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H8/300H Tiny Series

Power-On Reset Operation using External Circuit

Introduction

A reset circuit consisting of a resistor, capacitor and diode is connected externally to perform power-on reset operation.

Target Device

H8/3687

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1. Specifications

A reset circuit (RC diode circuit) consisting of a resistor, capacitor and diode is connected to the H8/3687 externally to perform power-on reset operation. Figure 1.1 shows an example of connecting an external RC diode circuit.

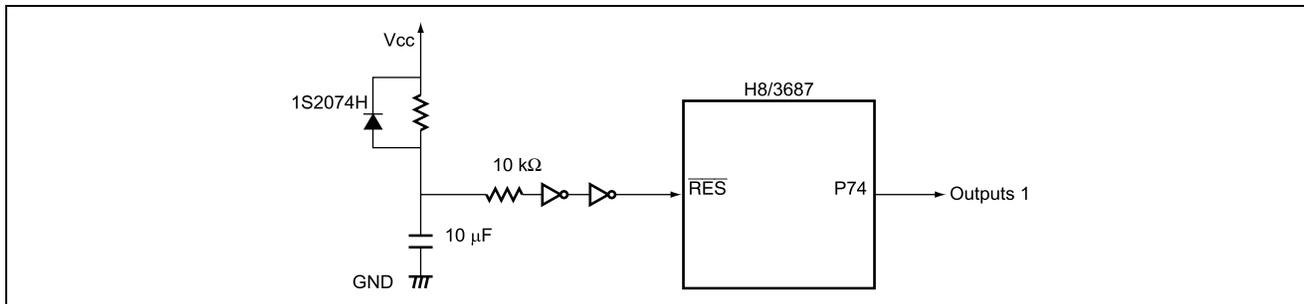


Figure 1.1 Microcomputer connections when using an external RC diode circuit

2. Description of Functions

In this sample task, an RC diode circuit is connected to the H8/3687 to perform power-on reset operation. Figure 2.1 is a block diagram of the RC diode circuit and H8/3687. Below the H8/3687 block diagram is described.

- Port data register 7 (PDR7)
P74 of port 7 is set to 1 in order to confirm reset cancellation.
- Port control register 7 (PCR7)
Sets P74 of port 7 to function as an output pin.

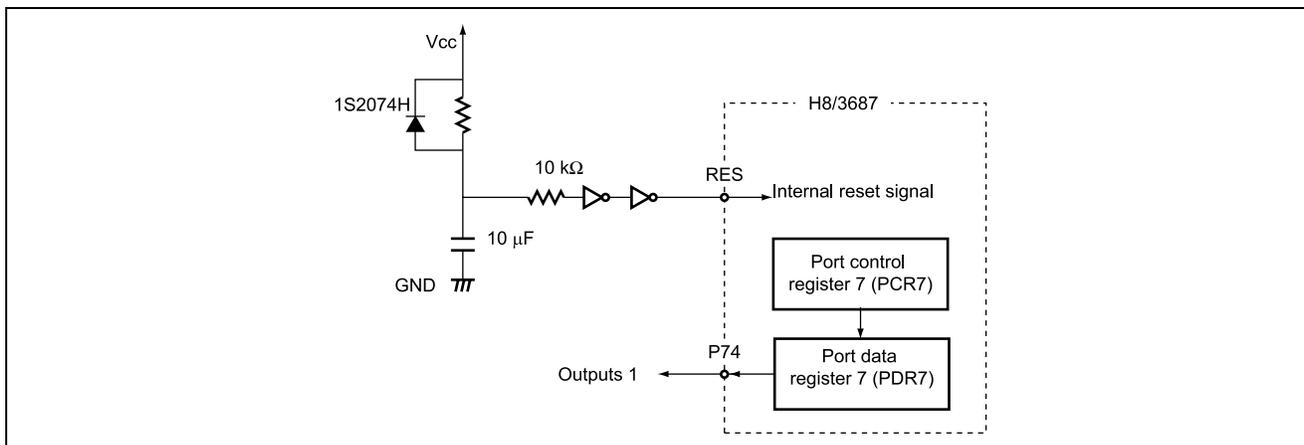


Figure 2.1 Block diagram of RC diode circuit and H8/3687

3. Description of Operation

Power-on reset operation by the RC diode circuit is illustrated in figure 3.1.

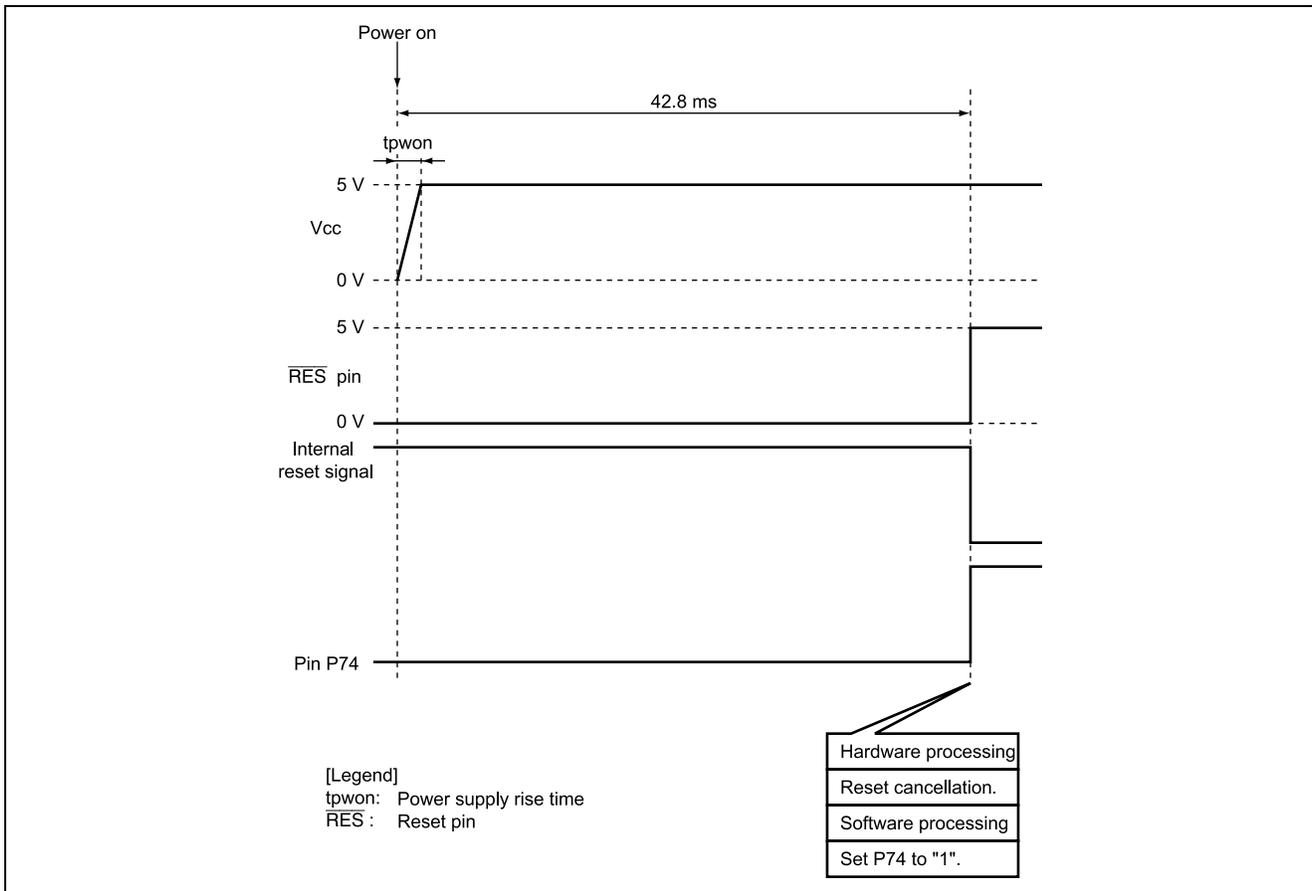


Figure 3.1 Description of operation

4. Description of Software

4.1 Description of module

The module used in this sample task is described in table 1.

Table 4.1 Description of module

Module name	Label name	Function
Main routine	main	Output 1 from pin P74

4.2 Description of arguments

In this sample task, no arguments are used.

4.3 Description of internal registers used

The internal registers used in this sample task are described below.

- PDR7 Port data register 7 Address: 0xFFDA

Bit	Bit name	Setting	Description
4	P74	1	Port data register 74 P74 = 0: Pin P74 output level Low P74 = 1: Pin P74 output level High

- PCR7 Port control register 7 Address: 0xFFEA

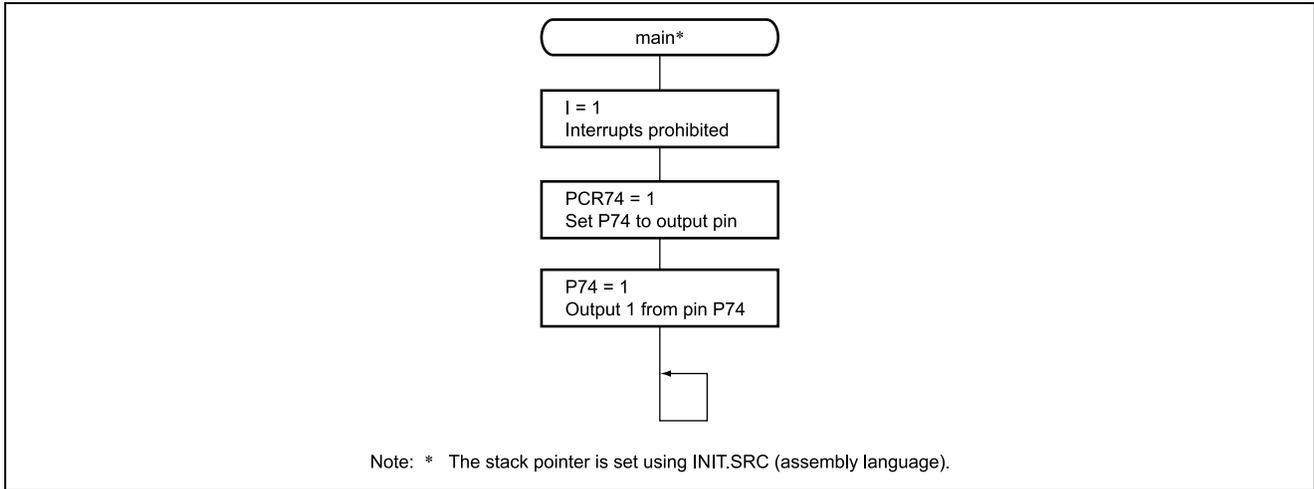
Bit	Bit name	Setting	Description
4	PCR74	1	Port control register 74 PCR74 = 0: Set pin P74 as P74 input pin PCR74 = 1: Set pin P74 as P74 output pin

4.4 Description of RAM used

In this sample task, RAM is not used.

5. Flowcharts

Main routine



6. Program Listing

```

/*****
/*
/* H8/300HN Series -H8/3687-
/* Application Note
/*
/* Function
/* : reset ◆◆◆◆
/*
/* External Clock : 16MHz
/* Internal Clock : 16MHz
/* Sub Clock      : 32.768kHz
/*
/*****

#include <machine.h>

/*****
/* Symbol Definition
/*****

struct BIT {
    unsigned char  b7:1;      /* bit7 */
    unsigned char  b6:1;      /* bit6 */
    unsigned char  b5:1;      /* bit5 */
    unsigned char  b4:1;      /* bit4 */
    unsigned char  b3:1;      /* bit3 */
    unsigned char  b2:1;      /* bit2 */
    unsigned char  b1:1;      /* bit1 */
    unsigned char  b0:1;      /* bit0 */
};

#define PDR7_BIT      (*(struct BIT *)0xPFDA)      /* Port Data Register 7
#define P74            PDR7_BIT.b4                /* Port Data Register 7 bit4
#define PCR7_BIT      (*(struct BIT *)0xPFEA)      /* Port Control Register 7
#define PCR74         PCR7_BIT.b4                /* Port Control Register 7 bit4
/*****
/* Function define
/*****

extern void INIT ( void );      /* SP Set
void main ( void );

/*****
/* Vector Address
/*****

#pragma section V1              /* VECTOR SECTOIN SET
void (*const VEC_TBL1[])(void) = {
    INIT                          /* 00 Reset
};

#pragma section                  /* P

```

```
/*-----*/  
/* Main Program */  
/*-----*/  
void main ( void )  
{  
    PCR74 = 1;  
    P74 = 1;  
    while(1);  
}
```

Link address specifications

Section Name	Address
CV1	0x0000
P	0x0100

Revision Record

Rev.	Date	Description	
		Page	Summary
1.00	Sep.29.03	—	First edition issued

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