TOSHIBA
Leading Innovation

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Product Types
TOSHIBA Microcontroller TX00, TX03 Series
TMPM037 TMPM375 TMPM395

Notes on the MCU Startup in Single-boot Mode

With regard to TOSHIBA microcontrollers listed above, please be advised that the MCU starts up in single-boot mode under the following condition. If you need any further information, please contact your local Toshiba sales representative.

1. Problem

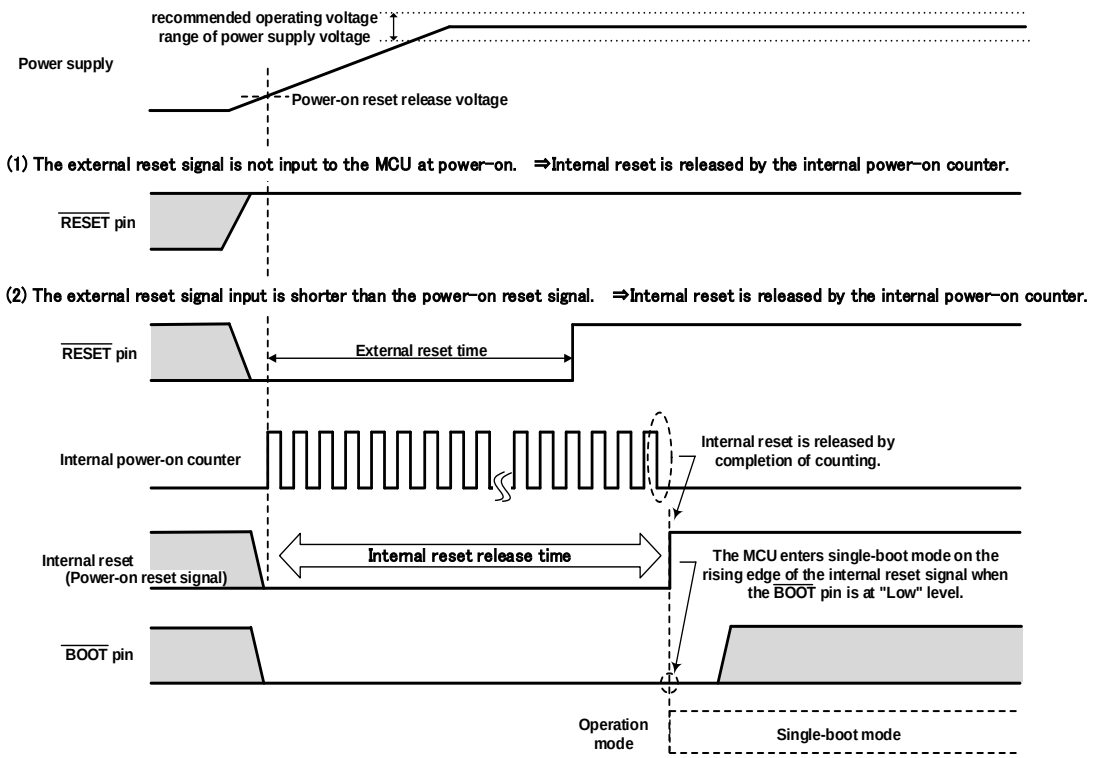
The MCUs listed above start up in single boot mode at power-on.

2. Conditions

(1) The external reset signal is not input to the MCU at power-on.
(2) The external reset signal input is shorter than the power-on reset signal.

If the $\overline{\text{BOOT}}$ pin is “Low” level, the MCU starts up in single-boot mode.

【Boot-up timing】



【Releasing time for the internal reset】

Product	TMPM037	TMPM375	TMPM395
Releasing time for the internal reset	Approximately 1.8 ms	Approximately 3.2 ms	Approximately 826.6 us

Note: A releasing time for the internal reset slightly varies depending on the slope of the rising voltage, or other factors. Provide enough margin for the external reset time.

3． Workaround

Following is the workaround to avoid the MCU starting up in single mode:

・ Workaround : The $\overline{\text{BOOT}}$ pin must be at“High” level at power-on until reset release operation is completed.

Since the $\overline{\text{BOOT}}$ pin of the listed MCUs is a shared pin with the other functions shown as table below, use it as the $\overline{\text{BOOT}}$ dedicated pin or give special consideration to the design of the pin at power-on state if the $\overline{\text{BOOT}}$ pin is used as a shared pin.

<Shared functions of the $\overline{\text{BOOT}}$ pin>

Product	TMPM037	TMPM375	TMPM395
Port name	PB0	PF0	PH0
Shared function (1)	$\overline{\text{BOOT}}$pin	$\overline{\text{BOOT}}$pin	$\overline{\text{BOOT}}$pin
Shared function (2)	Port (Input/output)	Port (Input/output)	Port (Input/output)
Shared function (3) (Peripheral IPs)	-	・ TB7IN (Input) ・ SO0/SDA0 (Output, Input/output) ・ TXD1 (Output) ・ INTC (Input)	・ TB0IN0 (Input)