sub>FB</sub>	V <sub>FB</sub> Rising	●	-6	-9.0	-12	%
PG Hysteresis			1.3		%	
PG Leakage	V <sub>PG</sub> = 3.3V		-40	40	nA	
PG Pull-Down Resistance	V <sub>PG</sub> = 0.1V	●	680	2000	Ω	
SYNC Threshold	SYNC Falling		0.8	1.0	1.2	V
	SYNC Rising		1.1	1.3	1.5	V
SYNC Pin Current	V <sub>SYNC</sub> = 6V		<del>-40</del> -100	40 100	nA	
TR/SS Source Current		●	1.2	<del>1.9</del> 2	<del>2.6</del> 2.7	μA
TR/SS Pull-Down Resistance	Fault Condition, TR/SS = 0.1V		220		Ω	

**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 LT8620E is guaranteed to meet performance specifications from 0°C to 125°C junction temperature. Specifications over the -40°C to 125°C operating junction temperature range are assured by design, characterization, and correlation with statistical process controls. The

LT8620I is guaranteed over the full -40°C to 125°C operating junction temperature range. High junction temperatures degrade operating lifetimes. Operating lifetime is derated at junction temperatures greater than 125°C.

**Note 3:** This IC includes overtemperature protection that is intended to protect the device during overload conditions. Junction temperature will exceed 150°C when overtemperature protection is active. Continuous operation above the specified maximum operating junction temperature will reduce lifetime.

LT8620H is guaranteed over the full -40°C to 150°C operating junction temperature range. The LT8620MP is 100% tested and guaranteed over the full -55°C to 150°C operating junction temperature range.

8620f

