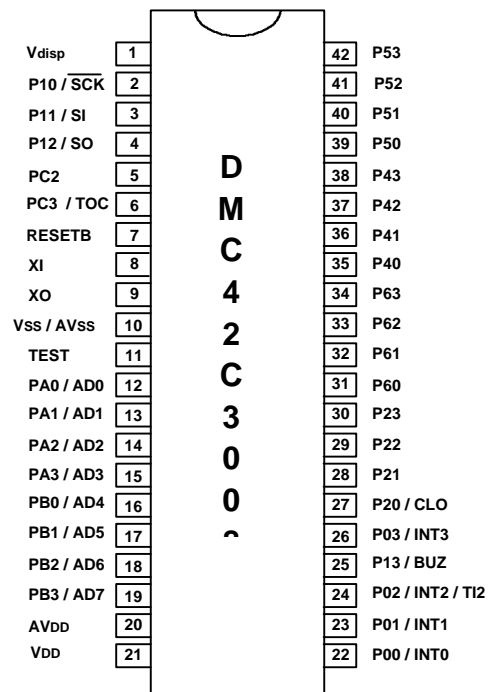


## DESCRIPTION

The DMC42C3008 is a 4-bit single chip microcomputer having 8K bytes ROM and is designed with CMOS silicon gate technology. The DMC42C3008 includes such peripherals as various timers, A/D converter, serial communication interface, on-chip oscillator and clock circuitry. It also comes with high-voltage I/O pins that can directly drive a fluorescent display.

The high performance CPU and internal peripherals allow flexible & cost effective system design in industrial and home appliances. AND the OTP device (42P3008) can shorten system development periods and help the process for software debugging.

## PIN CONFIGURATION



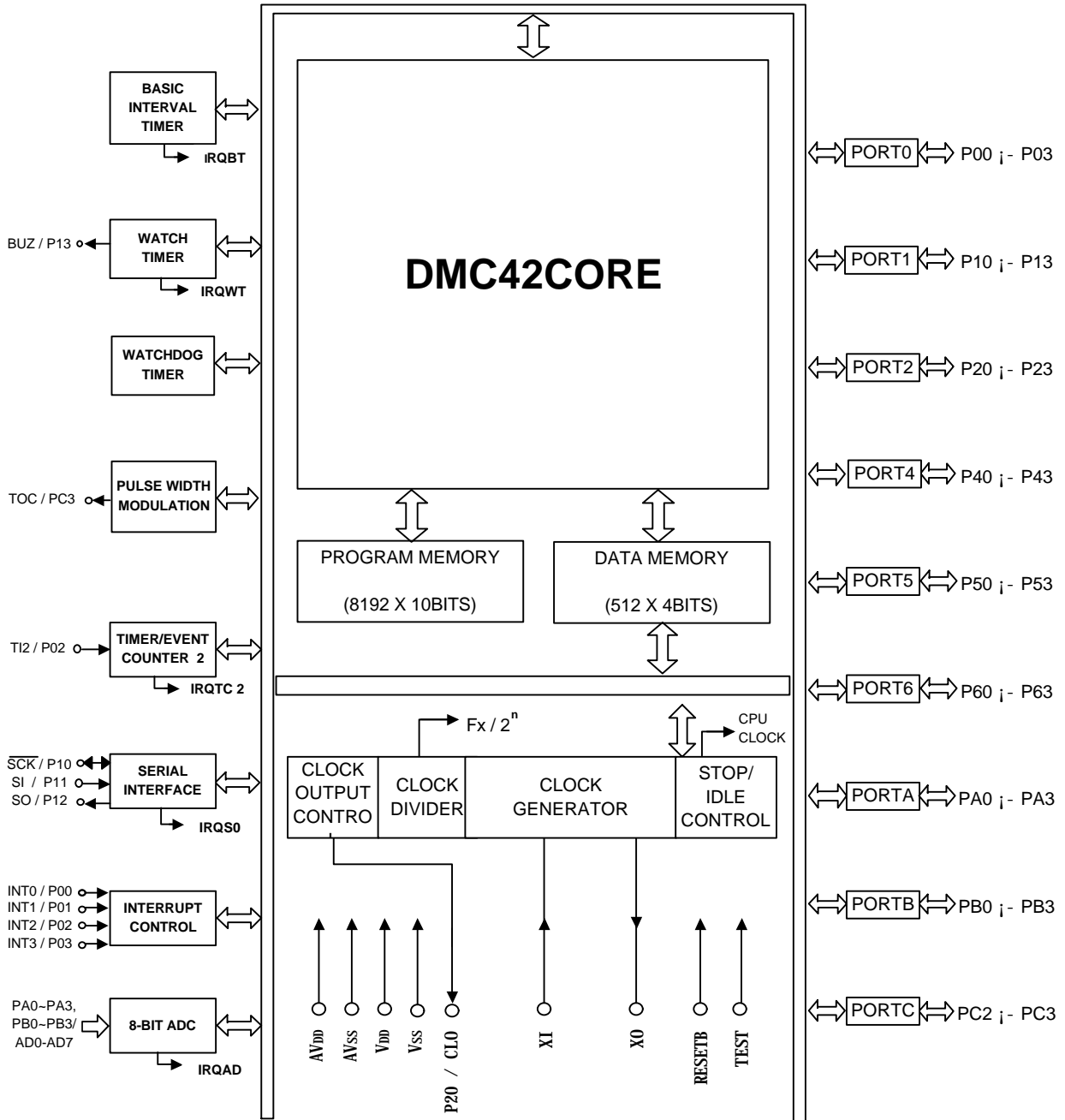
## FEATURES

- Memory mapped I/O
- Program memory : 8192 x 10bits
- Data memory : 512 x 4bits
- Instructions
  - Various bit manipulation
  - 8-bit data operation
  - 7-bit relative branch
  - 1 byte absolute call
- Instruction cycle times
  - Main (  $XI = 4.19\text{MHz}$  )
    - . 15.3 us (  $XI/64 = 65.5\text{KHz}$  )
    - . 1.91 us (  $XI/8 = 524.0\text{KHz}$  )
    - . 0.95 us (  $XI/4 = 1.05\text{MHz}$  )
- 4 Register Bank
- General register : 8 x 4-bit respectively
- Accumulator
  - Bit Accumulator (CY), 4 bit Accumulator (A), 8 bit Accumulator (XA)
- Multiple vectored interrupt source
  - External interrupt : 4
  - Internal interrupt : 6
- Watch timer(at 4.19MHz)
  - fast mode : 3.91 msec
  - normal mode : 0.5 sec
  - buzzer output : 1, 2, 4 KHz
- Basic interval timer
  - 8 kinds of period
  - Used stabilization wait timer to wake up Stop mode
- One 8-bit timer / event counter
- Watchdog timer
  - 4 kinds of period
- PWM
  - 14 bit PWM output X 1ch
- 8-bit serial communication interface
  - External / Internal clock selection
  - Mode : Transmit, Receive  
Receive only  
Clock continuous
- 8-bit A/D converter
  - 8-bit successive approximate type
  - 8 channels
  - Sample and hold
  - Conversion time : 17.1us at 4.19MHz
- 34 I/O Pins
  - CMOS Pins : 13
  - High voltage Pins : 21
  - Internal pull-up resistor ( Mask option )
  - Internal pull-down resistor ( Mask option )
- Power saving mode
  - STOP : Main clock, CPU clock stop
  - STBY : Only CPU clock stop  
Main clock operation
- Operating voltage range
  - $V_{DD} = 5V \pm 10\%$
  - $V_{disp} = V_{DD} - 40V$
- Package : 42 SDIP

## APPLICATION

Microwave Oven, Home Appliances

**BLOCK DIAGRAM**



## PROGRAM MEMORY (ROM)

CONTENTS	
0000H	VECTOR ADDRESS AREA
001FH	
0020H	ZERO-PAGE CALL AREA
002FH	
0060H	
	<b>8K Byte</b>
1FFFH	

## VECTOR ADDRESS

Priority	INTERRUPT SOURCE		
0000H	0	RESET	Reset Signal
0002H	1	IRQBT	Basic Interval Timer
0004H	2	IRQ0	External interrupt 0
0006H	3	IRQ1	External interrupt 1
0008H			
000AH			
000CH	6	IRQ2	External interrupt 2
000EH	7	IRQTC2	Timer Event Counter 2
0010H	8	IRQ3	External interrupt 3
0012H	9	IRQS0	Serial I/O 0
0014H	10	IRQAD	8 bit ADC
0016H			
0018H	12	IRQWT	Watch Timer
001AH	13	IRQKS	Key Scan
001CH			
001EH	15	-	reserved

## DATA MEMORY (RAM)

	DIRECT m	INDIRECT			STACK	GENERAL REGISTER	
		@HL	@DE	@DL		RB=0 RB=2	RB=1 RB=4
\$00 PAGE0 (256 Byte)			MP=0		SPS=0		
\$FF \$00 PAGE1 (256 Byte)	MB=0	MB=0	MP=1		SPS=1		
BANK 0 (1K) \$FF \$00 PAGE2 (256 Byte)			MP=2		SPS=2		
\$FF \$00 PAGE3 (256 Byte)	I/O MEMORY		MP=3				
\$FF							

; Usable

## I/O ADDRESS MAP

ADDRESS	Hardware Module Name				R/W	Addressing Unit			REMARKS	INITIAL VALUE
	b3	b2	b1	b0		1 bit	4 bit	8bit		
318H	Stack pointer low (SPL)				R/W			O	Stack pointer low	E
319H	Stack pointer high (SPH)				R/W			O	stack pointer high	F
31AH	SP3	SP2	SP1	SP0	R/W			O	Stack Page Select Low (SPSL)	0
31BH	-	-	SP5	SP4	R/W			O	Stack Page Select High (SPSh)	0
31CH	AC		IS1	IS0	R/W	O	O	O	Psw low (PSWL)	0
31DH	CY	Z	OV	T					Psw high (PSWH)	0
32CH	T/E counter mode register 2				W	32CH.3			clock source select. counter start (ch2)	00
32DH	(TMOD2)									
32EH	T/E counter register 2				R				readable count value (ch2)	00
32FH	(TMCNT2)									
330H	T/E reference register 2				W				count reference register (ch2)	FF
331H	(TMREF2)									
332H	Basic Timer mode register(BMOD)				R/W	332H.3			clock select, Bit start	0
334H	Basic interval timer count				R				readable count register	00
335H	register(BITCNT)									
336H	Watch timer mode register				R/W	336H.3			clock/buzzer select. bit3 readable	00
337H	(WMOD)									
338H	Watch dog timer mode register				W				clock source sel. timer EN/DIS	00
339H				WDTF	R				WDT flag	0
340H	Pwm mode register0(PWMOD0)				R/W				6.14bit pwm counter EN/DIS	0
342H	Pwm0 data register high				W			O	14bit pwm data register high	00
343H	(PWMODH)									
344H	Pwm0 data register low				W			O	14bit pwm data register low	00
345H	(PWMODL)									
354H	PWM3	PWM2	PWM1	PWM0	W			O	pwm output enable mode register (PWM0 = 14bit)	00
355H		PWM6	PWM5	PWM4						
386H	Adc8 mode register (ADCM8)				R/W	386H.3			analog input pin select. start & low 4bit readable	00
387H										
388H	Adc8 output latch (ADCOL8)				R			O	8bit conversion data	00
389H										
3A0H	Power control register				R/W			O	system clock select, idle, stop mode	00
3A2H	(PCON)									
3A2H	Operating mode register (SCMOD)				R/W	O			main/sub system clock select	0
3A4H	Clock output mode register				W			O	cpu clock output select, clock out EN/DIS	00
3A8H	(CLOMD)									
3A8H	Serial interface mode register0				W	3A8H.3			receive/transmit mode. clock select	00
3A9H	(SIOM0)									
3AAH	Serial interface buffer0				R/W				serial shift register 0	XX
3ABH	(SBUFF0)									
3B2H	Power on flag (PONF)				P/W	3B2H.0			power on reset flag	0
3C2H	IME				R/W	3C2H.3			Interrupt priority select, IME flag.	00
3C3H	IPSR3	IPSR2	IPSR1	IPSR0						

## 4Bit Single Chip Microcontroller

DMC42C3008

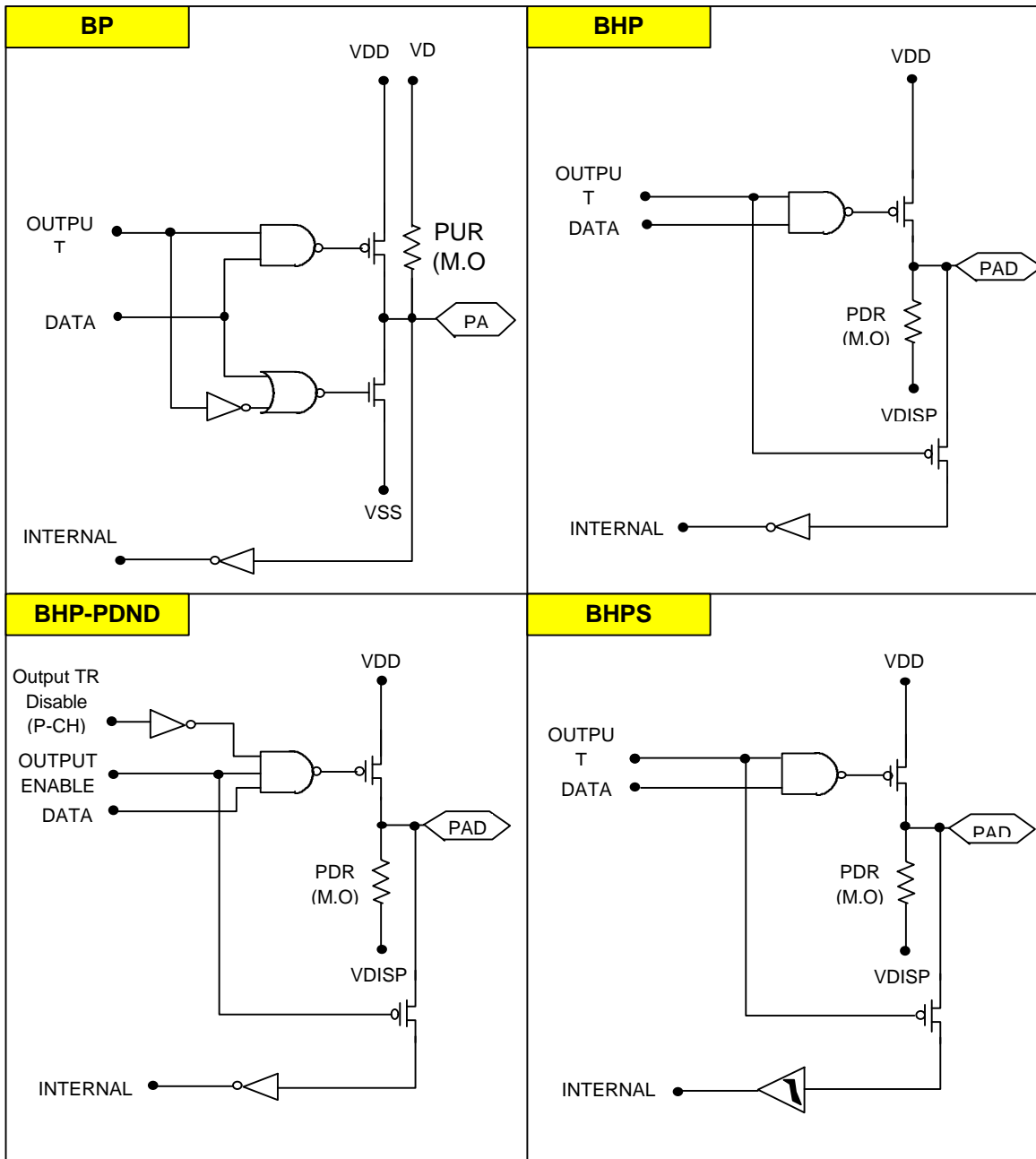
ADDRESS	Hardware Module Name				R/W	Addressing Unit			REMARKS	INITIAL VALUE
	b3	b2	b1	b0		1 bit	4 bit	8bit		
3C4H	External interrupt mode register0 (IMOD0)				W		O		external interrupt 0 edge detection	00
3C5H	External interrupt mode register1 (IMOD1)				W		O		external interrupt 1 edge detection	00
3C6H	External interrupt mode register2 (IMOD2)				W		O		external interrupt 2 edge detection	00
3C7H	External interrupt mode register3 (IMOD3)				W		O		external interrupt 3 edge detection	00
3D8H	IE2	IRQ2	IEBT	IRQBT	R/W	O	O		Interrupt EN/IRQ flag	0
3D9H	IEAD8	IRQAD8	IEWT	IRQWT	R/W	O	O		Interrupt EN/IRQ flag	0
3DAH			IES0	IRQS0	R/W	O	O		Interrupt EN/IRQ flag	0
3DBH					R/W	O	O		Interrupt EN/IRQ flag	0
3DCH	IE1	IRQ1	IE0	IRQ0	R/W	O	O		Interrupt EN/IRQ flag	0
3DDH	IETC2	IRQTC2			R/W	O	O		Interrupt EN/IRQ flag	0
3DEH			IE3	IRQ3	R/W	O	O		Interrupt EN/IRQ flag	0
3E0H	PW03	PW02	PW01	PW00	W			O	port 0, 1 mode register (PMGA)	00
3E1H	PW13	PW12	PW11	PW10						
3E2H	PW23	PW22	PW21	PW20	W			O	port 2, 3 mode register (PMGB)	00
3E3H	PW33	PW32	PW31	PW30						
3E4H	PW43	PW42	PW41	PW40	W			O	port 4, 5 mode register (PMGC)	00
3E5H	PW53	PW52	PW51	PW50						
3E6H	PW63	PW62	PW61	PW60	W			O	port 6, 7 mode register (PMGD)	00
3E7H	PW73	PW72	PW71	PW70						
3EAH	PWA3	PWA2	PWA1	PWA0	W			O	port a, b mode register (PMGF)	00
3EBH	PWB3	PWB2	PWB1	PWB0						
3ECH	PWC3	PWC2	PWC1	PWC0	W			O	port c, d mode register (PMGG)	00
3EDH	PWD3	PWD2	PWD1	PWD0						
3F0H	PORT0 (R0)				R/W	O	O		R0 Port Data Register	0
3F1H	PORT1 (R1)				R/W	O	O		R1 Port Data Register	0
3F2H	PORT2 (R2)				R/W	O	O		R2 Port Data Register	0
3F4H	PORT4 (R4)				R/W	O	O	O	R4 Port Data Register	0
3F5H	PORT5 (R5)				R/W	O	O		R5 Port Data Register	0
3F6H	PORT6 (R6)				R/W	O	O		R6 Port Data Register	0
3FAH	PORTA (RA)				R/W	O	O		RA Port Data Register	0
3FBH	PORTB (RB)				R/W	O	O		RB Port Data Register	0
3FCH	PORTC (RC)				R/W	O	O	O	RC Port Data Register	0

## PIN DESCRIPTION

PIN SYMBOL	SHARED PIN	I/O	FUNCTION	RESET	PORT TYPE
P00 P01 P02 P03	INT0 INT1 INT2/TI2 INT3	I/O	4-BIT I/O HIGH VOLTAGE PORT PORT 0		BHPS
P10 P11 P12 P13	SCK SI SO BUZ	I/O	4-BIT I/O PORT PORT 1 ( P13 HIGH VOLTAGE PIN )		BP BHP
P20 P21~ P23 P4 P5 P6	CLO - - -	I/O	4-BIT I/O HIGH VOLTAGE PORT PORT 2 4-BIT I/O HIGH VOLTAGE PORT. PORT4 4-BIT I/O HIGH VOLTAGE PORT. PORT5 4-BIT I/O HIGH VOLTAGE PORT. PORT6		BHP BHP BHP-PDND
PA PB PC2 PC3	AD0~AD3 AD4~AD7 - TOC		4-BIT I/O PORT. PORTA 4-BIT I/O PORT. PORTB 2-BIT I/O PORT. PORTC		BP BP BP
INT0 INT1 INT2/TI2 INT3	P00 P01 P02 P03	I	External interrupt input port rising/falling edge detection Event pulse input port for the timer/event counters	INPUT	BHPS
SCK SI SO BUZ CLO TOC	P10 P11 P12 P13 P20 PC3	I/O I O O O	Serial clock in/out port Serial data input port Serial data output port Buzzer output port Clock output port PWM output port		BP BHP BHP BP
Key scan AD0~AD3 AD4~AD7	P4-P5 PA PB	I I	4, 6, 8 bits Key scan input selectable Analog input for the 8-bit A/D converter		BHP BP
XI X	- -	I O	XI, XO are the input and output, resp- ectively, of an inverting amplifier. The pins can be configured for use as an on-chip oscillator.		BIN BOU
RESETB TEST	- -	I I	Reset input pin Normally connect to VSS		BIN BIN
V <sub>disp</sub>	-		Used as a high-voltage output power supply pin.		
AVDD, AVSS VDD, VSS	- -		Power & ground for the A/D converter Power & ground		

\* Note ) P4, P5 : 8-bit operation possible

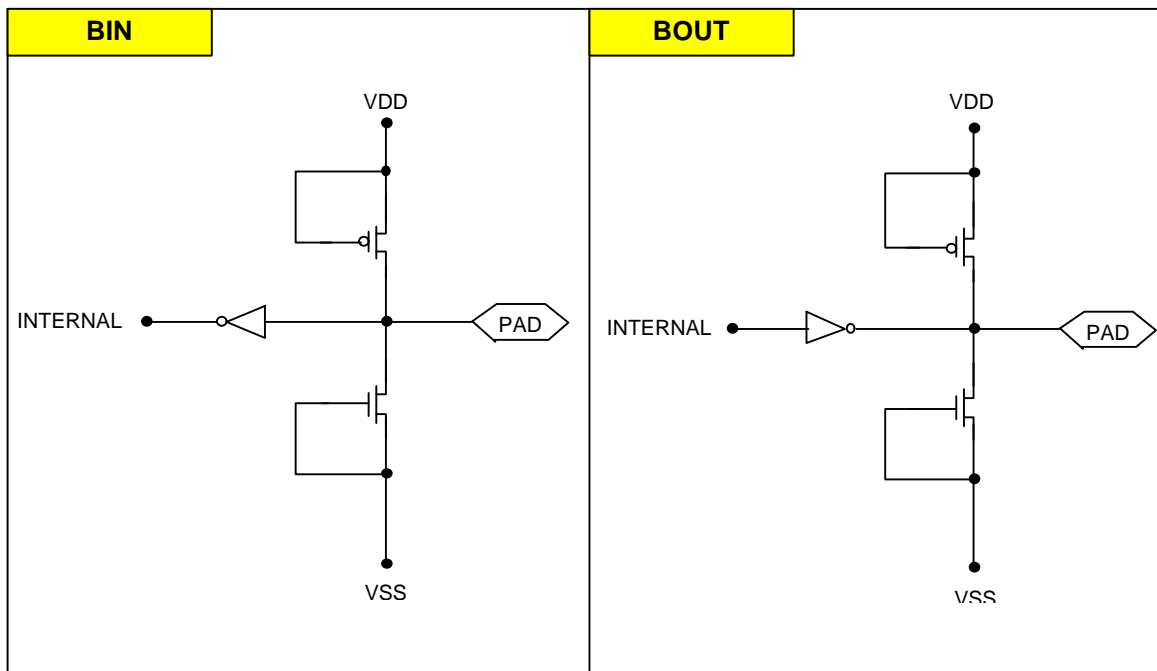
## I/O CIRCUITS



NOTE) PDR : Pull-Down Resistor  
 PUR : Pull-Up Resistor  
 M.O : Mask Option



## I/O CIRCUITS



**ABSOLUTE MAXIMUM RATINGS**

(TA = 0°C to 70°C, VDD = 5V ±10%, fX = 4.19MHz)

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
Supply Voltage	VDD		-0.3 to + 6.0	V
Programming Voltage	VPP	Note 1	-0.3 to 13.0	V
Pin Voltage	VT	Note 2	-0.3 to VDD+0.3	V
		Note 3	VDD-45 to VDD+0.3	
Total Permissible Input Current	$\sum I_{IO}$	Note 4	70	mA
Total Permissible Output Current	$-\sum I_{IO}$	Note 5	150	mA
Maximum Input Current	IO	Note 6, 7	4	mA
		Note 6, 8	20	
Maximum Output Current	-IO	Note 9, 10	4	mA
		Note 10, 11	30	
Operating Temperature	TA		-40 to +85	°C
Storage Temperature	Tstg		-55 to +125	°C
Vdisp Voltage	Vdisp	Note 12	VDD - 40	V

Notes : Permanent damage may occur if these absolute maximum rating are exceeded. Normal operation must be under the conditions stated in the electrical characteristics tables. If these conditions are exceeded, the LSI may malfunction or its reliability may be affected.

1. Applies to pin AVDD ( VPP ) of DMC42P3008.
2. Applies to all standard voltage pins.
3. Applies to all high voltage pins.
4. The total permissible input current is the total input currents simultaneously flowing in from all I/O pins to Vss.
5. The total permissible output current is the total output currents simultaneously flowing out from VDD to all I/O pins.
6. The maximum input current is the maximum current flowing from each I/O pin to Vss.
7. Applies to ports PA, PB.
8. Applies to ports P1, PC.2, PC.3.
9. Applies to ports P1, PA, PB, PC.2, PC.3.
10. The maximum output current is the maximum current flowing from VDD to each I/O pin.
11. Applies to ports P0, P1.3, P2, P4, P5 and P6.
12. The maximum applied voltage is VDD - 40V.

## DC ELECTRICAL CHARACTERISTICS

(V<sub>SS</sub> = 0, V<sub>DD</sub> = 5V ±10%, T<sub>A</sub> = 25°C, f<sub>x</sub> = 4.19MHz)

PARAMETER	SYMBOL	TEST CONDITION		LIMIT			UNIT	NOT
				MIN.	TYP.	MAX.		
Supply Voltage	V <sub>DD</sub>	V <sub>DD</sub>		4.5	-	5.5	V	
High Level Input Voltage	V <sub>IH</sub>	RESETB $\overline{\text{SCK}}$ , SI INT0~3 TI2		0.8V <sub>DD</sub>	-	V <sub>DD</sub> +0.	V	
		XI		V <sub>DD</sub> -	-	-	V	
Low Level Input Voltage	V <sub>IL</sub>	RESETB $\overline{\text{SCK}}$ , SI		-0.3	-	0.2V <sub>DD</sub>	V	
		INT0~3 TI2		V <sub>DD</sub> -40	-	0.2V <sub>DD</sub>	V	
		XI		-0.3	-	0.5	V	
High Level Output Voltage	V <sub>OH</sub>	$\overline{\text{SCK}}$ , SO TOC	-I <sub>OH</sub> = 0.5mA	V <sub>DD</sub> -	-	-	V	
Low Level Output Voltage	V <sub>OL</sub>	$\overline{\text{SCK}}$ , SO TOC	I <sub>OL</sub> = 0.4mA	-	-	0.4	V	
I/O Leakage Current	I <sub>IL</sub>	RESETB, TOC $\overline{\text{SCK}}$ , SI, SO XI	V <sub>IN</sub> = 0 V to V <sub>DD</sub>	-	-	3	uA	1
		INT0~3 TI2	V <sub>IN</sub> = V <sub>DD</sub> - 40V to V <sub>DD</sub>	-	-	15	uA	
Supply Current	I <sub>DD</sub>		V <sub>DD</sub> = 5V f <sub>x</sub> = 4MHz	-	-	10	mA	2, 5
	I <sub>SBY</sub>		V <sub>DD</sub> = 5V f <sub>x</sub> = 4MHz	-	-	5	mA	3, 5
	I <sub>STOP</sub>		V <sub>DD</sub> = 5V	-	-	2	uA	4

- Notes :
1. Excludes current flowing through pull-up MOS output buffers.
  2.  $I_{DD}$  is the source current when no I/O current is flowing while the MCU is in reset state.  
 Test condition : MCU : Reset  
                           Pins : RESETB, TEST at V<sub>SS</sub>  
                                   P1.0~1.2, PA, PB, PC.2~3 at V<sub>DD</sub>  
                                   P0, P1.3, P2, P4, P5, P6 at V<sub>disp</sub>
  3.  $I_{SBY}$  is the source current when no I/O current is flowing while the MCU timer is operating.  
 Test condition : MCU : I/O Reset  
                           Standby mode  
                           Pins : RESETB at V<sub>DD</sub>  
                                   TEST at V<sub>SS</sub>  
                                   P1.0~1.2, PA, PB, PC.2~3 at V<sub>DD</sub>  
                                   P0, P1.3, P2, P4, P5, P6 at V<sub>disp</sub>
  4. This is the source current when no I/O current is flowing.  
 Test condition : Pins : P1.0~1.2, PA, PB, PC.2~3 at V<sub>DD</sub>  
                                   P0, P1.3, P2, P4, P5, P6 at V<sub>SS</sub>  
                                   XI clock stop after stop mode
  5. Current dissipation is in proportion to  $f_x$  while the MCU is operating or in standby mode.

## DC ELECTRICAL CHARACTERISTICS

### 1. STANDARD I/O PINS

(VSS = 0, VDD = 5V ±10%, TA = 25°C, fX = 4.19MHz)

PARAMETER	SYMBOL	TEST CONDITION		LIMIT			UNIT	NOTE
				MIN.	TYP.	MAX.		
High Level Input Voltage	V <sub>IH</sub>	P10~2,PC2~3 PA,PB		0.8V <sub>DD</sub>	-	V <sub>DD</sub> +0.3	V	
Low Level Input Voltage	V <sub>IL</sub>	P10~2,PC2~3 PA,PB		-0.3	-	0.3V <sub>DD</sub>	V	
High Level Output Voltage	V <sub>OH</sub>	P10~2,PC2~3 PA,PB	-I <sub>OH</sub> = 0.5mA	V <sub>DD</sub> -0.5	-	-	V	
Low Level Output Voltage	V <sub>OL</sub>	P10~2,PC2~3 PA,PB	I <sub>OL</sub> = 1.6mA	-	-	0.4	V	
Input Leakage Current	I <sub>OL</sub>	P10~2,PC2~3 PA, PB	V <sub>IN</sub> = 0V to V <sub>DD</sub>	-	-	3	uA	1

Note : 1. Output buffer current is excluded.

### 2. HIGH VOLTAGE I/O PINS

VDD = 4.5 to 5.5V, VSS = 0V, V<sub>disp</sub> = V<sub>DD</sub> - 40V to V<sub>DD</sub>

PARAMETER	SYMBOL	TEST CONDITION		LIMIT			UNIT	NOTE
				MIN.	TYP.	MAX.		
High Level Input Voltage	V <sub>IH</sub>	P0,P13,P2 P4, P5, P6		0.8V <sub>DD</sub>	-	V <sub>DD</sub> +0.3	V	
Low Level Input Voltage	V <sub>IL</sub>	P0,P13,P2 P4, P5, P6		V <sub>DD</sub> -40	-	0.3V <sub>DD</sub>	V	
High Level Output Voltage	V <sub>OH</sub>	P0,P13 P2, P4, P5 P6, BUZ	-I <sub>OH</sub> = 15mA	V <sub>DD</sub> -3.0	-	-	V	
			-I <sub>OH</sub> = 10mA	V <sub>DD</sub> -2.0	-	-	V	
			-I <sub>OH</sub> = 4mA	V <sub>DD</sub> -1.0	-	-	V	
Low Level Output Voltage	V <sub>OL</sub>	P0,P13 P2, P4, P5 P6, BUZ	V <sub>disp</sub> = V <sub>DD</sub> - 40V	-	-	V <sub>DD</sub> -37	V	1
			150µs at V <sub>DD</sub> - 40 V	-	-	V <sub>DD</sub> -37	V	2
Input Leakage Current	I <sub>OL</sub>	P0,P13 P2, P4, P5 P6, BUZ	V <sub>disp</sub> = V <sub>DD</sub> - 40V to V <sub>DD</sub>	-	-	20	uA	3
Pull-down MOS Current	I <sub>d</sub>	P0,P13,P2 P4,P5,P6,BUZ	V <sub>disp</sub> = V <sub>DD</sub> - 35V V <sub>IN</sub> = V <sub>DD</sub>	200	-	1000	uA	1

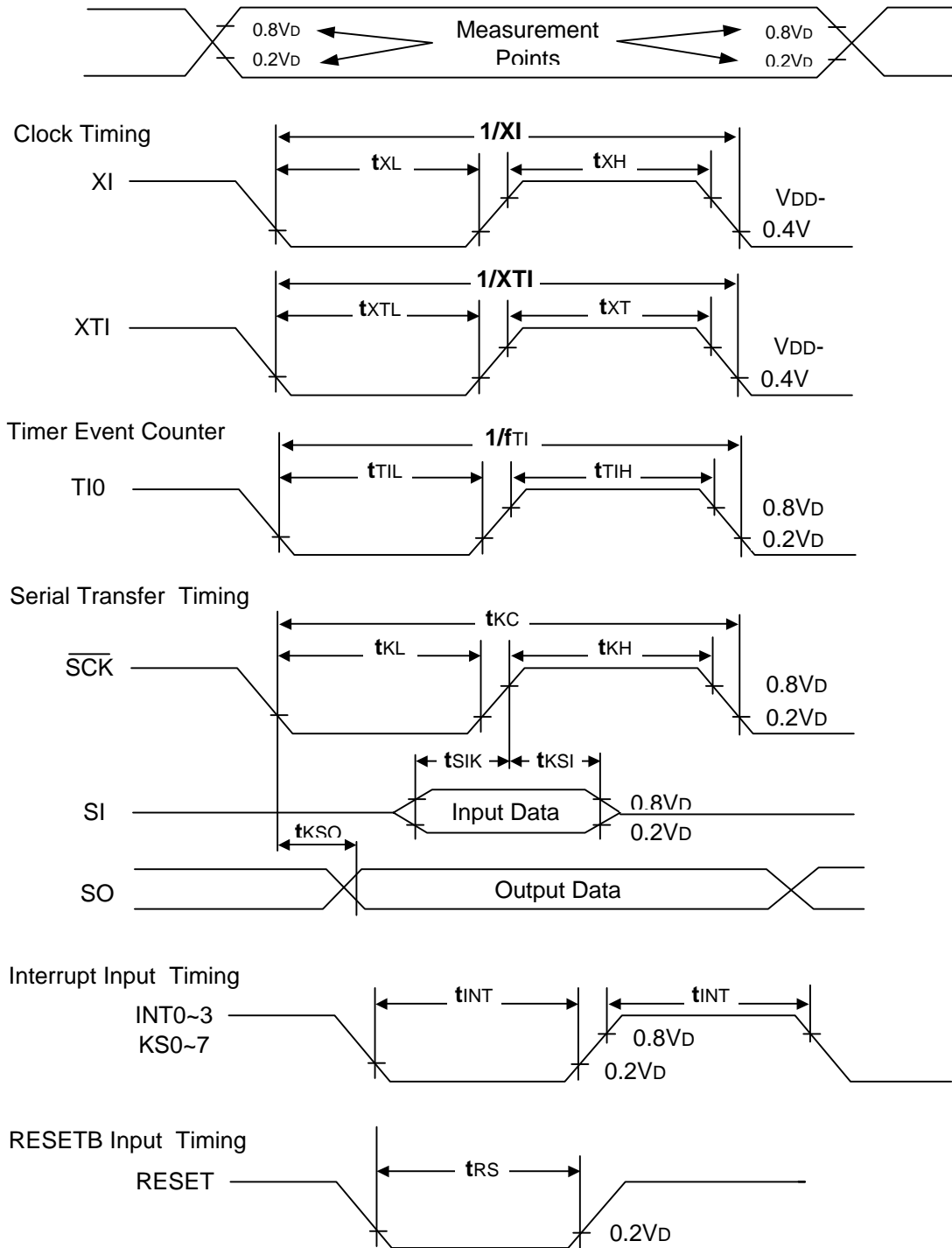
- Notes :
1. Applies to pins with pull-down MOS as selected by the mask option.
  2. Applies to pins without pull-down MOS as selected by the mask option.
  3. Excludes outputs buffer current.

## AC ELECTRICAL CHARACTERISTICS

(TA = -40 to +85°C, VDD = 2.7 to 6.0V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Cycle Time	t <sub>cy</sub>	VDD = 4.5 to 6.0V	0.95	-	64	μs	
		VDD = 2.7 to 3.3V	3.8	-	64	μs	
TI Input Frequency	f <sub>TI</sub>	VDD = 4.5 to 6.0V	0	-	1	MHz	
TI Input High, Low Level Width	t <sub>TIH</sub>	VDD = 4.5 to 6.0V	0.48	-	-	μs	
SCK Cycle Time	t <sub>kcy</sub>	VDD = 4.5 to	Input	800	-	-	nS
			Output	950	-	-	nS
SCK High, Low Level Width	t <sub>kh</sub>	VDD = 4.5 to	Input	400	-	-	nS
			Output	t <sub>kcy</sub> /2~50	-	-	nS
SI Set up Time to SCK High	t <sub>SIK</sub>		100	-	-	nS	
SI Hold Time to SCK High	t <sub>SIH</sub>		400	-	-	nS	
SCK to S0 Output Delay Time	t <sub>kso</sub>	VDD = 4.5 to	Input	-	-	300	nS
			Output	-	-	250	nS
INT 0 ~ 4 Input Level High, Low	t <sub>INTH</sub>		5	-	-	μs	
	t <sub>INTL</sub>		5	-	-	μs	
RESETB Low Level	t <sub>rsl</sub>		5	-	-	μs	

AC Timing Measurement Points (Except XI and XTI)



**RAM DATA RETENTION CHARACTERISTICS ( in STOP Mode )**

(TA = -40 to +85 jÉ)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Data Retention Supply Voltage	VDDDR		2.0	-	6.0	V
Data Retention Supply Current	IDDDR	VDDDR = 2.0V	-	0.1	10	uA
Release Signal Set Time	tsREL		0	-	-	uS
Oscillation Stabilization Wait Time	tWAIT	When released by RESETB	-	2 <sup>17</sup> /fx	-	mS
		When released by interrupt Signal	-	NOTE 1)	-	mS

NOTE 1) Depends on the setting of the basic interval timer mode register.

(refer to the table below)

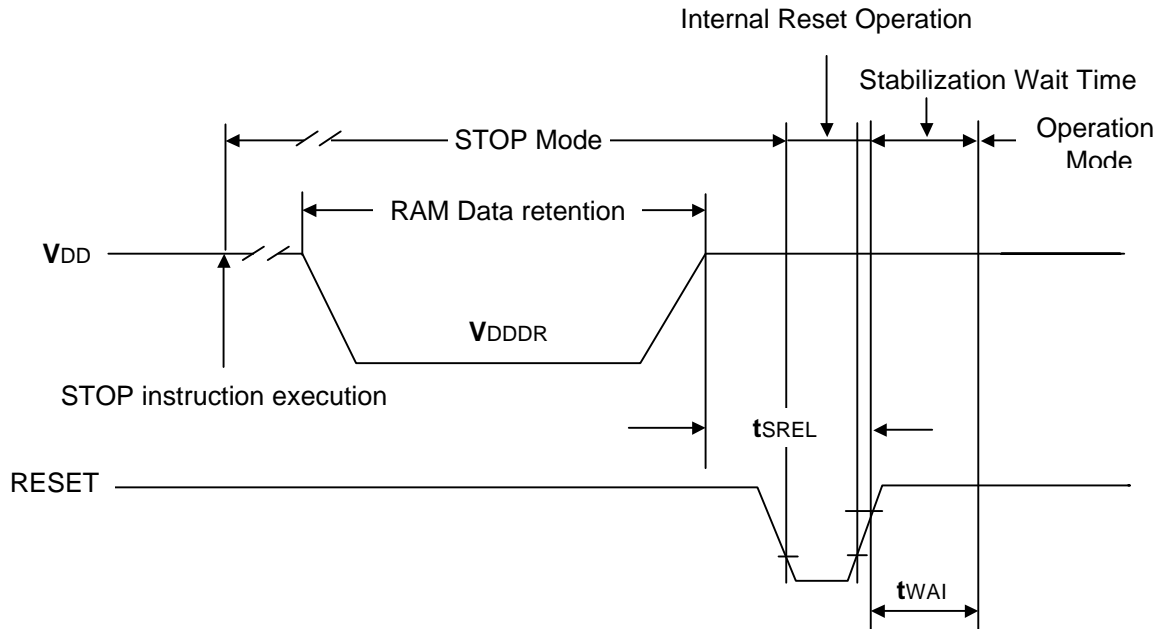
( fx = 4.19MHz )

BMOD2	BMOD1	BMOD0	Oscillation Stabilization
0	0	0	2 <sup>20</sup> /fx (Approximately 250ms)
0	1	1	2 <sup>17</sup> /fx (Approximately 31.3ms)
1	0	0	2 <sup>15</sup> /fx (Approximately 7.82ms)
1	0	1	2 <sup>13</sup> /fx (Approximately 1.95ms)

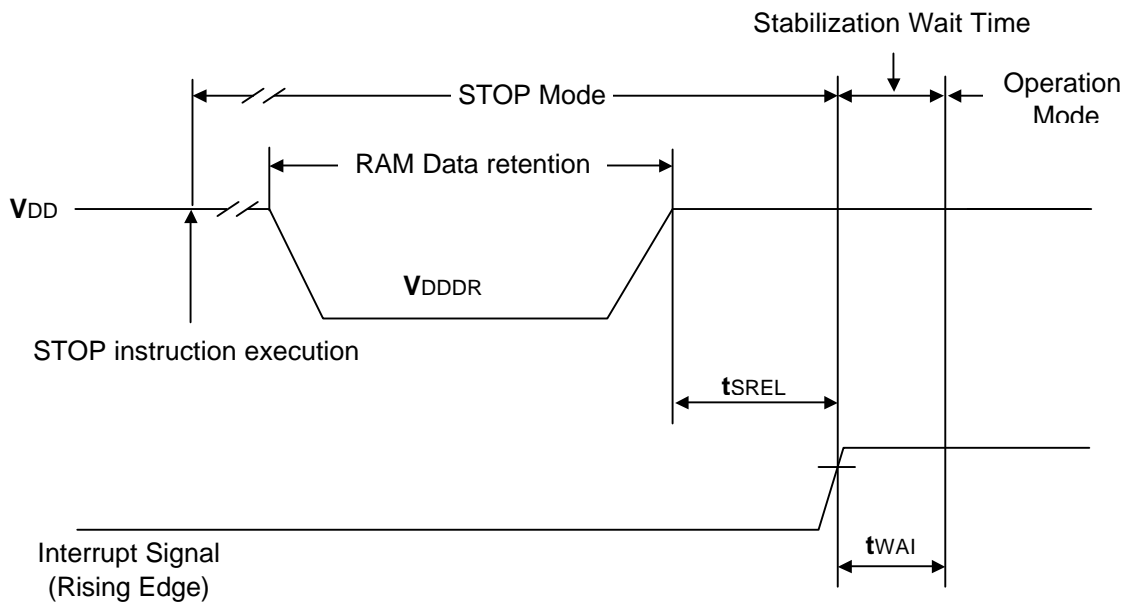


## RAM DATA RETENTION TIMING

When STOP mode is released by RESETB input



When STOP mode is released by interrupt signal



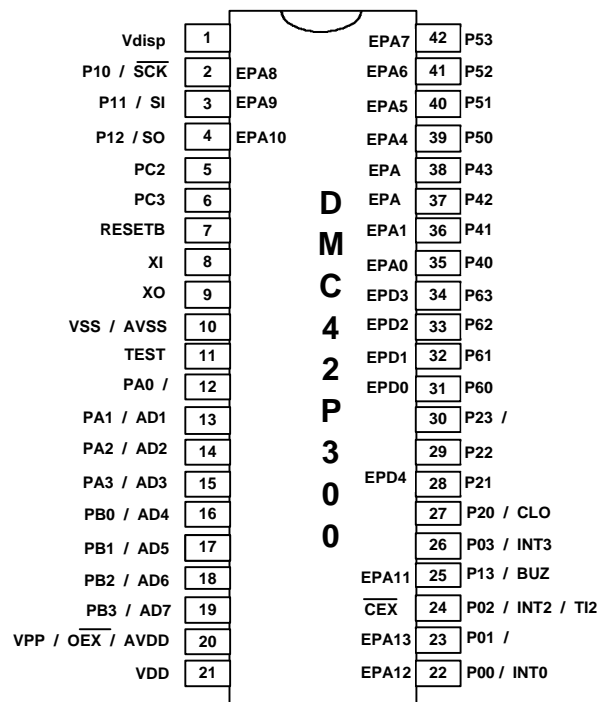
## DMC42P3008

### DESCRIPTION

The DMC42P3008 is a system evaluation LSI having a built in One-time PROM for DMC42C3008. A programming and verification for the internal PROM is achieved by using a general EPROM programmer with an adapter socket. The function of this device is exactly same as the DMC42C3008 by programming to the internal PROM. The DMC42P3008 is OTP version of the DMC42C3008 whose internal ROM has been changed from MASK ROM to EPROM.

\* CAUTION : P3008 does not include internal pull-down resistor for high voltage output, so user has to connect externally.

### PIN CONFIGURATION



## DEVICE OPERATION

The operational modes of the DMC42P3008 are listed in Table 1.

A single 5V power supply is required in the read mode.

All inputs are TTL levels except for  $V_{PP}$  /  $\overline{OEX}$ .

$V_{PP} = 12.5 \pm 0.5V$

MODE \ PINS	$\overline{CEX}$	$V_{PP} / \overline{OEX}$	$V_{DD}$	OUTPU
READ	$V_{IL}$	$V_{IL}$	5.0V	DoUT
PROGRAM	$V_{IL}$	$V_{PP}$	6.0V	DiN
VERIFY	$V_{IL}$	$V_{IL}$	6.0V	DoUT
PROGRAM INHIBIT	$V_{IH}$	$V_{PP}$	6.0V	High Z

TABLE 1. Operating Modes


PIN NAME	MODE	
	EPROM MODE	USER MODE
TEST	$V_{IH}$	$V_{IL}$
RESETB	$V_{IL}$	

TABLE 2. The modes of DMC42P3008

## DC PROGRAMMING CHARACTERISTICS

PARAMETER	SYMBO	TEST CONDITION	LIMIT		UNIT
			MIN.	MAX.	
Input Low Voltage	$V_{IL}$		-0.1	0.8	V
Input High Voltage	$V_{IH}$		2.0	$V_{DD}$	V
Output Low Voltage during Verify	$V_{OL}$	$I_{OL} = 2.1mA$	-	0.45	V
Output High Voltage during Verify	$V_{OH}$	$I_{OH} = -400\mu A$	2.4	-	V
Quick-pulse Programming	$V_{PP}$		12.5	13.0	V
Quick-pulse Programming	$V_{DD}$		6.0	6.5	V

PACKAGE DIMENSION

[ UNIT : Millimeter ]

