ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #20136

Generic Copy

Issue Date: 12-Sep-2013

TITLE: Datasheet update (buck regulator) for NCV78663

PROPOSED FIRST SHIP DATE: 12-Dec-2013 or earlier upon customer agreement and request

AFFECTED CHANGE CATEGORY(S): Device Test

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or your Customer Quality interface

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Not Applicable

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

Update of buck regulator - current regulator section in the NCV78663 datasheet (section 4.11).
This update is done to decouple the variation of buck switch off times due to trimming and due to changing LED voltage.

This FPCN does not include a change of mask version or silicon processing, only an update of test and datasheet limits.

CHANGED PART IDENTIFICATION:

NCV78663DQ0R2G
NCV78663DQ0G

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New datasheet table: (changes are marked in green, old values in strikeout)

Name	Symbol	SPI/OTP SETTING		Min		Typ	Max		Unit
Smallest Toff x VLED constant	Toff_V_1	[0000]	Value on the right represents [VLED * Toff_i] at VLED = 55V and Tj = 155dC	~~10.6~~	9.9	12.4	~~14.1~~	14.9	µs × V
	Toff_V_2	[0001]		~~21.7~~	19.8	24.5	~~27.3~~	29.2	
	Toff_V_3	[0010]		~~41.1~~	39.6	45.9	~~50.7~~	52.2	
	Toff_V_4	[0011]		~~59.6~~	57.0	66.6	~~73.5~~	76.2	
	Toff_V_5	[0100]		~~78.8~~	76.4	88	~~97.2~~	99.6	
	Toff_V_6	[0101]		~~97.9~~	96.2	110	~~122.1~~	123.8	
	Toff_V_7	[0110]		~~116.8~~	116.8	132	~~147.2~~	147.2	
	Toff_V_8	[0111]		~~136.3~~	135.8	154	~~171.7~~	172.2	
Mid range off-time (trimmed @ VLED = 55V)	Toff_V_9	[1000]		~~154.9~~	154.5	176	~~197.1~~	197.5	
	Toff_V_10	[1001]		~~174.2~~	173.2	198	~~221.8~~	222.8	
	Toff_V_11	[1010]		~~192.5~~	191.8	220	~~247.5~~	248.2	
	Toff_V_12	[1011]		~~211.8~~	210.6	242	~~272.3~~	273.4	
	Toff_V_13	[1100]		~~229.7~~	229.1	264	~~298.3~~	298.9	
	Toff_V_14	[1101]		~~248.8~~	248.0	286	~~323.2~~	324.0	
	Toff_V_15	[1110]		~~266.4~~	266.4	308	~~349.6~~	349.6	
Longest off-time	Toff_V_16	[1111]		~~283.3~~	283.8	330	~~376.2~~	376.2	
Off-time = f (VLED)	Toff_V_i		VLED > 5.4V			Toff_i * VLED = CONST			µs × V
			6V < VLED < 55V and Tj is fixed	CONST – 8.5%		Toff_i * VLED = CONST	CONST + 8.5%		µs × V
			10V < VLED < 55V and Tj is fixed	CONST - 7%		Toff_i * VLED = CONST	CONST + 7%		µs × V
			-45dC < Tj < 155dC and VLED is fixed			Toff_i * VLED = CONST +- 4%			µs × V
			1.9V ≤ VLED < 2.6			9			µs
			VLED < 1.9V			63			µs