

CHANGE NOTIFICATION



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

April 10, 2015

Dear Sir/Madam:

PCN# 041015

Subject: Notification of Change to LT3954 Datasheet

Please be advised that Linear Technology Corporation has made a minor change to the LT3954 product datasheet to improve manufacturing yield and better center the parametric distribution within specification range. The changes are shown on the attached page of the marked up datasheet. There was no change in form, fit, function, quality or reliability of the product. The product shipped after June 10, 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. If I do not hear from you by June 10, 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 $T_A = 25^\circ\text{C}$. $V_{IN} = 24\text{V}$, $EN/UVLO = 24\text{V}$, $CTRL = 2\text{V}$, $PWM = 5\text{V}$, unless otherwise noted.

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
Linear Regulator						
INTV _{CC} Regulation Voltage	$10\text{V} \leq V_{IN} \leq 40\text{V}$	●	7.60	7.85	8.05	V
INTV _{CC} Maximum Operating Voltage			8.1			V
INTV _{CC} Minimum Operating Voltage					4.5	V
Dropout ($V_{IN} - \text{INTV}_{CC}$)	$I_{\text{INTV}_{CC}} = -10\text{mA}$, $V_{IN} = 7\text{V}$			390		mV
INTV _{CC} Undervoltage Lockout		●	3.9	4.1	4.4	V
INTV _{CC} Current Limit	$8\text{V} \leq V_{IN} \leq 40\text{V}$, $\text{INTV}_{CC} = 6\text{V}$		30	36	42	mA
INTV _{CC} Current in Shutdown	$EN/UVLO = 0\text{V}$, $\text{INTV}_{CC} = 8\text{V}$			8	13	μA
Logic Inputs/Outputs						
EN/UVLO Threshold Voltage Falling		●	1.180	1.220	1.260	V
EN/UVLO Rising Hysteresis				40		mV
EN/UVLO Input Low Voltage	I_{VIN} Drops Below $1\mu\text{A}$				0.4	V
EN/UVLO Pin Bias Current Low	$EN/UVLO = 1.15\text{V}$	●	1.7	2.2	2.7	μA
EN/UVLO Pin Bias Current High	$EN/UVLO = 1.33\text{V}$			10	100	nA
V _{MODE} Output Low	$I_{V\text{MODE}} = 1\text{mA}$				200	mV
V _{MODE} Pin Leakage	$FB = 0\text{V}$, $V\text{MODE} = 12\text{V}$			0.1	5	μA
PWM Pin Signal Generator						
PWM Falling Threshold		●	0.78	0.83	0.88	V
PWM Threshold Hysteresis (V_{PWMHYS})	$I_{\text{DIM/SS}} = 0\mu\text{A}$		0.35	0.47	0.6	V
PWM Pull-Up Current (I_{PWMUP})	$\text{PWM} = 0.7\text{V}$, $I_{\text{DIM/SS}} = 0\mu\text{A}$		6	7.5	9	μA
PWM Pull-Down Current (I_{PWMDN})	$\text{PWM} = 1.5\text{V}$, $I_{\text{DIM/SS}} = 0\mu\text{A}$		68	88	110	μA
PWM Fault-Mode Pull-Down Current	$\text{INTV}_{CC} = 3.6\text{V}$			1.5		mA
PWMOUT Duty Ratio for PWM Signal Generator (Note 5)	$I_{\text{DIM/SS}} = -6.5\mu\text{A}$ $I_{\text{DIM/SS}} = 0\mu\text{A}$ $I_{\text{DIM/SS}} = 21.5\mu\text{A}$ $I_{\text{DIM/SS}} = 52\mu\text{A}$		3.1 6.8 40 95	4.1 6.2 48 96.5	5.2 9.2 56 98	%
PWMOUT Signal Generator Frequency	$\text{PWM} = 47\text{nF}$ to GND, $I_{\text{DIM/SS}} = 0\mu\text{A}$		170	300	390	Hz
PWMOUT Driver						
PWMOUT Driver Output Rise Time (t_r)	$C_L = 560\text{pF}$			35		ns
PWMOUT Driver Output Fall Time (t_f)	$C_L = 560\text{pF}$			35		ns
PWMOUT Output Low (V_{OL})	$\text{PWM} = 0\text{V}$				0.05	V
PWMOUT Output High (V_{OH})			$\text{INTV}_{CC} - 0.05$			V

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: Do not apply a positive or negative voltage or current source to PWMOUT pin, otherwise permanent damage may occur.

Note 3: The LT3954E is guaranteed to meet performance specifications from the 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 LT3954I is guaranteed over the full -40°C to 125°C operating junction temperature range.

Note 4: The LT3954 includes overtemperature protection that is intended to protect the device during momentary overload conditions. Junction temperature will exceed the maximum operating junction temperature when overtemperature protection is active. Continuous operation above the specified maximum junction temperature may impair device reliability.

Note 5: PWMOUT Duty Ratio is calculated:

$$\text{Duty} = I_{\text{PWMUP}} / (I_{\text{PWMUP}} + I_{\text{PWMDN}})$$