8-Bit Microcontroller

TM57 系列

Power on notes for some TM57 series IC

Application Note

tenx reserves the right to change or discontinue this product without notice.

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CONTENTS

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PRODUCT NAME

TM57PE11 version A (TM57PE11A needn't care this issue) (note*)

TM57PA20/40 version X   (TM57PA20/40 version W needn't care this issue)

TM57PA10 version B   (TM57PA10A needn't care this issue)

TM57PE10 version A   (TM57PE10 version B needn't care this issue)

TM57PE12 version A   (TM57PE12 version B needn't care this issue)

TM57FA40 version D

Note:
   * "TM57PE11 version A" and TM57PE11A naming are different, but both ones functions are compatible. "TM57PE11 version A" can be replaced with TM57PE11A.

TITLE

Power on notes for some TM57 series IC

APPLICATION NOTE

1. Generally, the LVR of TM57 series provides two LVR voltages to meet the needs of product designs. In the case of TM57PE12 LVR, one is lower level (1.5V), another is higher level (2.3V). According to actual design requirements, user can configure anyone LV reset mode via SYSCFG[11:10], as below table.

System Configuration Register (SYSCFG)

11-10	**LVR**: LV Reset Mode	
	11	LVR threshold is 1.5V, always enable
	10	LVR threshold is 1.5V, disable in sleep mode
	01	LVR threshold is 2.3V, always enable
	00	LVR disable

2. The LVR is designed for low power application and high performance characteristics. It typically consumes less than 1uA @3V. No matter the LVR is disable or enable, User need to be careful of some detail to let LVR work well when power up as below.

2-1. Consider to the power line noise or the adverse circumstances, and base on TM57 LVR low power feature, user configures LVR enable is recommended.

2-2. Refer to below figure, T= Req * Ceq, T constant time should be less than 20usec.
   Where Req is equivalent resistance, usually are power source internal resistances, power line parasitic resistance⋯etc. Where Ceq is equivalent capacitor, usually are bypass cap, regulated cap, decupling cap⋯etc.

2-3. VDD power up form 0v to configured LVR level, the rising time should be less than 200usec.

2-4. VDD power off voltage should be discharged to small than 0.2v to make sure next time power on reset work well. (Refer to below figure)

AC/DC Power

Req

T=Req*Ceq

Req, Ceq example:
1. 3.3ohm, 4.7uF
2. 10ohm, 1uF

Ceq

VDD

TM57xx

VSS

VDD

Configured LVR level

0.2v

VSS

200u