

# NCV78723MW5 Addendum to NCV78723MW2 Datasheet

## NCV78723-ADD/D

The device NCV78723MW5 is based on NCV78723MW2, with difference that transition into fixed Toff time when VLED < VLED\_LMT is disabled and Toff time is always based on “Toff x VLED = constant”.

There are the following differences between NCV78723MW5 and NCV78723MW2 devices:

- Different behavior when VLED < VLED\_LMT (see detailed description and Table 1 of this addendum)
- Different REVID (see new REVID information in this addendum)
- Different Package marking
- Test hot temperature Thot is 155°C for TC\_VERSION = 0

For the common specification of the parameters for NCV78723MW5 and NCV78723MW2, please refer to the attached datasheet for NCV78723MW2.

Advantages of NCV78723MW5 compared to NCV78723MW2:

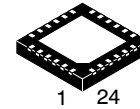
- No transition effects by the matrix switches (current regulation mode does not change)

Disadvantages of NCV78723MW5 compared to NCV78723MW2:

- Toff time can be longer than original fixed Toff time for very low VLED voltage (in situation when zero cross detector does not act sooner)

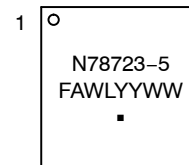
### ADDENDUM

#### PACKAGE PICTURE



QFNW24 5x5 0.65P  
CASE 484AF

#### MARKING DIAGRAM



- N78723 = Specific Device Code
- F = Fab Indicator
- A = Assembly Location
- WL = Wafer Lot
- YY = Year
- WW = Work Week
- = Pb-Free Package

**Table 1. ORDERING INFORMATION**

Device	Marking	Package	Shipping
NCV78723MW5R2G	N78723-5	QFNW24 5 × 5 with Step-Cut Wettable Flank (Pb-Free)	5,000 / Tape & Reel
NCV78723MW5AR2G*	N78723-5	QFNW24 5 × 5 with Step-Cut Wettable Flank (Pb-Free)	5,000 / Tape & Reel
NCV78723MW5BR2G*	N78723-5	QFNW24 5 × 5 with Step-Cut Wettable Flank (Pb-Free)	5,000 / Tape & Reel

\*Devices NCV78723MW5A and NCV78723MW5B have optimized quiescent current from M3V regulator in off mode.

## NCV78723-ADD/D

### Transition into fixed Toff time disabled when VLED < VLED\_LMT

On NCV78723MW5 fixed Toff time regulation is disabled for  $VLED < VLED\_LMT$  and Toff time is always based on “Toff x VLED = constant”. However Toff time can be terminated sooner by zero cross detector when current drops to zero.

The accuracy of Toff generation in new region is defined in this addendum:

**Table 2. BUCK PARAMETRIC INFORMATION**

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
TOFF time relative error (Notes 1, 2)	TOFF_ERR		-20		20	%

1.  $TC = Toff * VLED @ 1 V < VLED < 1.8 V$ .

2. TOFF\_ERR for  $VLED < 1 V$  can't be guaranteed.

The short detection feedback to the SPI registers is kept the same as on NCV78723MW2 device. When the VLED voltage drops below the VLED\_LMT minimum threshold (typical 1.8 V), the SHORTLEDx flag is set.

### New REVID

REVID[7:0] for NCV78723MW5 device is 15hex (723 = 0, Full Mask Version = 2, N78723 - 2 = 1, Metal Tune = 1)

### Test hot temperature $T_{hot}$ is 155°C for TC\_VERSION = 0

TC\_VERSION register (Bit 0 – ADDR\_0x1D) on NCV78723MW5 device is 0. Testing hot temperature  $T_{hot}$  is 155°C instead of 125°C. This delta in  $T_{hot}$  temperatures can slightly affect final current accuracy. See chapter “SW Compensation of the Buck Current Accuracy” in datasheet for original values.

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