



矽杰微电子
XIJIE MICROELECTRONICS

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XC8P9510

8 OTP
Ver 1.0

矽杰
XIJIE MIC

矽杰微电子
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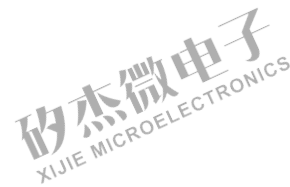


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1.

1.1

CPU

1K× 14-Bi t OTP ROM	I HRC
48× 8-Bi t SRAM	8MHz/1MHz/910KHz
5	I LRC
6 LVR	11KHz
1.8V/2.4V/2.7V/3.3V/3.6V/3.9V	
1.2 mA 4MHz/5V	2Cl ock 4Cl ock 8Cl ock
5 μA 11KHz/5V	16Cl ock 32Cl ock
1 μA	

I/O

		8Bi t	/
1 I/O	P60 P65	12Bi t	PWM
6 I/O			
	P6		
6 I/O		TCC	
6 I/O			
P63()		T1/PWM	
	P60		

VLVR2.7V	5.5V Fcpu=0	8MHz
VLVR2.4V	5.5V Fcpu=0	4MHz
VLVR1.8V	5.5V Fcpu=0	2MHz

-40 -85

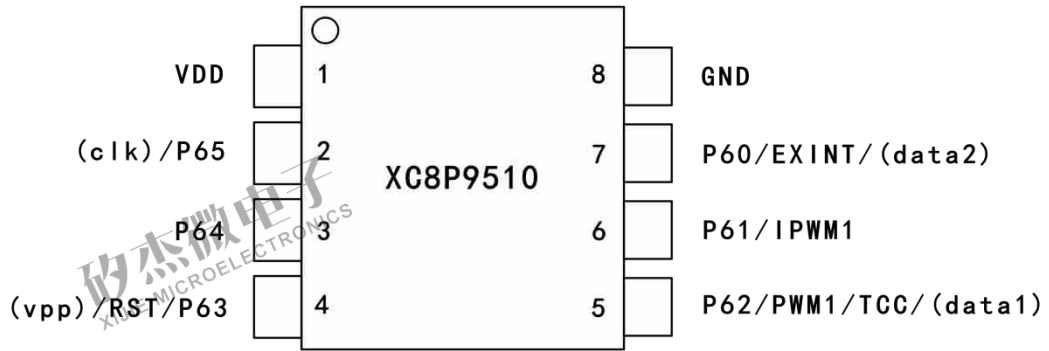
XC8P9510-DI P8
 XC8P9510-SOP8
 XC8P9510-SOT23=6



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1.2



XC8P9510-8PIN



XC8P9510-6PIN

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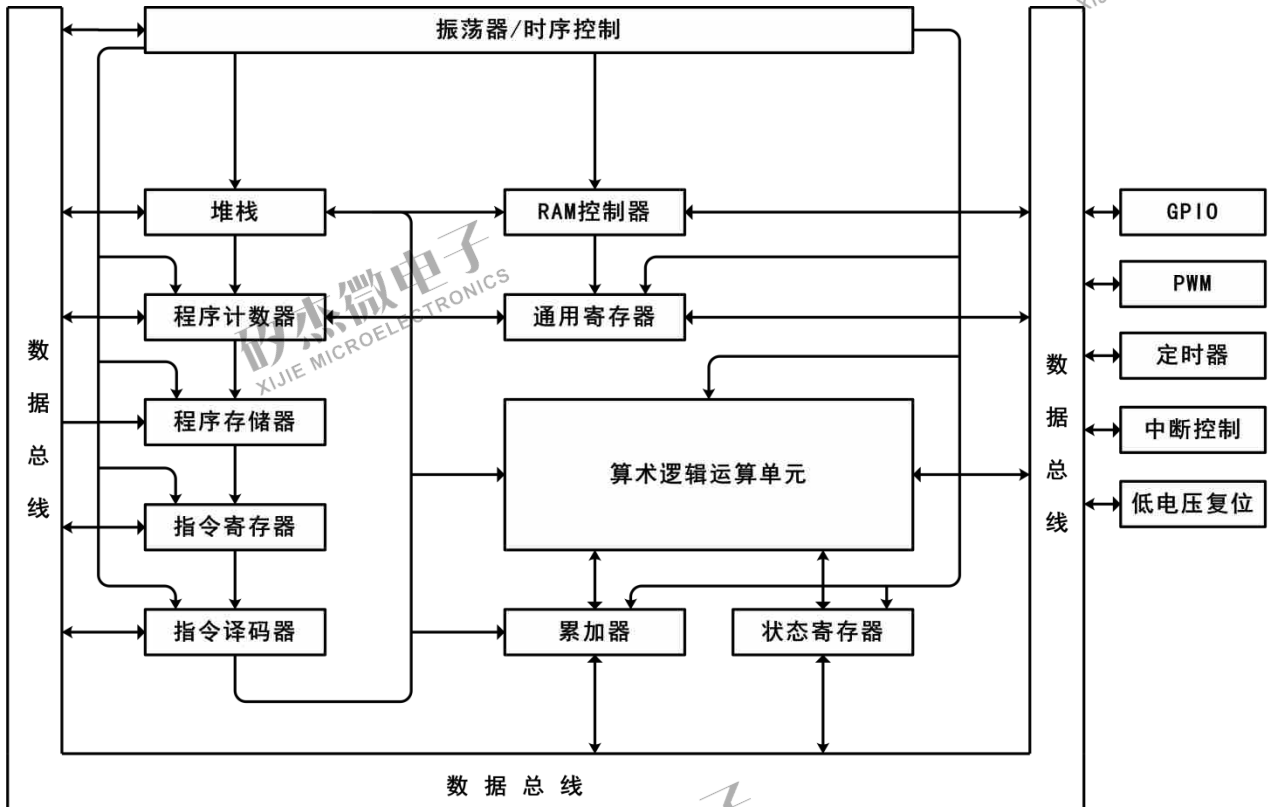


1.3

		I/O	
P60	P60	I/O (/)	GPIO
	EXINT	I (SMT)	
	data2	I (SMT)	
P61	P61	I/O (/)	GPIO
	IPWM1	0	PWM1
P62	P62	I/O (/)	GPIO
	TCC	I	TCC
	PWM1	0	PWM1
	data1	I (SMT)	
P63	P63	I/O ()	GPIO
	RST	I (SMT)	
	vpp	I	
P64	P64	I/O (/)	GPIO
P65	P65	I/O (/)	GPIO
	clk	I (SMT)	
	VDD	--	
	VSS	--	



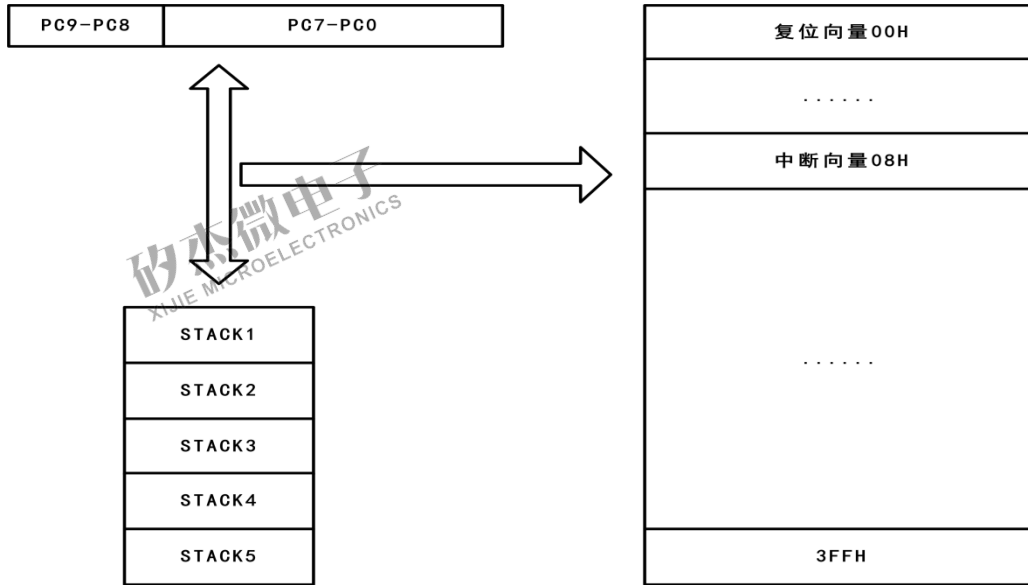
1.4





2.

2.1



2.2

R \ I/O

I/O

I/R/IW

	R	I/O
0x00	R0/IAR()	
0x01	R1/TCC()	CONT()
0x02	R2/PC()	
0x03	R3/STATUS()	
0x04	R4/RSR(RAM)	
0x05		
0x06	R6/PORT6(P6)	I/O6/P6CR(P6)
0x07		I/O7/T1L T1/PWM
0x08	R8/PWMCON(PWM)	I/O8/T1H T1/PWM
0x09	R9/PRDL(PWM)	I/O9/PDCR0()
0x0A	RA/PDCL(PWM)	
0x0B	RB/PRDCH(PWM)	I/OB/PDCR1()
0x0C		
0x0D	RD/ICIECR()	I/OCD/PHCR()
0x0E	RE/CPUCON(CPU)	I/OCE/EI SCR(EI S)
0x0F	RF/ISR()	I/OCF/IMR()
0x10		
...		
0x3F		



3.

3.1

3.1.1 RPAGE R0/IAR ()

00H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
IAR	RI ND<7: 0>							
/	R							
	X							

R0

R4 RAM

6 FSR<5: 0>

3.1.2 RPAGE R1/TCC()

01H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
TCC(R)	TCC<7>	TCC<6>	TCC<5>	TCC<4>	TCC<3>	TCC<2>	TCC<1>	TCC<0>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

TCC 8Bi t

/

TCC

TCC EXI NT

1 CONT. 4

PAB CONT. 3

TCC TCC

0

3.1.3 RPAGE R2/PC()

02H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PC	PCL<7>	PCL<6>	PCL<5>	PCL<4>	PCL<3>	PCL<2>	PCL<1>	PCL<0>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

PC

CPU

CPU

PC

1

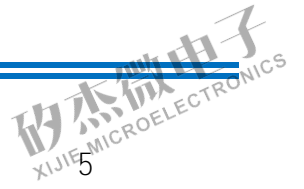
XC8P9510

10

PC

PCL

PC<9: 8>



XC8P9510

PC

PC

XC8P9510

5

- (1) PC 5 10 1K× 14Bi t ROM XC8P9510
- (2) PC PC
- (3) " JMP" 10 JMP 1K
" JMP" 10 PC +1
- (4) " RET" PC
- (5) PC 1/4K OPTION 0 256 PC
PC 9 10
256 PC 令 2 令
PC 1K PC PC
1K
- (6) PC 008
- (7) 5 6
1 7 2

3.1.4 RPAGE R3/STATUS()

03H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
STATUS	RST	GB1	GB0	T	P	Z	DC	C
/	R	R/W	R/W	R	R	R/W	R/W	R/W
	0	0	0	1	1	X	X	X

Bi t<7> RST-

0

1

Bi t<6 5> GB1 GB0-

Bi t<4> T-

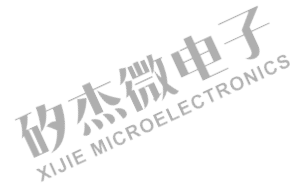
0

1 " SLEEP"

Bi t<3> P-

0

1 " SLEEP"





T/P

	RST	T	P
	0	1	1
RESET	0		
RESET	0	1	0
	1	1	0
SLEEP		1	0

Bit<2> Z- " 1"

0 0

1 0

Bit<1> DC-

0 /

1 /

Bit<0> C-

0 /

1

3.1.5 RPAGE R4/RSR(RAM)

04H(R)	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
FSR	-	-	FSR<5>	FSR<4>	FSR<3>	FSR<2>	FSR<1>	FSR<0>
/	R	R	R/W	R/W	R/W	R/W	R/W	R/W
	1	1	X	X	X	X	X	X

FSR<5:0>

RAM

0X00 0X3F

FSR

R0

FSR

R0

FSR

3.1.6 RPAGE R6/PORT6(P6)

06H(R)	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
PORT6	-	-	P65	P64	P63	P62	P61	P60
/	R	R	R/W	R/W	R/W	R/W	R/W	R/W
	1	1	1	1	1	1	1	1

P6

6



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3.1.7 RPAGE R8/PWMCON(PWM)

08H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
T1	T1EN	BZEN	I PWMEN	PWMEN	T1PTEN	T1PSR<2>	T1PSR<1>	T1PSR<0>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7> T1EN -T1/PWM

1
0

Bi t<6> BZEN-BUZZER

1 BUZZER T1 BUZZER PWMEN=0
0

Bi t<5> I PWMEN-I PWM

1 PWM PWM
0

Bi t<4> PWMEN-PWM

1 PWM BZEN=0
0

Bi t<3:0> T1PTEN T1PSR2 T1PSR1

T1PTEN	T1PSR<2>	T1PSR<1>	T1PSR<0>	
0	0	0	0	1: 1
1	0	0	0	1: 2
1	0	0	1	1: 4
1	0	1	0	1: 8
1	0	1	1	1: 16
1	1	0	0	1: 32
1	1	0	1	1: 64
1	1	1	0	1: 128
1	1	1	1	1: 256

3.1.8 RPAGE R9/PRDL(PWM)

09H(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PRDL	PRD<7>	PRD<6>	PRD<5>	PRD<4>	PRD<3>	PRD<2>	PRD<1>	PRD<0>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7:0> PRD<7:0>-PWM

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3.1.9 RPAGE RA/PDCL(PWM)

OAH(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PDCL	PDC<7>	PDC<6>	PDC<5>	PDC<4>	PDC<3>	PDC<2>	PDC<1>	PDC<0>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7:0> PDC<7:0>-PWM

3.1.10 RPAGE RB/PRDCH(PWM)

OBH(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PRDCH	PRD<11>	PRD<10>	PRD<9>	PRD<8>	PDC<11>	PDC<10>	PDC<9>	PDC<8>
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7:4> PRD<11:8>-PWM

Bi t<3:0> PDC<11:8>-PWM

3.1.12 RPAGE RD/ICIECR()

ODH(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
ICIECR	-	-	IEN<5>	IEN<4>	IEN<3>	IEN<2>	IEN<1>	IEN<0>
/	R	R	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<5:0> IEN<5:0>-P6

1

0

OPTION

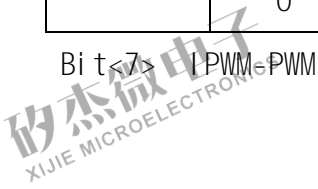
P6

0x0D

3.1.13 RPAGE RE/CPUCON(CPU)

OEH(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
CPUCON	IPWM	PWMCKS	TCCCKS	PWMWE	TCCWE	STPHX	CLKMD	IDLE
/	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7> IPWM=PWM





1
0
Bi t<6> PWMCKS-PWM
1
0
Bi t<5> TCCCKS-TCC
1
0
Bi t<4> PWMWE-PWM
1 PWM
0 PWM
Bi t<3> TCCWE-TCC
1 TCC
0 TCC
Bi t<2> STPHX-
1 IRC
0
Bi t<1> CLKMD-
1 RC
0 IRC
CLKMD=1 STPHX=1
STPHX=0 CLKMD=0
Bi t<0> IDLE-
1 SLEEP
TCC PWM
0 SLEEP

3.1.14 RPAGE RF/ISR()

OFH(R)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
ISR	-	-	-	-	T1FF	EXIF	ICIF	TCIF
/	R	R	R	R	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7: 4>

Bi t<3> T1FF -T1/PWM

Bi t<2> EXIF-



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Bit<1> ICIF-P6

Bit<0> TCIF-TCC

1

0

0

MOV RF, A

BTC AND RF, A

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3.2

3.2.1 CONT(

01H(IOC)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
CONT	LRCEN	INT	TS	TE	PAB	PSR2	PSR1	PSR0
/	R/W	R	R/W	R/W	R/W	R/W	R/W	R/W
	0	0	1	1	1	1	1	1

Bi t<7> LRCEN- RC

1

0

Bi t<6> INT-

0

1

Bi t<5> TS-TCC

0

TCCCKS=0 /

TCCCKS=1

1

TCCCKS=0 /

TCCCKS=1

Bi t<4> TE-TCC

0 TCC

1

1 TCC

1

Bi t<3> PAB-

0

TCC

1

Bi t<2:0> PSR2 PSR0-TCC

PSR2	PSR1	PSR0	TCC
0	0	0	1:2
0	0	1	1:4
0	1	0	1:8
0	1	1	1:16
1	0	0	1:32
1	0	1	1:64
1	1	0	1:128
1	1	1	1:256

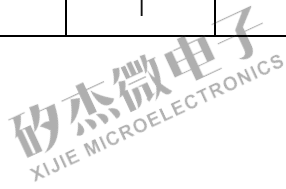


3.2.2 IOPAGE I0C6/P6CR(P6)

06H(I0C)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
P6CR	-	-	P6CR<5>	P6CR<4>	P6CR<3>	P6CR<2>	P6CR<1>	P6CR<0>
/	R	R	R/W	R/W	R/W	R/W	R/W	R/W
	1	1	1	1	1	1	1	1

Port6

- 1
- 0



3.2.2 IOPAGE I0C7/T1L(T1/PWM)

07H(I0C)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
T1L	T1<7>	T1<6>	T1<5>	T1<4>	T1<3>	T1<2>	T1<1>	T1<0>
/	R	R	R	R	R	R	R	R
	0	0	0	0	0	0	0	1

T1/PWM

3.2.2 IOPAGE I0C8/T1H(T1/PWM)

08H(I0C)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
T1H	-	-	-	-	T1<11>	T1<10>	T1<9>	T1<8>
/	R	R	R	R	R	R	R	R
	0	0	0	0	0	0	0	0

T1/PWM

3.2.3 IOPAGE I0C9/PDCR0(0)

09H(I0C)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PDCR0	-	-	P6PD<5>	P6PD<4>	-	-	-	-
/	R	R	R/W	R/W	R	R	R	R
	1	1	1	1	1	1	1	1

Bi t<5: 4> P6<5: 4>

- 0
- 1

OPTION

P6

I0C9/PHDCR





3.2.4 IOPAGE IOCB/PDCR1(1)

OBH(IOC)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PDCR1	P6PD<3>	P6PD<2>	P6PD<1>	P6PD<0>	-	-	-	-
/	R/W	R/W	R/W	R/W	R	R	R	R
	1	1	1	1	1	1	1	1

Bi t<7: 4> P6<3: 0>

0

1

Bi t<3: 0>

1

3.2.5 IOPAGE IOCD/PHCR()

ODH(IOC)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
PHCR	-	-	P6PH<5>	P6PH<4>	P6PH<3>	P6PH<2>	P6PH<1>	P6PH<0>
/	R	R	R/W	R/W	R/W	R/W	R/W	R/W
	1	1	1	1	1	1	1	1

Port6

0

1

OPTION

P6

P6PH<3>

P63

3.2.6 IOPAGE IOCE/EISCR(EIS)

OEH(IOC)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
EISCR	-	EIS	-	-	-	-	-	-
/	R	R/W	R	R	R	R	R	R
	1	0	1	1	1	1	1	1

Bi t<7>

Bi t<6> EIS-P60

1

P60 I/O

P6CR Bi t0

" 1"

P6

P60

0

P60

I/O

EXINT

Bi t<5: 0>



3.2.7 IOPAGF IOCF/IMR()

OFH(IOC)	Bi t7	Bi t6	Bi t5	Bi t4	Bi t3	Bi t2	Bi t1	Bi t0
IMR	-	-	-	-	T1IE	EXIE	ICIE	TCIE
/	R	R	R	R	R/W	R/W	R/W	R/W
	0	0	0	0	0	0	0	0

Bi t<7: 4>

Bi t<3> T1IE-T1

1

0

Bi t<2> EXIE-

1 P60

0

Bi t<1> P6ICIE-P6

1

0

Bi t<0> TCIE-TCC

1

0



3.3

XC8P9510 4

" EI "

008H

		EI + EXIE=1	EXIF
		EI + ICIE=1	ICIF
	TCC	EI + TCIE=1	TCIF
	PWM	EI + T1IE=1	T1IF

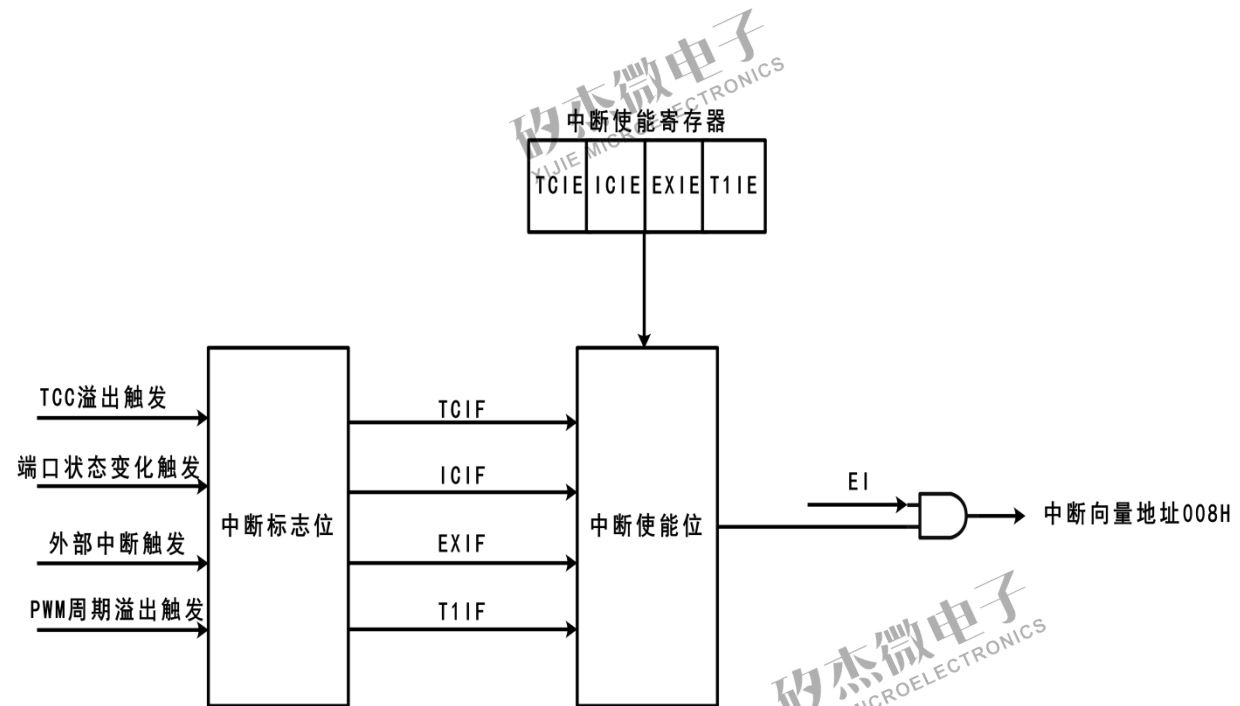
RPAGE RF

IOCF

" EI "

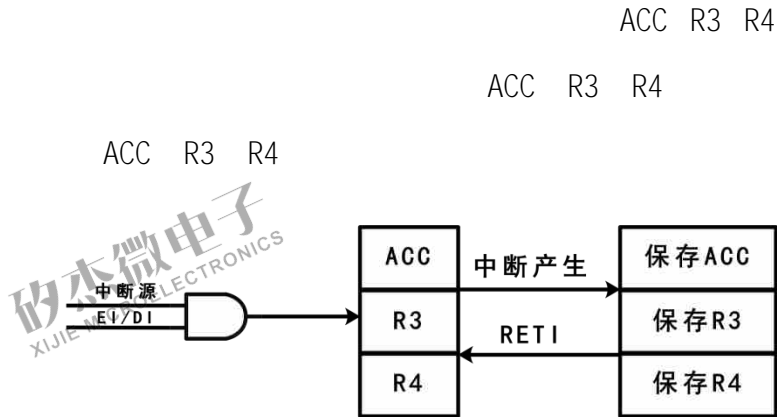
" DI "

008H





3.3.1





3.4

3.4.1

XC8P9510

3

POR

RESET

LVR

PC

0000H

MCU

VDD

RC

3.4.2 POR

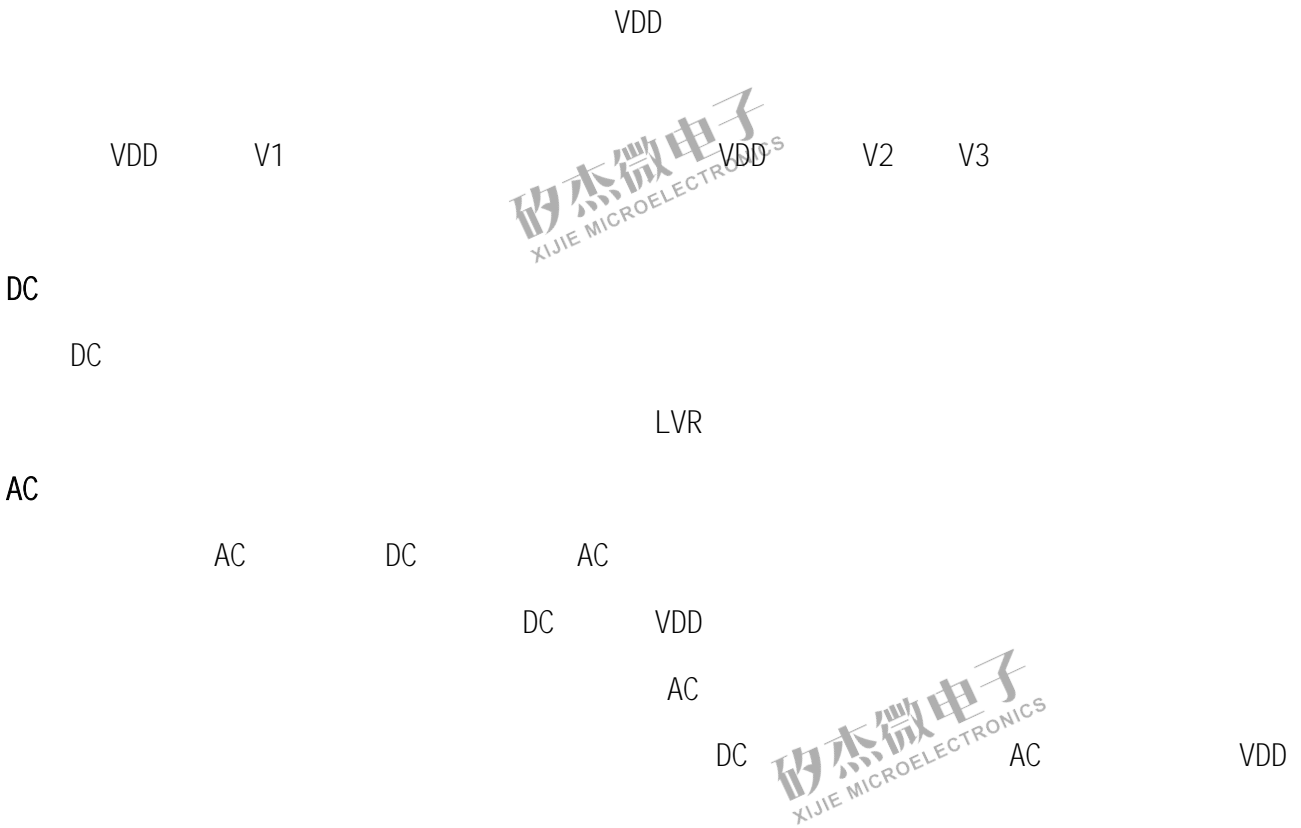
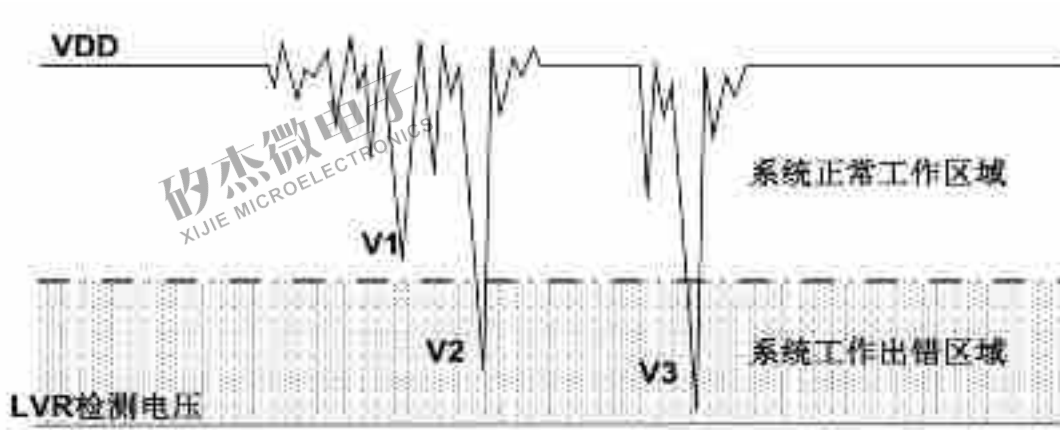
LVR

OPTION

PWRT	
PWRT	4.5ms
PWRT	18ms
PWRT	72ms
PWRT	288ms
PWRT	140us



3.4.3 LVR

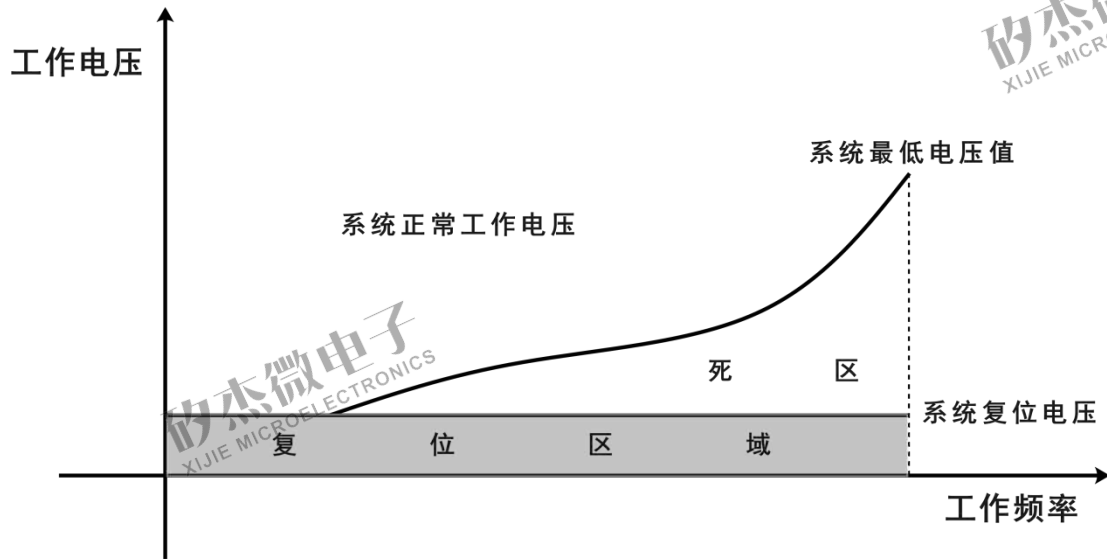


3.4.4 LVR



XC8P9510

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LVR

IRC	Clocks	LVR
IRC-8MHz	2 Cl ocks	LVR=2. 7V
IRC-8MHz	2 Cl ocks	LVR=2. 4V
IRC-910KHz	2 Cl ocks	LVR=1. 8V
IRC-910KHz	2 Cl ocks	LVR=1. 8V

1 = IRC + Cl ocks 2 LVR

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3.5

XC8P9510 4

I RC

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TCC PWM

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XIJE MIC

I HRC		STPHX	STPHX	
I LRC				
CPU				
TCC				
PWM				
			TCC, PWM	
	-	-	P6I C, TCC, PWM, RESET	P6I C, RESET

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ELECTRONICS

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3.5.1

RC

CPU



3.5.2

CPU

CLKMD

CLKMD=0

RC

CLKMD=1

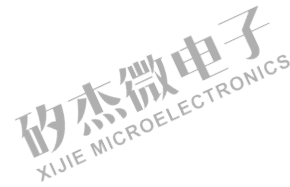
SPTHX



RC

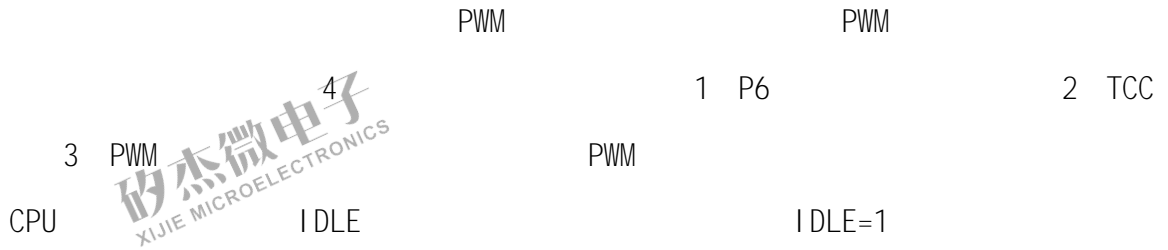
STPHX=1

CPU

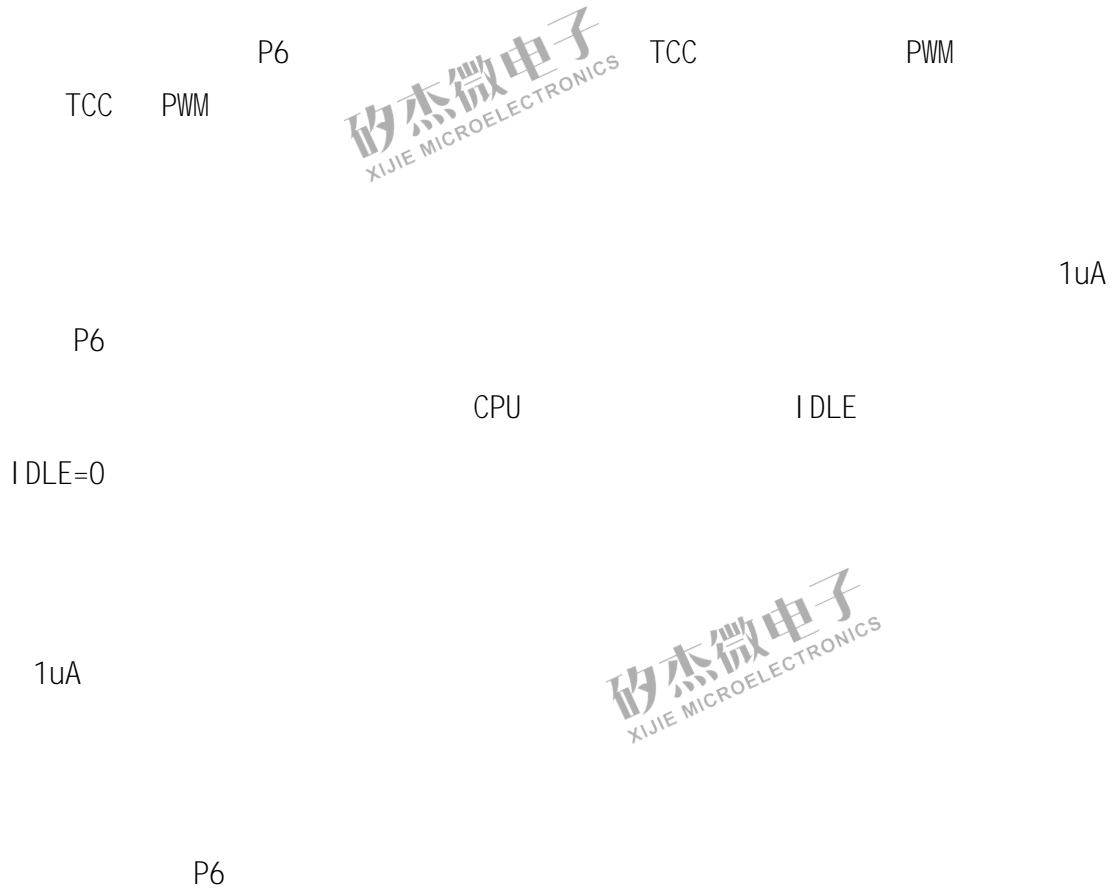




3.5.3



3.5.4





3.6

XC8P9510 3 OPTION

IRC	RC	RCM	910K/1M/8M

3.6.1 RC

XC8P9510 RC 8MHz

RC 8MHz 1MHz 910KHz OPTION

IRC

Fi rc	I RC	
8 M	IRC	8MHz
1 M	IRC	1MHz
910K	IRC	910KHz

XC8P9510 OPTION :

Cl ocks	Cl ocks
2cl ock	2cl ock
4cl ock	4cl ock
8cl ock	8cl ock
16cl ock	16cl ock
32cl ock	32cl ock

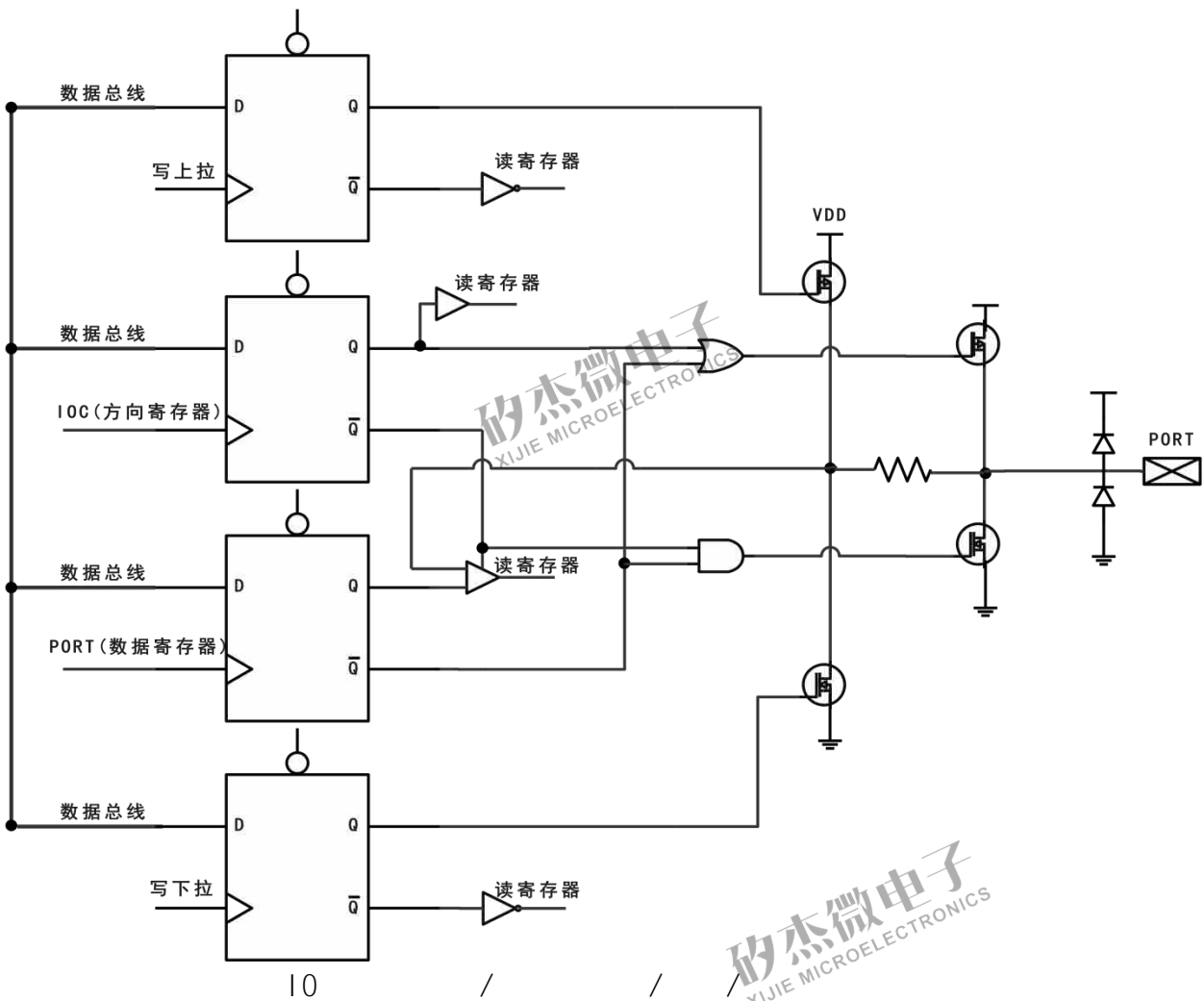
3.6.3



3.7 I/O

XC8P9510	1	I/O	6	6	I/O
6		I/O	P60	P65	
6		I/O	P60	P65	
6		I/O	P60	P65	

3.7.1 GPIO



3.7.2

XC8P9510	6	I/O	P60	P65	" SLEEP"
----------	---	-----	-----	-----	----------



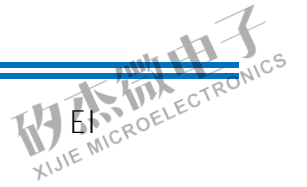
XC8P9510

SLEEP

DI

SLEEP

EI



1 PORT6

2

3 PORT

4

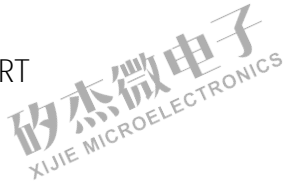
5 DI

6 " SLEEP"

SLEEP

7

SLEEP



1 PORT6

2

3

4 PORT

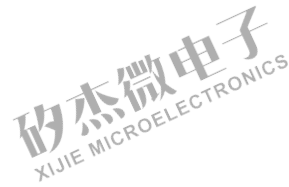
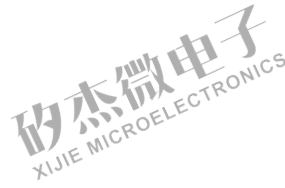
5 " EI"

6 " SLEEP"

SLEEP

7

SLEEP





3.7.3

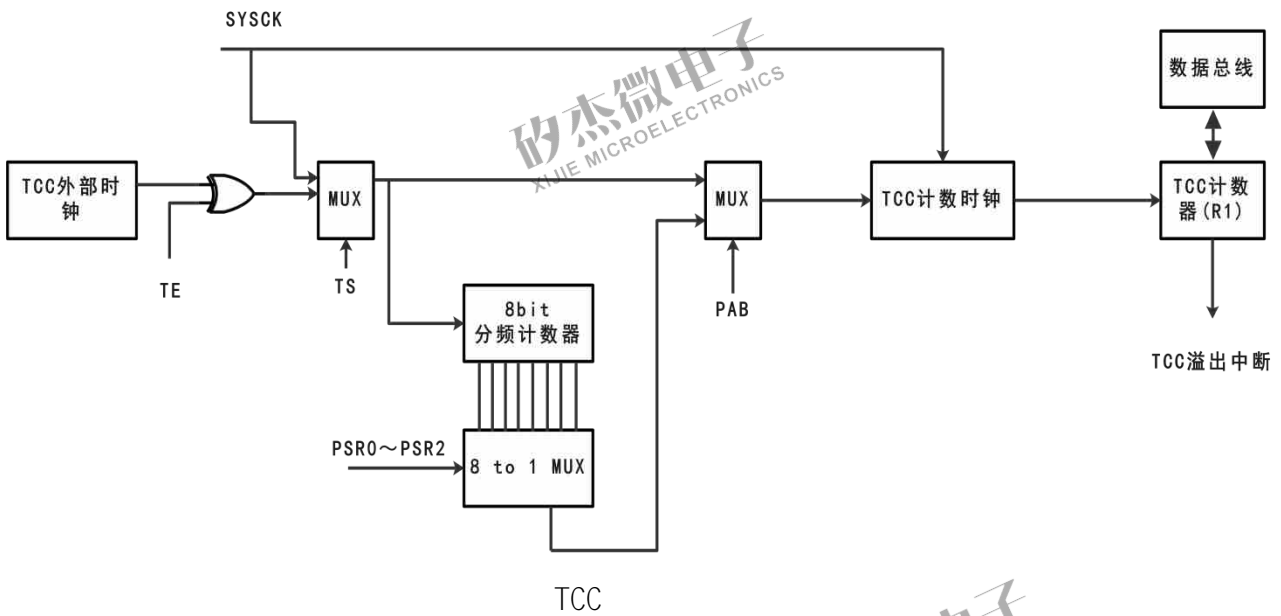
XC8P9510

	SMT
P6.3	$0.512 * VDD$
P6.0 P6.2	$0.24 * VDD / 0.52 * VDD$
P6.4 P6.5	$0.24 * VDD / 0.52 * VDD$



3.8 TCC

XC8P9510	8	TCC	TCC
CONT	PAB	PSR0	PSR2
TCC	TCC		
TCC (R1)	8Bit	TCC	
Fm/Fs			
1	8Bit	TCC	CONT
TCC			TCC
IDLE	TCC		



3.8.1 TCC

TCC					
CONT					
	CONT	TCC			1
	IOCF	TCIE	Bit0	1	EI



ACC STATUS R4

RETI

TCC

3.8.2 TCC

TCC

TCC

TCC

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()

=2clock Fosc=8 MHz TCC =4 TCC =156

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XIJIE MIC

TCC

()

=1 MHz TCC =4 TCC =156

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ELECTRONICS

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3.9 PWM

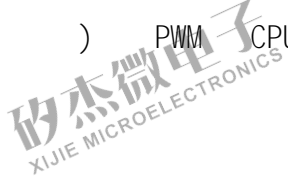
XC8P9510 1 12 bit PWM PWM

PWM

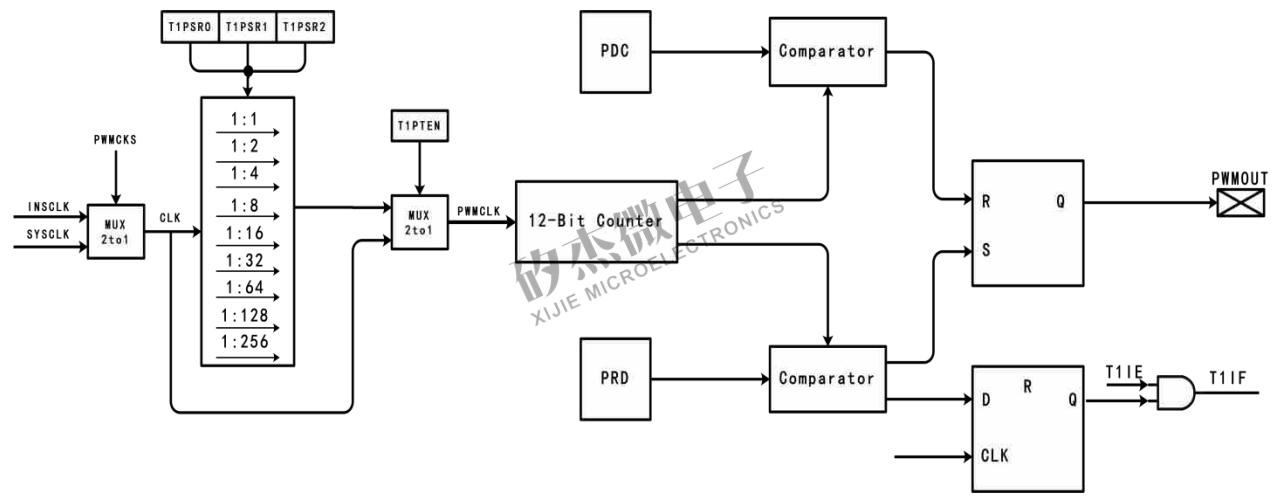
IDLE() PWM CPU

PWMCKS=1

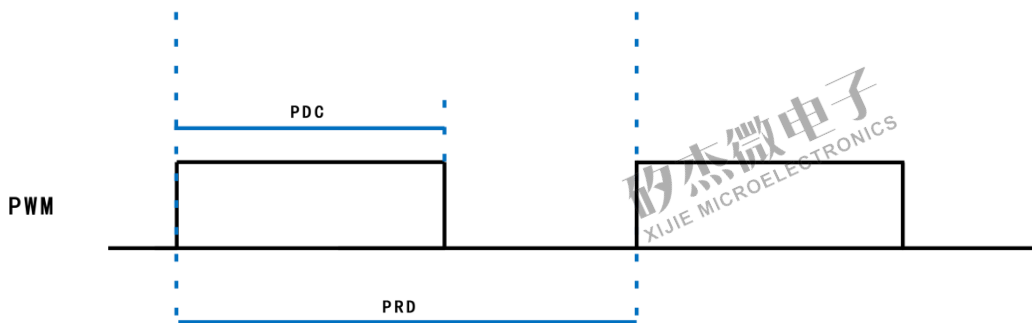
PWMWE



3.9.1 PWM



PWM



3 PWM



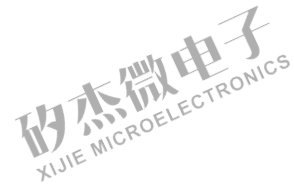
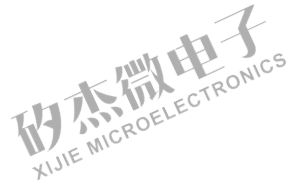
3.9.2 PWM

PWM	8bi t		12bi t	T1
PWM			PWM	T1EN T1
T1PTEN	T1PSR<2: 0>		T1	
PWM	PWM		PRDCH, PRDL	T1 PRD
T1				
PWM				
PWM				
PWM	PRDCH, PDCL		PDC/T1	
PWM				
—				
PRD=100	Fosc=8 MHz	T1	=2	
			(-)	
PWM		PWM	(PRDCH, PDCL)	T1
PRDCH, PDCL		PDC/T1	PDC/T1	T1
PWM		PRDCH, PDCL		PDC/T1
PWM				
—				
PDC=50	Fosc=8 MHz	T1	=2	
			(-)	



3.9.3 PWM

CPUCON	PWM	PWM	PWM
PWMCON	PWM	PWM	
RPAGE-R9	RA	RB	PWM
PWM	" EI "	" DI "	





3. 10

TCC	IDLE
CPUCON	IDLE=1 , TCCWE=1 , TCCCKS=1
	TCIE=1
	SLEEP
TCC	IDLE
CPUCON	IDLE=1 , TCCWE=1 , TCCCKS=1 CLKMD=1 STPHX=1
	TCIE=1
	SLEEP
T1	IDLE
PWMCON	T1EN=1
	PRD
CPUCON	IDLE=1 , PWMWE=1 , PWMCKS=1
	T1IE=1
	SLEEP
T1	IDLE
PWMCON	T1EN=1
	PRD
CPUCON	IDLE=1 , PWMWE=1 , PWMCKS=1 CLKMD=1 STPHX=1
	T1IE=1
	SLEEP



4. OPTION

CODE	OPTION		
Clocks	2 Clocks		2 Clocks
	4 Clocks		4 Clocks
	8 Clocks		8 Clocks
	16 Clocks		16 Clocks
	32 Clocks		32 Clocks
IRC	8M	IRC	8M
	1M	IRC	1M
	910KHz	IRC	910KHz
		CPUCON	
	LVR=1.8V		1.8V
	LVR=2.4V		2.4V
	LVR=2.7V		2.7V
	LVR=3.3V		3.3V
	LVR=3.6V		3.6V
	LVR=3.9V		3.9V
OTP	1K	OTP ROM	1K
	0.5K	OTP ROM	0.5K
	0.5K	OTP ROM	0.5K
		P63	
		P63	
P63	GPI0	P63	I/O
	GPI	P63	
	RST	P63	



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	PWRT=4.5ms	=4.5ms
	PWRT=18ms	=18ms
	PWRT=72ms	=72ms
	PWRT=288ms	=288ms
	PWRT=140us	=140us
	1/4K	1/4K
	1K	1K
P6		P6 0x0D
P6		P65-P64
P6		P65-P64 P63
POWER	HIGH	VDD 5V HIGH
	LOW	VDD 3V LOW

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5.

ADD A, R	A+R A	Z, C, DC
ADD R, A	A+R R	Z, C, DC
AND A, R	A&R A	Z
AND R, A	A&R R	Z
CLRA	0 A	Z
CLR R	0 R	Z
INVA R	/R A	Z
INV R	/R R	Z
DA	A BCD	C
DECA R	R-1 A	Z
DEC R	R-1 R	Z
DJA R	R-1 A, skip if zero	-
DJ R	R-1 R, skip if zero	-
INCA R	R+1 A	Z
INC R	R+1 R	Z
IJA R	R+1 A, skip if zero	-
IJ R	R+1 R, skip if zero	-
MOV R, A	A R	-
MOV A, R	R A	Z
MOV R, R	R R	Z
OR A, R	A VR A	Z
OR R, A	A VR R	Z
SUB A, R	R-A A	Z, C, DC
SUB R, A	R-A R	Z, C, DC
XOR A, R	A R A	Z
XOR R, A	A R R	Z
IR R	IOCR A	-
IW R	A IOCR	-
CTR	CONT A	-
CTW	A CONT	-
BTC R, b	0 R(b)	-



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BTS R, b	1 R(b)	-
JBTC R, b	if R(b)=0, skip	-
JBTS R, b	if R(b)=1, skip	-
LCR R	R(n) R(n+1), R(7) C, C R(0)	C
LCA R	R(n) A(n+1), R(7) C, C A(0)	C
RCR R	R(n) R(n-1), R(0) C, C R(7)	C
RCA R	R(n) A(n-1), R(0) C, C A(7)	C
SWAP R	R(0-3) ↔ R(4-7)	-
SWAPA R	R(0-3) A(4-7), R(4-7) A(0-3)	-
ADD A, k	A+k A	Z, C, DC
AND A, k	A&k A	Z
MOV A, k	k A	-
OR A, k	A k A	Z
SUB A, k	k-A A	Z, C, DC
XOR A, k	A k A	Z
CALL k	PC+1 [SP], (Page, k) PC	-
DI		-
EI		-
JMP k	K (Page, k) PC	-
NOP		-
RET	[] PC	-
RETI	[] PC,	-
RETL k	k A, [] PC	-
SLEEP		T, P
CWDT	0 WDT	T, P

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6.

6.1

.....	-40	85
.....	-65	150
.....	Vss-0.3V	Vdd+0.5V
.....	Vss-0.3V	Vdd+0.5V
.....	1.8V-5.5V	

6.2

($V_{DD}=5V$ $=25$)

IRC1	IRC1	OPTION	8MHz	-	8	-	MHz
IRC2	IRC2	OPTION	1MHz	-	1	-	MHz
IRC3	IRC3	OPTION	910KHz	-	910	-	KHz
I OH1	I O P63	I oh=4.4V		10	11	12	mA
I OH2	I O P63	I oh=4.4V		5	5.5	6	mA
I OL1	I O P63	I ol=0.6V		13	14	15	mA
I OL2	I O P63	I ol=0.6V		11	12	13	mA
I PH1	P63			90	95	100	μ A
I PH2	P63			110	120	130	μ A
I PD	P63		VDD	45	50	55	μ A
I sb1	1		VDD	-	-	1	μ A
I op1	1 VDD=5V	IRC=8MHz	2clock	-	1.2	1.5	mA
I op2	2 VDD=5V	IRC=910KHz	2clock	-	0.2	0.3	mA
I op3	3 VDD=5V				5	8	μ A
LVR		LVR		V Vr-0.2	V Vr	V Vr+0.2	V
:							



6.3

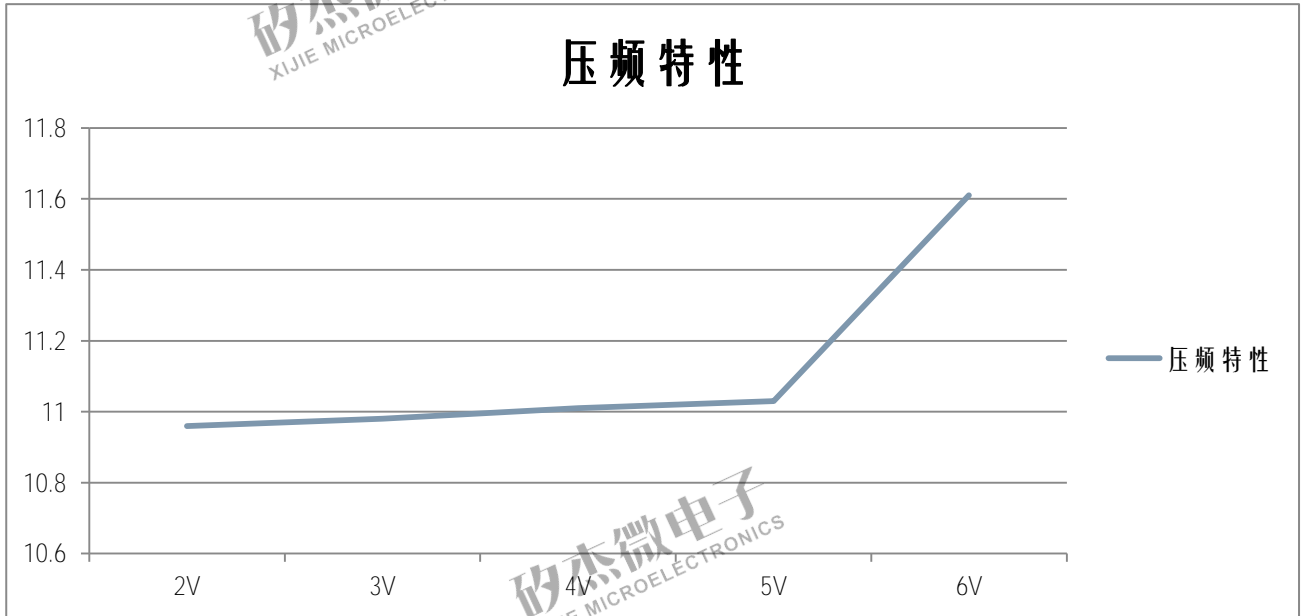
6.3.1

RC

-

25

(KHz)



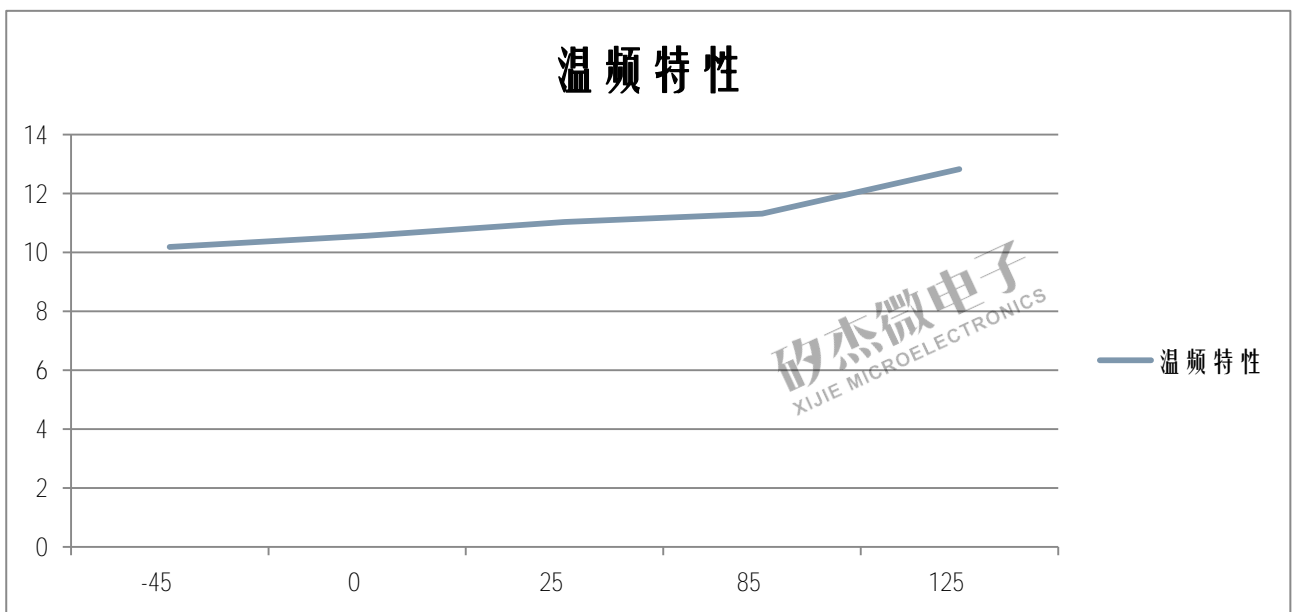
6.3.2

RC

-

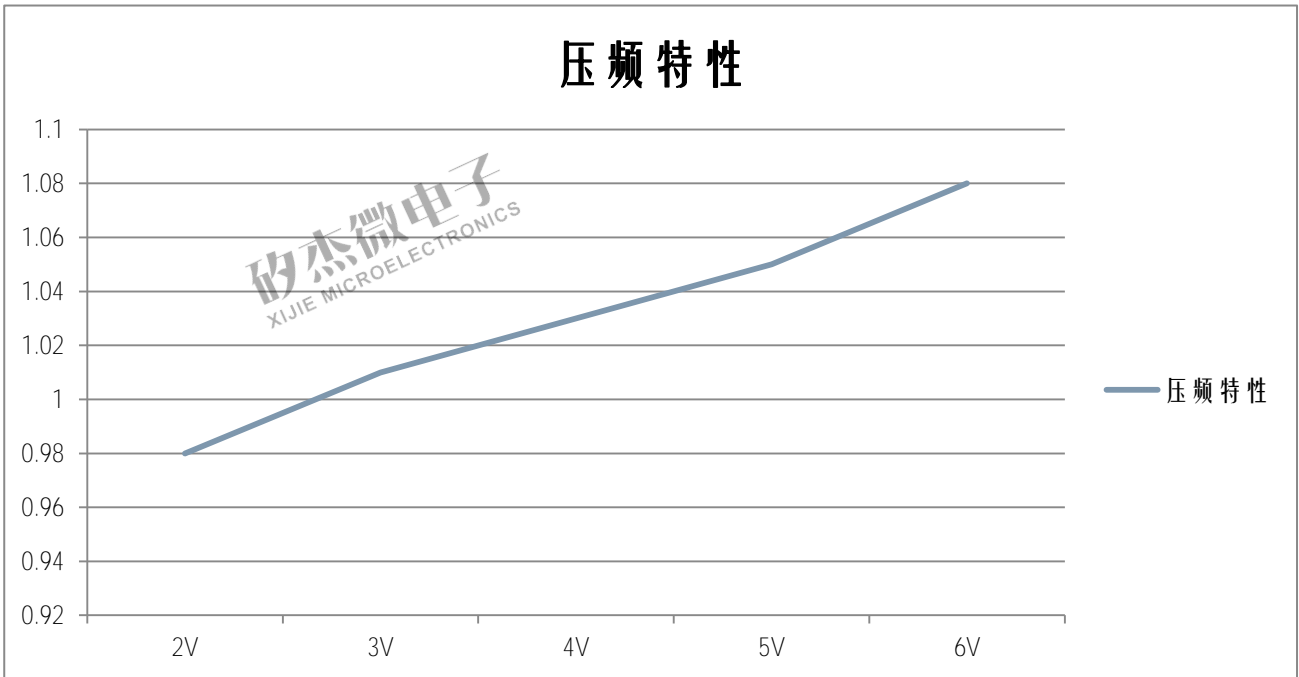
5V

(KHz)

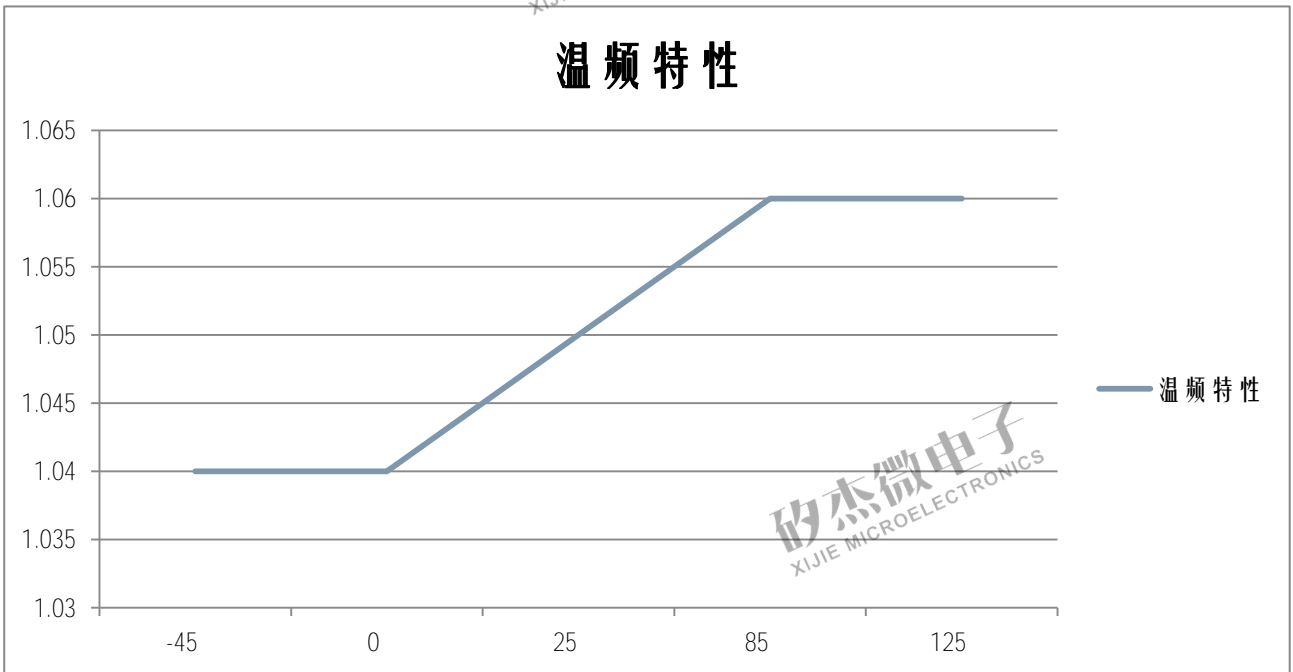




6.3.3 1MHz RC -
25 (MHz)



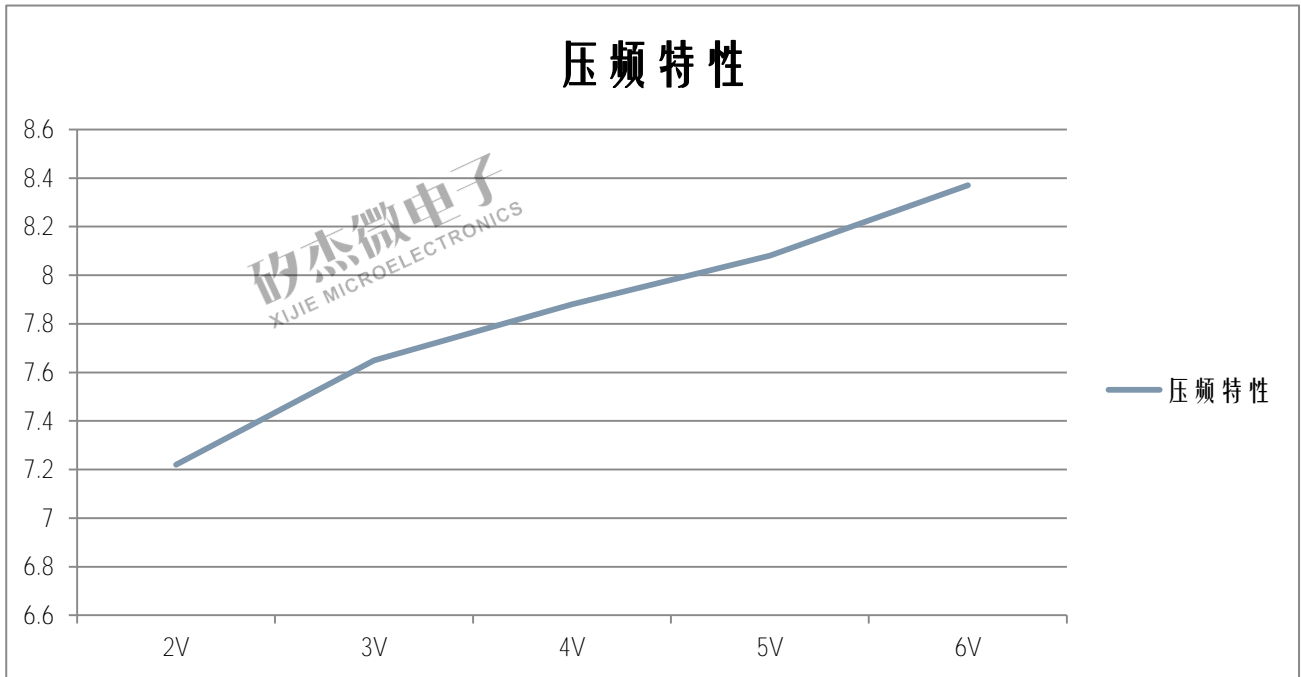
6.3.4 1MHz RC -
5V (MHz)





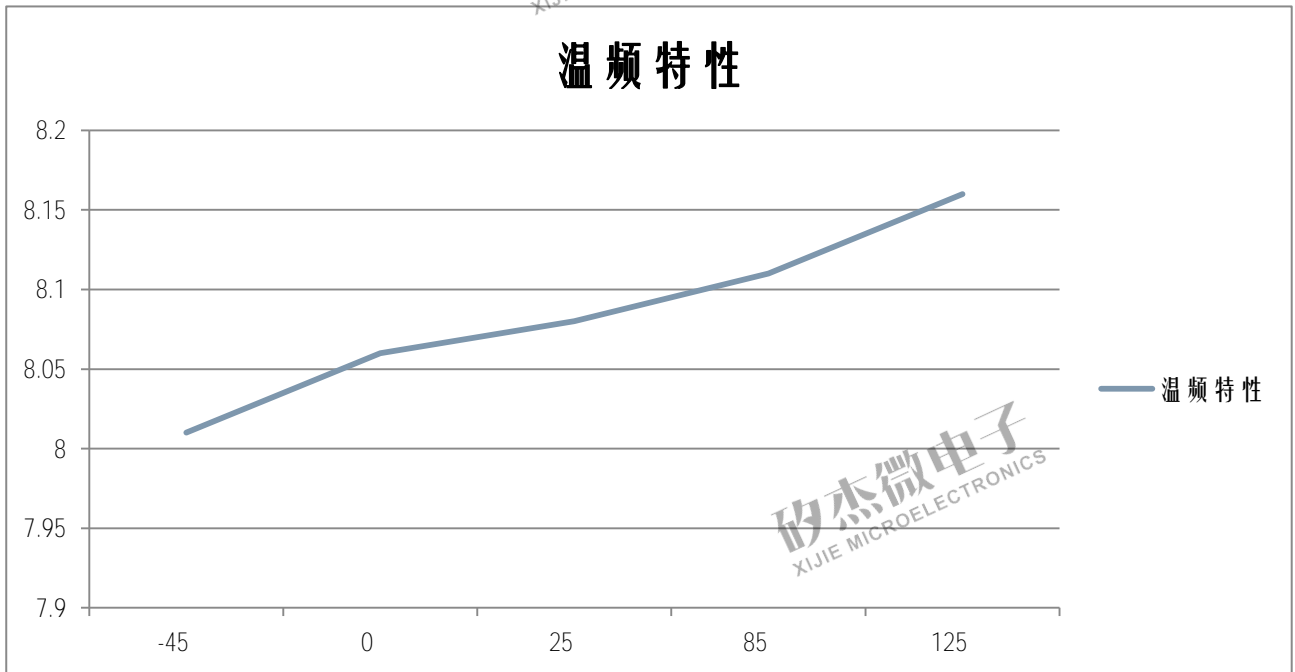
6.3.5 8MHz RC -

25 (MHz)



6.3.6 8MHz RC -

5V (MHz)

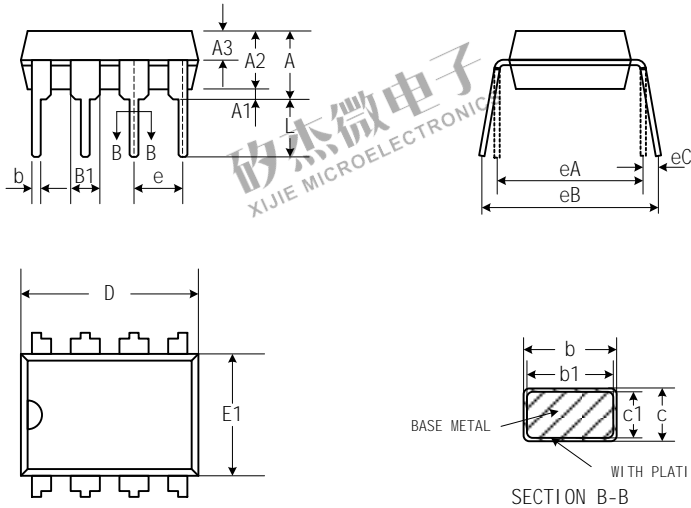




7.

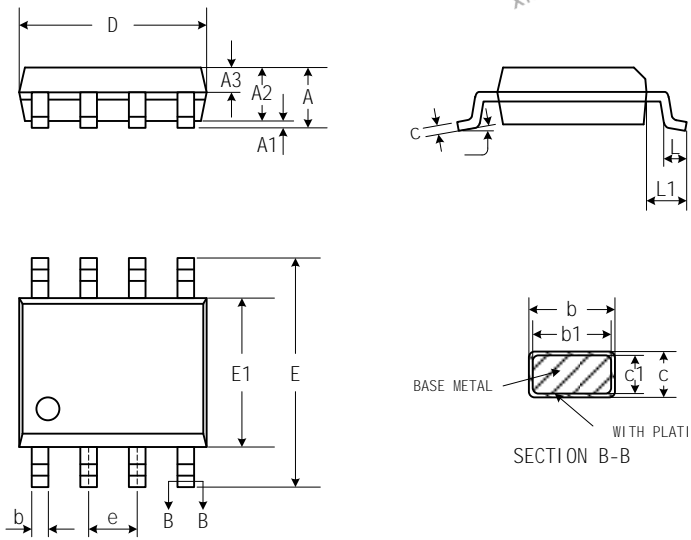
7.1 8PIN

DIP8



SYMBOL	MILLI METER		
	MIN	NOM	MAX
A	3.60	3.80	4.00
A1	0.51	-	-
A2	3.10	3.30	3.50
A3	1.50	1.60	1.70
b	0.44	-	0.53
b1	0.43	0.46	0.48
B1	1.52BSC		
c	0.25	-	0.31
c1	0.24	0.25	0.26
D	9.05	9.25	9.45
E1	6.15	6.35	6.55
e	2.54BSC		
eA	7.62BSC		
eB	7.62	-	9.50
eC	0	-	0.94
L	3.00	-	-

SOP8



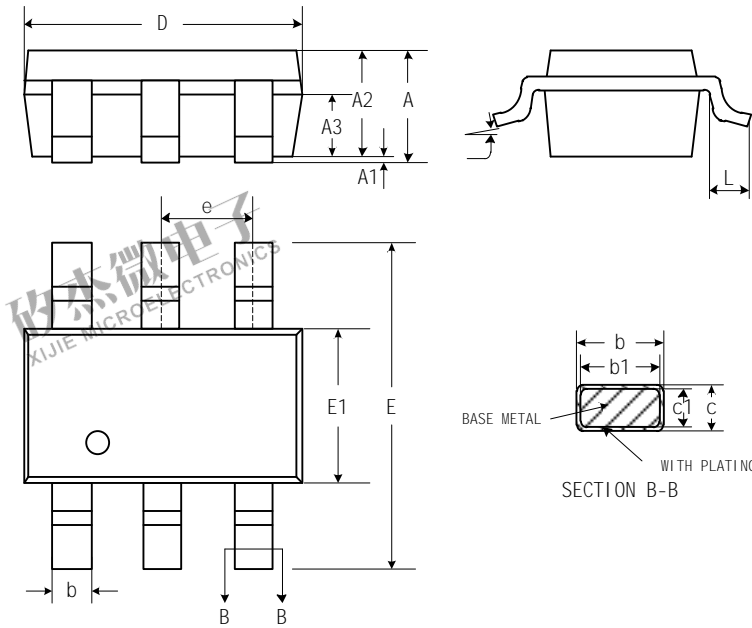
SYMBOL	MILLI METER		
	MIN	NOM	MAX
A	-	-	1.77
A1	0.08	0.18	0.28
A2	1.20	1.40	1.60
A3	0.55	0.65	0.75
b	0.39	-	0.48
b1	0.38	0.41	0.43
c	0.21	-	0.26
c1	0.19	0.20	0.21
D	4.70	4.90	5.10
E	5.80	6.00	6.20
E1	3.70	3.90	4.10
e	1.27BSC		
L	0.50	0.65	0.80
L1	1.05BSC		
	0	-	8°



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7.2 6PIN

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XIJIE MIC

Symbol	mm			Inch		
	MIN	NOM	MAX	MIN	NOM	MAX
A	—	—	1.35	—	—	0.053
A1	0.04	—	0.15	0.002	—	0.006
A2	1.00	1.10	1.20	0.039	0.043	0.047
A3	0.55	0.65	0.75	0.022	0.026	0.030
b	0.30	—	0.50	0.013	—	0.017
b1	0.30	0.40	0.45	0.013	0.016	0.018
c	0.08	—	0.22	0.006	—	0.008
c1	0.08	0.13	0.20	0.003	0.005	0.008
D	2.72	2.92	3.12	0.107	0.115	0.123
E	2.60	2.80	3.00	0.102	0.110	0.118
E1	1.40	1.60	1.80	0.055	0.063	0.071
e	0.95BSC			0.037BSC		
L	0.30	—	0.60	0.012	—	0.024
	0	—	8°	0	—	8°

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