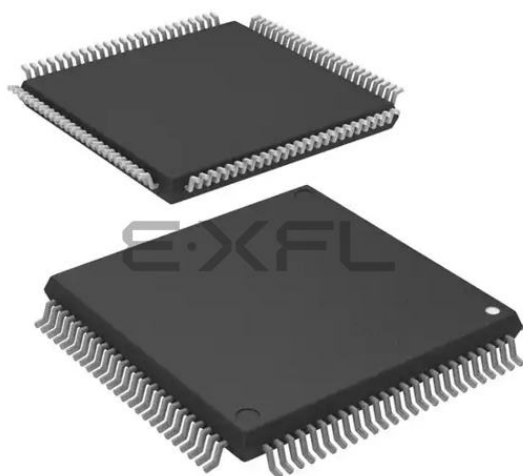




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Details

Product Status	Discontinued at Digi-Key
Core Processor	RX
Core Size	32-Bit Single-Core
Speed	50MHz
Connectivity	EBI/EMI, I ² C, SCI, SPI
Peripherals	DMA, LVD, POR, PWM, WDT
Number of I/O	84
Program Memory Size	256KB (256K x 8)
Program Memory Type	FLASH
EEPROM Size	8K x 8
RAM Size	32K x 8
Voltage - Supply (Vcc/Vdd)	1.62V ~ 5.5V
Data Converters	A/D 16x12b; D/A 2x10b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	100-LQFP
Supplier Device Package	100-LFQFP (14x14)
Purchase URL	https://www.e-xfl.com/product-detail/renesas-electronics-america/r5f52106bdfp-30

Table 1.10 List of Pins and Pin Functions (144-Pin LQFP) (1 / 4)

Pin No.	Power Supply, Clock, System Control	I/O Port	External Bus	Timers (MTU, TMR, POE)	Communications (SCIc, SCId, RSPI, RIIC)	Others
1	AVSS0					
2		P05				DA1
3	VREFH					
4		P03				DA0
5	VREFL					
6		P02		TMCI1	SCK6	
7		P01		TMCI0	RXD6/SMISO6/SSCL6	
8		P00		TMRI0	TXD6/SMOSI6/SSDA6	
9		PF5				IRQ4
10	NC					
11		PJ5				
12	VSS					
13		PJ3		MTIOC3C	CTS6#/RTS6#/SS6#/ CTS0#/RTS0#/SS0#	
14	VCL					
15		PJ1		MTIOC3A		
16	MD					FINED
17	XCIN					
18	XCOUT					
19	RES#					
20	XTAL	P37				
21	VSS					
22	EXTAL	P36				
23	VCC					
24		P35				NMI
25		P34		MTIOC0A/TMCI3/ POE2#	SCK6/SCK0	IRQ4
26		P33		MTIOC0D/TMRI3/ POE3#/TIOCD0	RXD6/SMISO6/SSCL6/ RXD0/SMISO0/SSCL0	IRQ3-DS
27		P32		MTIOC0C/TMO3/ TIOCC0	TXD6/SMOSI6/SSDA6/ TXD0/SMOSI0/SSDA0	IRQ2-DS/RTCOUT/ RTCIC2
28		P31		MTIOC4D/TMCI2	CTS1#/RTS1#/SS1#	IRQ1-DS/RTCIC1
29		P30		MTIOC4B/TMRI3/ POE8#	RXD1/SMISO1/SSCL1	IRQ0-DS/RTCIC0
30		P27	CS3#	MTIOC2B/TMCI3	SCK1	
31		P26	CS2#	MTIOC2A/TMO1	TXD1/SMOSI1/SSDA1/ CTS3#/RTS3#/SS3#	
32		P25	CS1#	MTIOC4C/MTCLKB/ TIOCA4	RXD3/SMISO3/SSCL3	ADTRG0#
33		P24	CS0#	MTIOC4A/MTCLKA/ TMRI1/TIOCB4	SCK3	
34		P23		MTIOC3D/MTCLKD/ TIOCD3	CTS0#/RTS0#/SS0#/ TXD3/SMOSI3/SSDA3	
35		P22		MTIOC3B/MTCLKC/ TMO0/TIOCC3	SCK0	
36		P21		MTIOC1B/TMCI0/ TIOCA3	RXD0/SMISO0/SSCL0	
37		P20		MTIOC1A/TMRI0/ TIOCB3	TXD0/SMOSI0/SSDA0	
38		P17		MTIOC3A/MTIOC3B/ TMO1/POE8#/TIOCB0/ TCLKD	SCK1/MISOA/SDA-DS/ TXD3/SMOSI3/SSDA3	IRQ7
39		P87		TIOCA2		

Table 1.11 List of Pins and Pin Functions (100-Pin TFLGA) (3 / 3)

Pin No.	Power Supply, Clock, System Control	I/O Port	External Bus	Timers (MTU, TMR, POE)	Communications (SCIc, SCId, RSPI, RIIC)	Others
J4		P13		MTIOC0B/TMO3	SDA	IRQ3
J5		PH0				CACREF
J6		PH3		TMCIO		
J7		P50	WR0#/WR#			
J8		PC4	A20/CS3#	MTIOC3D/MTCLKC/ TMC11/POE0#	SCK5/CTS8#/RTS8#/ SS8#/SSLA0	
J9		PC0	A16	MTIOC3C	CTS5#/RTS5#/SS5#/ SSLA1	
J10		PC1	A17	MTIOC3A	SCK5/SSLA2	
K1		P23		MTIOC3D/MTCLKD	CTS0#/RTS0#/SS0#	
K2		P22		MTIOC3B/MTCLKC/ TMO0	SCK0	
K3		P20		MTIOC1A/TMRI0	TXD0/SMOSI0/SSDA0	
K4		P14		MTIOC3A/MTCLKA/ TMRI2	CTS1#/RTS1#/SS1#	IRQ4
K5		PH2		TMRI0		IRQ1
K6		PH1		TMO0		IRQ0
K7		P51	WR1#/BC1#/WAIT#			
K8		PC5	A21/CS2#/WAIT#	MTIOC3B/MTCLKD/ TMRI2	SCK8/RSPCKA	
K9		PC3	A19	MTIOC4D	TXD5/SMOSI5/SSDA5	
K10		PC2	A18	MTIOC4B	RXD5/SMISO5/SSCL5/ SSLA3	

Note: • Pin names to which –DS is appended are for pins that can be used to trigger release from deep software standby mode.

Table 1.12 List of Pins and Pin Functions (100-Pin LQFP) (1 / 3)

Pin No.	Power Supply, Clock, System Control	I/O Port	External Bus	Timers (MTU, TMR, POE)	Communications (SCIc, SCId, RSPI, RIIC)	Others
1	VREFH					
2		P03				DA0
3	VREFL					
4		PJ3		MTIOC3C	CTS6#/RTS6#/SS6#	
5	VCL					
6		PJ1		MTIOC3A		
7	MD					FINED
8	XCIN					
9	XCOUT					
10	RES#					
11	XTAL	P37				
12	VSS					
13	EXTAL	P36				
14	VCC					
15		P35				NMI
16		P34		MTIOC0A/TMC13/POE2#	SCK6	IRQ4
17		P33		MTIOC0D/TMRI3/POE3#	RXD6/SMISO6/SSCL6	IRQ3-DS
18		P32		MTIOC0C/TMO3	TXD6/SMOSI6/SSDA6	IRQ2-DS/RTCCOUT/RTCCIC2
19		P31		MTIOC4D/TMC12	CTS1#/RTS1#/SS1#	IRQ1-DS/RTCCIC1
20		P30		MTIOC4B/TMRI3/POE8#	RXD1/SMISO1/SSCL1	IRQ0-DS/RTCCIC0
21		P27	CS3#	MTIOC2B/TMC13	SCK1	
22		P26	CS2#	MTIOC2A/TMO1	TXD1/SMOSI1/SSDA1	
23		P25	CS1#	MTIOC4C/MTCLKB		ADTRG0#
24		P24	CS0#	MTIOC4A/MTCLKA/TMRI1		
25		P23		MTIOC3D/MTCLKD	CTS0#/RTS0#/SS0#	
26		P22		MTIOC3B/MTCLKC/TMO0	SCK0	
27		P21		MTIOC1B/TMC10	RXD0/SMISO0/SSCL0	
28		P20		MTIOC1A/TMRI0	TXD0/SMOSI0/SSDA0	
29		P17		MTIOC3A/MTIOC3B/TMO1/POE8#	SCK1/MISOA/SDA-DS	IRQ7
30		P16		MTIOC3C/MTIOC3D/TMO2	TXD1/SMOSI1/SSDA1/MOSIA/SCL-DS	IRQ6/RTCCOUT/ADTRG0#
31		P15		MTIOC0B/MTCLKB/TMC12	RXD1/SMISO1/SSCL1	IRQ5
32		P14		MTIOC3A/MTCLKA/TMRI2	CTS1#/RTS1#/SS1#	IRQ4
33		P13		MTIOC0B/TMO3	SDA	IRQ3
34		P12		TMC11	SCL	IRQ2
35		PH3		TMC10		
36		PH2		TMRI0		IRQ1
37		PH1		TMO0		IRQ0
38		PH0				CACREF
39		P55	WAIT#	MTIOC4D/TMO3		
40		P54	ALE	MTIOC4B/TMC11		
41	BCLK	P53				

Table 1.12 List of Pins and Pin Functions (100-Pin LQFP) (2 / 3)

Pin No.	Power Supply, Clock, System Control	I/O Port	External Bus	Timers (MTU, TMR, POE)	Communications (SCIc, SCId, RSPI, RIIC)	Others
42		P52	RD#			
43		P51	WR1#/BC1#/WAIT#			
44		P50	WR0#/WR#			
45		PC7	A23/CS0#	MTIOC3A/TMO2/MTCLKB	TXD8/SMOSI8/SSDA8/MISOA	CACREF
46		PC6	A22/CS1#	MTIOC3C/MTCLKA/TMC12	RXD8/SMISO8/SSCL8/MOSIA	
47		PC5	A21/CS2#/WAIT#	MTIOC3B/MTCLKD/TMR12	SCK8/RSPCKA	
48		PC4	A20/CS3#	MTIOC3D/MTCLKC/TMC11/POE0#	SCK5/CTS8#/RTS8#/SS8#/SSLA0	
49		PC3	A19	MTIOC4D	TXD5/SMOSI5/SSDA5	
50		PC2	A18	MTIOC4B	RXD5/SMISO5/SSCL5/SSLA3	
51		PC1	A17	MTIOC3A	SCK5/SSLA2	
52		PC0	A16	MTIOC3C	CTS5#/RTS5#/SS5#/SSLA1	
53		PB7	A15	MTIOC3B	TXD9/SMOSI9/SSDA9	
54		PB6	A14	MTIOC3D	RXD9/SMISO9/SSCL9	
55		PB5	A13	MTIOC2A/MTIOC1B/TMR11/POE1#	SCK9	
56		PB4	A12		CTS9#/RTS9#/SS9#	
57		PB3	A11	MTIOC0A/MTIOC4A/TMO0/POE3#	SCK6	
58		PB2	A10		CTS6#/RTS6#/SS6#	
59		PB1	A9	MTIOC0C/MTIOC4C/TMC10	TXD6/SMOSI6/SSDA6	IRQ4-DS
60	VCC					
61		PB0	A8	MTIC5W	RXD6/SMISO6/SSCL6/RSPCKA	
62	VSS					
63		PA7	A7		MISOA	
64		PA6	A6	MTIC5V/MTCLKB/TMC13/POE2#	CTS5#/RTS5#/SS5#/MOSIA	
65		PA5	A5		RSPCKA	
66		PA4	A4	MTIC5U/MTCLKA/TMR10	TXD5/SMOSI5/SSDA5/SSLA0	IRQ5-DS/CVREFB1
67		PA3	A3	MTIOC0D/MTCLKD	RXD5/SMISO5/SSCL5	IRQ6-DS/CMPB1
68		PA2	A2		RXD5/SMISO5/SSCL5/SSLA3	
69		PA1	A1	MTIOC0B/MTCLKC	SCK5/SSLA2	CVREFA
70		PA0	A0/BC0#	MTIOC4A	SSLA1	CACREF
71		PE7	D15[A15/D15]			IRQ7/AN015
72		PE6	D14[A14/D14]			IRQ6/AN014
73		PE5	D13[A13/D13]	MTIOC4C/MTIOC2B		IRQ5/AN013
74		PE4	D12[A12/D12]	MTIOC4D/MTIOC1A		AN012/CMPA2
75		PE3	D11[A11/D11]	MTIOC4B/POE8#	CTS12#/RTS12#/SS12#	AN011/CMPA1
76		PE2	D10[A10/D10]	MTIOC4A	RXD12/RXD12/SMISO12/SSCL12	IRQ7-DS/AN010/CVREFB0
77		PE1	D9[A9/D9]	MTIOC4C	TXD12/TXD12/SIOX12/SMOSI12/SSDA12	AN009/CMPB0
78		PE0	D8[A8/D8]		SCK12	AN008
79		PD7	D7[A7/D7]	MTIC5U/POE0#		IRQ7

Table 1.15 List of Pins and Pin Functions (64-Pin TFLGA) (2 / 2)

Pin No.	Power Supply, Clock, System Control	I/O Port	Timers (MTU, TMR, POE)	Communication (SCIc, SCId, RSPI, RIIC)	Others
F5		P15	MTIOC0B/MTCLKB/TMCi2	RXD1/SMISO1/SSCL1	IRQ5
F6		PB1	MTIOC0C/MTIOC4C/TMCi0	TXD6/SMOSI6/SSDA6	IRQ4-DS
F7		PB5	MTIOC2A/MTIOC1B/TMRI1/ POE1#	SCK9	
F8		PB3	MTIOC0A/MTIOC4A/TMO0/ POE3#	SCK6	
G1	EXTAL	P36			
G2		P26	MTIOC2A/TMO1	TXD1/SMOSI1/SSDA1	
G3		PH3	TMCi0		
G4		PH0			CACREF
G5		PC7	MTIOC3A/TMO2/MTCLKB	TXD8/SMOSI8/SSDA8/MISOA	CACREF
G6		PC6	MTIOC3C/MTCLKA/TMCi2	RXD8/SMISO8/SSCL8/MOSIA	
G7		PC3	MTIOC4D	TXD5/SMOSI5/SSDA5	
G8		PB6	MTIOC3D	RXD9/SMISO9/SSCL9	
H1	XTAL	P37			
H2		P17	MTIOC3A/MTIOC3B/TMO1/ POE8#	SCK1/MISOA/SDA-DS	IRQ7
H3		PH2	TMRI0		IRQ1
H4		PH1	TMO0		IRQ0
H5		P55	MTIOC4D/TMO3		
H6		P54	MTIOC4B/TMCi1		
H7		PC2	MTIOC4B	RXD5/SMISO5/SSCL5/SSLA3	
H8		PB7	MTIOC3B	TXD9/SMOSI9/SSDA9	

Note: • Pin names to which -DS is appended are for pins that can be used to trigger release from deep software standby mode.

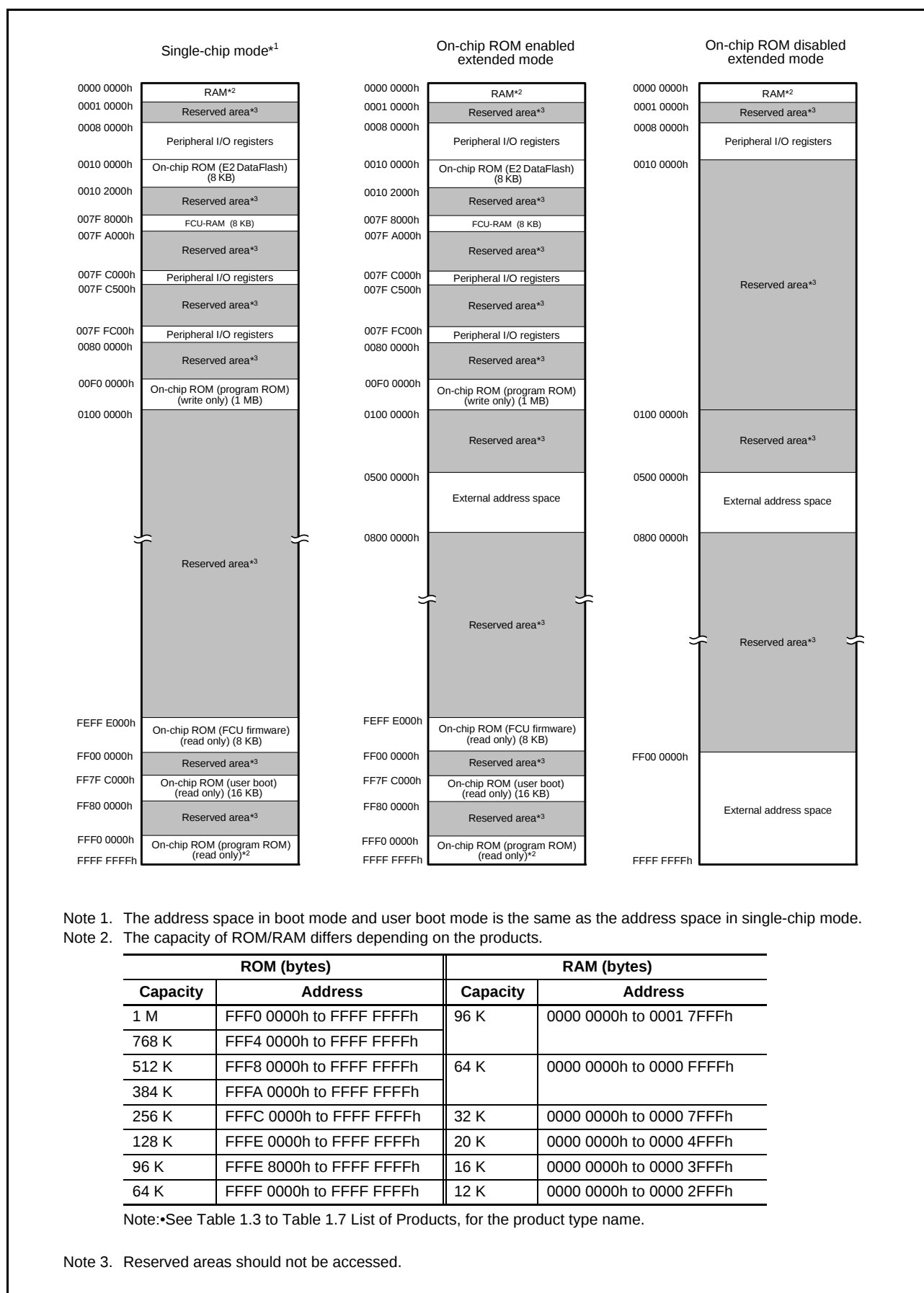


Figure 3.1 Memory Map in Each Operating Mode

Table 4.1 List of I/O Registers (Address Order) (4 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK $\geq$ PCLK	ICLK $<$ PCLK
0008 7076h	ICU	Interrupt request register 118	IR118	8	8	2 ICLK	
0008 7077h	ICU	Interrupt request register 119	IR119	8	8	2 ICLK	
0008 7078h	ICU	Interrupt request register 120	IR120	8	8	2 ICLK	
0008 7079h	ICU	Interrupt request register 121	IR121	8	8	2 ICLK	
0008 707Ah	ICU	Interrupt request register 122	IR122	8	8	2 ICLK	
0008 707Bh	ICU	Interrupt request register 123	IR123	8	8	2 ICLK	
0008 707Ch	ICU	Interrupt request register 124	IR124	8	8	2 ICLK	
0008 707Dh	ICU	Interrupt request register 125	IR125	8	8	2 ICLK	
0008 707Eh	ICU	Interrupt request register 126	IR126	8	8	2 ICLK	
0008 707Fh	ICU	Interrupt request register 127	IR127	8	8	2 ICLK	
0008 7080h	ICU	Interrupt request register 128	IR128	8	8	2 ICLK	
0008 7081h	ICU	Interrupt request register 129	IR129	8	8	2 ICLK	
0008 7082h	ICU	Interrupt request register 130	IR130	8	8	2 ICLK	
0008 7083h	ICU	Interrupt request register 131	IR131	8	8	2 ICLK	
0008 7084h	ICU	Interrupt request register 132	IR132	8	8	2 ICLK	
0008 7085h	ICU	Interrupt request register 133	IR133	8	8	2 ICLK	
0008 7086h	ICU	Interrupt request register 134	IR134	8	8	2 ICLK	
0008 7087h	ICU	Interrupt request register 135	IR135	8	8	2 ICLK	
0008 7088h	ICU	Interrupt request register 136	IR136	8	8	2 ICLK	
0008 7089h	ICU	Interrupt request register 137	IR137	8	8	2 ICLK	
0008 708Ah	ICU	Interrupt request register 138	IR138	8	8	2 ICLK	
0008 708Bh	ICU	Interrupt request register 139	IR139	8	8	2 ICLK	
0008 708Ch	ICU	Interrupt request register 140	IR140	8	8	2 ICLK	
0008 708Dh	ICU	Interrupt request register 141	IR141	8	8	2 ICLK	
0008 708Eh	ICU	Interrupt request register 142	IR142	8	8	2 ICLK	
0008 708Fh	ICU	Interrupt request register 143	IR143	8	8	2 ICLK	
0008 7090h	ICU	Interrupt request register 144	IR144	8	8	2 ICLK	
0008 7091h	ICU	Interrupt request register 145	IR145	8	8	2 ICLK	
0008 7092h	ICU	Interrupt request register 146	IR146	8	8	2 ICLK	
0008 7093h	ICU	Interrupt request register 147	IR147	8	8	2 ICLK	
0008 7094h	ICU	Interrupt request register 148	IR148	8	8	2 ICLK	
0008 7095h	ICU	Interrupt request register 149	IR149	8	8	2 ICLK	
0008 7096h	ICU	Interrupt request register 150	IR150	8	8	2 ICLK	
0008 7097h	ICU	Interrupt request register 151	IR151	8	8	2 ICLK	
0008 7098h	ICU	Interrupt request register 152	IR152	8	8	2 ICLK	
0008 7099h	ICU	Interrupt request register 153	IR153	8	8	2 ICLK	
0008 709Ah	ICU	Interrupt request register 154	IR154	8	8	2 ICLK	
0008 709Bh	ICU	Interrupt request register 155	IR155	8	8	2 ICLK	
0008 709Ch	ICU	Interrupt request register 156	IR156	8	8	2 ICLK	
0008 709Dh	ICU	Interrupt request register 157	IR157	8	8	2 ICLK	
0008 709Eh	ICU	Interrupt request register 158	IR158	8	8	2 ICLK	
0008 709Fh	ICU	Interrupt request register 159	IR159	8	8	2 ICLK	
0008 70A0h	ICU	Interrupt request register 160	IR160	8	8	2 ICLK	
0008 70A1h	ICU	Interrupt request register 161	IR161	8	8	2 ICLK	
0008 70A2h	ICU	Interrupt request register 162	IR162	8	8	2 ICLK	
0008 70A3h	ICU	Interrupt request register 163	IR163	8	8	2 ICLK	
0008 70A4h	ICU	Interrupt request register 164	IR164	8	8	2 ICLK	
0008 70A5h	ICU	Interrupt request register 165	IR165	8	8	2 ICLK	
0008 70A6h	ICU	Interrupt request register 166	IR166	8	8	2 ICLK	
0008 70A7h	ICU	Interrupt request register 167	IR167	8	8	2 ICLK	
0008 70AAh	ICU	Interrupt request register 170	IR170	8	8	2 ICLK	

Table 4.1 List of I/O Registers (Address Order) (5 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK $\geq$ PCLK	ICLK $<$ PCLK
0008 70ABh	ICU	Interrupt request register 171	IR171	8	8	2 ICLK	
0008 70AEh	ICU	Interrupt request register 174	IR174	8	8	2 ICLK	
0008 70AFh	ICU	Interrupt request register 175	IR175	8	8	2 ICLK	
0008 70B0h	ICU	Interrupt request register 176	IR176	8	8	2 ICLK	
0008 70B1h	ICU	Interrupt request register 177	IR177	8	8	2 ICLK	
0008 70B2h	ICU	Interrupt request register 178	IR178	8	8	2 ICLK	
0008 70B3h	ICU	Interrupt request register 179	IR179	8	8	2 ICLK	
0008 70B4h	ICU	Interrupt request register 180	IR180	8	8	2 ICLK	
0008 70B5h	ICU	Interrupt request register 181	IR181	8	8	2 ICLK	
0008 70B6h	ICU	Interrupt request register 182	IR182	8	8	2 ICLK	
0008 70B7h	ICU	Interrupt request register 183	IR183	8	8	2 ICLK	
0008 70B8h	ICU	Interrupt request register 184	IR184	8	8	2 ICLK	
0008 70B9h	ICU	Interrupt request register 185	IR185	8	8	2 ICLK	
0008 70BAh	ICU	Interrupt request register 186	IR186	8	8	2 ICLK	
0008 70BBh	ICU	Interrupt request register 187	IR187	8	8	2 ICLK	
0008 70BCh	ICU	Interrupt request register 188	IR188	8	8	2 ICLK	
0008 70BDh	ICU	Interrupt request register 189	IR189	8	8	2 ICLK	
0008 70BEh	ICU	Interrupt request register 190	IR190	8	8	2 ICLK	
0008 70BFh	ICU	Interrupt request register 191	IR191	8	8	2 ICLK	
0008 70C0h	ICU	Interrupt request register 192	IR192	8	8	2 ICLK	
0008 70C1h	ICU	Interrupt request register 193	IR193	8	8	2 ICLK	
0008 70C2h	ICU	Interrupt request register 194	IR194	8	8	2 ICLK	
0008 70C3h	ICU	Interrupt request register 195	IR195	8	8	2 ICLK	
0008 70C4h	ICU	Interrupt request register 196	IR196	8	8	2 ICLK	
0008 70C5h	ICU	Interrupt request register 197	IR197	8	8	2 ICLK	
0008 70C6h	ICU	Interrupt request register 198	IR198	8	8	2 ICLK	
0008 70C7h	ICU	Interrupt request register 199	IR199	8	8	2 ICLK	
0008 70C8h	ICU	Interrupt request register 200	IR200	8	8	2 ICLK	
0008 70C9h	ICU	Interrupt request register 201	IR201	8	8	2 ICLK	
0008 70CEh	ICU	Interrupt request register 206	IR206	8	8	2 ICLK	
0008 70CFh	ICU	Interrupt request register 207	IR207	8	8	2 ICLK	
0008 70D0h	ICU	Interrupt request register 208	IR208	8	8	2 ICLK	
0008 70D1h	ICU	Interrupt request register 209	IR209	8	8	2 ICLK	
0008 70D2h	ICU	Interrupt request register 210	IR210	8	8	2 ICLK	
0008 70D3h	ICU	Interrupt request register 211	IR211	8	8	2 ICLK	
0008 70D4h	ICU	Interrupt request register 212	IR212	8	8	2 ICLK	
0008 70D5h	ICU	Interrupt request register 213	IR213	8	8	2 ICLK	
0008 70D6h	ICU	Interrupt request register 214	IR214	8	8	2 ICLK	
0008 70D7h	ICU	Interrupt request register 215	IR215	8	8	2 ICLK	
0008 70D8h	ICU	Interrupt request register 216	IR216	8	8	2 ICLK	
0008 70D9h	ICU	Interrupt request register 217	IR217	8	8	2 ICLK	
0008 70DAh	ICU	Interrupt request register 218	IR218	8	8	2 ICLK	
0008 70DBh	ICU	Interrupt request register 219	IR219	8	8	2 ICLK	
0008 70DCh	ICU	Interrupt request register 220	IR220	8	8	2 ICLK	
0008 70DDh	ICU	Interrupt request register 221	IR221	8	8	2 ICLK	
0008 70DEh	ICU	Interrupt request register 222	IR222	8	8	2 ICLK	
0008 70DFh	ICU	Interrupt request register 223	IR223	8	8	2 ICLK	
0008 70E0h	ICU	Interrupt request register 224	IR224	8	8	2 ICLK	
0008 70E1h	ICU	Interrupt request register 225	IR225	8	8	2 ICLK	
0008 70E2h	ICU	Interrupt request register 226	IR226	8	8	2 ICLK	
0008 70E3h	ICU	Interrupt request register 227	IR227	8	8	2 ICLK	

Table 4.1 List of I/O Registers (Address Order) (25 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK $\geq$ PCLK	ICLK < PCLK
0008 C080	PORT0	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C082h	PORT1	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C083h	PORT1	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C084h	PORT2	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C085h	PORT2	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C086h	PORT3	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C087h	PORT3	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C08Ch	PORT6	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C08Eh	PORT7	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C08Fh	PORT7	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C090h	PORT8	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C092h	PORT9	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C094h	PORTA	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C095h	PORTA	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C096h	PORTB	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C097h	PORTB	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C098h	PORTC	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C099h	PORTC	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C09Ch	PORTE	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C09Dh	PORTE	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C0A6h	PORTK	Open drain control register 0	ODR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C0A7h	PORTK	Open drain control register 1	ODR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C0C0h	PORT0	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C1h	PORT1	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C2h	PORT2	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C3h	PORT3	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C4h	PORT4	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C5h	PORT5	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C6h	PORT6	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C7h	PORT7	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C8h	PORT8	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0C9h	PORT9	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CAh	PORTA	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CBh	PORTB	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CCh	PORTC	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CDh	PORTD	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CEh	PORTE	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0CFh	PORTF	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0D1h	PORTH	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0D2h	PORTJ	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0D3h	PORTK	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0D4h	PORTL	Pull-up control register	PCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E0h	PORT0	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E1h	PORT1	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E2h	PORT2	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E3h	PORT3	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E5h	PORT5	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E6h	PORT6	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E7h	PORT7	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E8h	PORT8	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0E9h	PORT9	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK

Table 4.1 List of I/O Registers (Address Order) (26 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK ≥ PCLK	ICLK < PCLK
0008 C0EAh	PORTA	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0EBh	PORTB	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0ECh	PORTC	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0EDh	PORTD	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0EEh	PORTE	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0F1h	PORTH	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0F2h	PORTJ	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C0F3h	PORTK	Drive capacity control register	DSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C100h	MPC	CS output enable register	PFCSE	8	8	2, 3 PCLKB	2 ICLK
0008 C104h	MPC	Address output enable register 0	PFAOE0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C105h	MPC	Address output enable register 1	PFAOE1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C106h	MPC	External bus control register 0	PFBCR0	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C107h	MPC	External bus control register 1	PFBCR1	8	8, 16	2, 3 PCLKB	2 ICLK
0008 C11Fh	MPC	Write-protect register	PWPR	8	8	2, 3 PCLKB	2 ICLK
0008 C140h	MPC	P00 pin function control register	P00PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C141h	MPC	P01 pin function control register	P01PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C142h	MPC	P02 pin function control register	P02PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C143h	MPC	P03 pin function control register	P03PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C145h	MPC	P05 pin function control register	P05PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C147h	MPC	P07 pin function control register	P07PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Ah	MPC	P12 pin function control register	P12PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Bh	MPC	P13 pin function control register	P13PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Ch	MPC	P14 pin function control register	P14PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Dh	MPC	P15 pin function control register	P15PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Eh	MPC	P16 pin function control register	P16PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C14Fh	MPC	P17 pin function control register	P17PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C150h	MPC	P20 pin function control register	P20PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C151h	MPC	P21 pin function control register	P21PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C152h	MPC	P22 pin function control register	P22PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C153h	MPC	P23 pin function control register	P23PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C154h	MPC	P24 pin function control register	P24PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C155h	MPC	P25 pin function control register	P25PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C156h	MPC	P26 pin function control register	P26PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C157h	MPC	P27 pin function control register	P27PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C158h	MPC	P30 pin function control register	P30PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C159h	MPC	P31 pin function control register	P31PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C15Ah	MPC	P32 pin function control register	P32PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C15Bh	MPC	P33 pin function control register	P33PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C15Ch	MPC	P34 pin function control register	P34PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C160h	MPC	P40 pin function control register	P40PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C161h	MPC	P41 pin function control register	P41PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C162h	MPC	P42 pin function control register	P42PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C163h	MPC	P43 pin function control register	P43PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C164h	MPC	P44 pin function control register	P44PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C165h	MPC	P45 pin function control register	P45PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C166h	MPC	P46 pin function control register	P46PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C167h	MPC	P47 pin function control register	P47PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C168h	MPC	P50 pin function control register	P50PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C169h	MPC	P51 pin function control register	P51PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C16Ah	MPC	P52 pin function control register	P52PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C16Ch	MPC	P54 pin function control register	P54PFS	8	8	2, 3 PCLKB	2 ICLK

Table 4.1 List of I/O Registers (Address Order) (28 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK ≥ PCLK	ICLK < PCLK
0008 C1B0h	MPC	PE0 pin function control register	PE0PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B1h	MPC	PE1 pin function control register	PE1PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B2h	MPC	PE2 pin function control register	PE2PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B3h	MPC	PE3 pin function control register	PE3PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B4h	MPC	PE4 pin function control register	PE4PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B5h	MPC	PE5 pin function control register	PE5PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B6h	MPC	PE6 pin function control register	PE6PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1B7h	MPC	PE7 pin function control register	PE7PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1BDh	MPC	PF5 pin function control register	PF5PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1C8h	MPC	PH0 pin function control register	PH0PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1C9h	MPC	PH1 pin function control register	PH1PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1CAh	MPC	PH2 pin function control register	PH2PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1CBh	MPC	PH3 pin function control register	PH3PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1D1h	MPC	PJ1 pin function control register	PJ1PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1D3h	MPC	PJ3 pin function control register	PJ3PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1DAh	MPC	PK2 pin function control register	PK2PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1DBh	MPC	PK3 pin function control register	PK3PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1DCh	MPC	PK4 pin function control register	PK4PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C1DDh	MPC	PK5 pin function control register	PK5PFS	8	8	2, 3 PCLKB	2 ICLK
0008 C280h	SYSTEM	Deep standby control register	DPSBYCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C282h	SYSTEM	Deep standby interrupt enable register 0	DPSIER0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C284h	SYSTEM	Deep standby interrupt enable register 2	DPSIER2	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C286h	SYSTEM	Deep standby interrupt flag register 0	DPSIFR0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C288h	SYSTEM	Deep standby interrupt flag register 2	DPSIFR2	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C28Ah	SYSTEM	Deep standby interrupt edge register 0	DPSIEGR0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C28Ch	SYSTEM	Deep standby interrupt edge register 2	DPSIEGR2	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C28Fh	SYSTEM	Flash HOCO software standby control register	FHSSBYCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C290h	SYSTEM	Reset status register 0	RSTSR0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C291h	SYSTEM	Reset status register 1	RSTSR1	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C293h	SYSTEM	Main clock oscillator forced oscillation control register	MOFCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C294h	SYSTEM	High-speed clock oscillator power supply control register	HOCOPCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C295h	SYSTEM	PLL power control register	PLLPCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C296h	FLASH	Flash write erase protection register	FWEPROR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C297h	SYSTEM	Voltage monitoring circuit/comparator A control register	LVCMPCR	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C298h	SYSTEM	Voltage detection level select register	LVDLVL	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C29Ah	SYSTEM	Voltage monitoring 1 circuit/comparator A1 control register 0	LVD1CR0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C29Bh	SYSTEM	Voltage monitoring 2 circuit/comparator A2 control register 0	LVD2CR0	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C2A0h to 0008 C2BFh	SYSTEM	Deep standby backup register 0 to 31	DPSBKR0 to DPSBKR31	8	8	4, 5 PCLKB	2, 3 ICLK
0008 C400h	RTC	64-Hz counter	R64CNT	8	8	2, 3 PCLKB	2 ICLK
0008 C402h	RTC	Second counter	RSECCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C404h	RTC	Minute counter	RMINCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C406h	RTC	Hour counter	RHRCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C408h	RTC	Day-of-week counter	RWKCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C40Ah	RTC	Date counter	RDAYCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C40Ch	RTC	Month counter	RMONCNT	8	8	2, 3 PCLKB	2 ICLK
0008 C40Eh	RTC	Year counter	RYRCNT	16	16	2, 3 PCLKB	2 ICLK
0008 C410h	RTC	Second alarm register	RSECAR	8	8	2, 3 PCLKB	2 ICLK
0008 C412h	RTC	Minute alarm register	RMINAR	8	8	2, 3 PCLKB	2 ICLK
0008 C414h	RTC	Hour alarm register	RHRAR	8	8	2, 3 PCLKB	2 ICLK
0008 C416h	RTC	Day-of-week alarm register	RWKAR	8	8	2, 3 PCLKB	2 ICLK
0008 C418h	RTC	Date alarm register	RDAYAR	8	8	2, 3 PCLKB	2 ICLK

Table 4.1 List of I/O Registers (Address Order) (29 / 29)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access Cycles	
						ICLK ≥ PCLK	ICLK < PCLK
0008 C41Ah	RTC	Month alarm register	RMONAR	8	8	2, 3 PCLKB	2 ICLK
0008 C41Ch	RTC	Year alarm register	RYRAR	16	16	2, 3 PCLKB	2 ICLK
0008 C41Eh	RTC	Year alarm enable register	RYRAREN	8	8	2, 3 PCLKB	2 ICLK
0008 C422h	RTC	RTC control register 1	RCR1	8	8	2, 3 PCLKB	2 ICLK
0008 C424h	RTC	RTC control register 2	RCR2	8	8	2, 3 PCLKB	2 ICLK
0008 C426h	RTC	RTC control register 3	RCR3	8	8	2, 3 PCLKB	2 ICLK
0008 C42Eh	RTC	Time error adjustment register	RADJ	8	8	2, 3 PCLKB	2 ICLK
0008 C440h	RTC	Time capture control register 0	RTCCR0	8	8	2, 3 PCLKB	2 ICLK
0008 C442h	RTC	Time capture control register 1	RTCCR1	8	8	2, 3 PCLKB	2 ICLK
0008 C444h	RTC	Time capture control register 2	RTCCR2	8	8	2, 3 PCLKB	2 ICLK
0008 C452h	RTC	Second capture register 0	RSECCP0	8	8	2, 3 PCLKB	2 ICLK
0008 C454h	RTC	Minute capture register 0	RMINCP0	8	8	2, 3 PCLKB	2 ICLK
0008 C456h	RTC	Hour capture register 0	RHRCP0	8	8	2, 3 PCLKB	2 ICLK
0008 C45Ah	RTC	Date capture register 0/	RDAYCP0	8	8	2, 3 PCLKB	2 ICLK
0008 C45Ch	RTC	Month capture register 0	RMONCP0	8	8	2, 3 PCLKB	2 ICLK
0008 C462h	RTC	Second capture register 1	RSECCP1	8	8	2, 3 PCLKB	2 ICLK
0008 C464h	RTC	Minute capture register 1	RMINCP1	8	8	2, 3 PCLKB	2 ICLK
0008 C466h	RTC	Hour capture register 1	RHRCP1	8	8	2, 3 PCLKB	2 ICLK
0008 C46Ah	RTC	Date capture register 1	RDAYCP1	8	8	2, 3 PCLKB	2 ICLK
0008 C46Ch	RTC	Month capture register 1	RMONCP1	8	8	2, 3 PCLKB	2 ICLK
0008 C472h	RTC	Second capture register 2	RSECCP2	8	8	2, 3 PCLKB	2 ICLK
0008 C474h	RTC	Minute capture register 2	RMINCP2	8	8	2, 3 PCLKB	2 ICLK
0008 C476h	RTC	Hour capture register 2	RHRCP2	8	8	2, 3 PCLKB	2 ICLK
0008 C47Ah	RTC	Date capture register 2	RDAYCP2	8	8	2, 3 PCLKB	2 ICLK
0008 C47Ch	RTC	Month capture register 2	RMONCP2	8	8	2, 3 PCLKB	2 ICLK
0008 C500h	TEMPS	Temperature sensor control register	TSCR	8	8	2, 3 PCLKB	2 ICLK
0008 C580h	CMPB	Comparator B control register 1	CPBCNT1	8	8	2, 3 PCLKB	2 ICLK
0008 C582h	CMPB	Comparator B flag register	CPBFLG	8	8	2, 3 PCLKB	2 ICLK
0008 C583h	CMPB	Comparator B interrupt control register	CPBINT	8	8	2, 3 PCLKB	2 ICLK
0008 C584h	CMPB	Comparator B filter select register	CPBF	8	8	2, 3 PCLKB	2 ICLK
007F C402h	FLASH	Flash mode register	FMODR	8	8	2, 3 FCLK	2 ICLK
007F C410h	FLASH	Flash access status register	FASTAT	8	8	2, 3 FCLK	2 ICLK
007F C411h	FLASH	Flash access error interrupt enable register	FAEINT	8	8	2, 3 FCLK	2 ICLK
007F C412h	FLASH	Flash ready interrupt enable register	FRDYIE	8	8	2, 3 FCLK	2 ICLK
007F C440h	FLASH	E2 DataFlash read enable register 0	DFLRE0	16	16	2, 3 FCLK	2 ICLK
007F C450h	FLASH	E2 DataFlash programming/erasure enable register 0	DFLWE0	16	16	2, 3 FCLK	2 ICLK
007F C454h	FLASH	FCU RAM enable register	FCURAME	16	16	2, 3 FCLK	2 ICLK
007F FFB0h	FLASH	Flash status register 0	FSTATR0	8	8	2, 3 FCLK	2 ICLK
007F FFB1h	FLASH	Flash status register 1	FSTATR1	8	8	2, 3 FCLK	2 ICLK
007F FFB2h	FLASH	Flash P/E mode entry register	FENTRYR	16	16	2, 3 FCLK	2 ICLK
007F FFB4h	FLASH	Flash protection register	FPROTR	16	16	2, 3 FCLK	2 ICLK
007F FFB6h	FLASH	Flash reset register	FRESETR	16	16	2, 3 FCLK	2 ICLK
007F FFBAh	FLASH	FCU command register	FCMDR	16	16	2, 3 FCLK	2 ICLK
007F FFC8h	FLASH	FCU processing switching register	FCPSR	16	16	2, 3 FCLK	2 ICLK
007F FFCAh	FLASH	E2 DataFlash blank check control register	DFLBCCNT	16	16	2, 3 FCLK	2 ICLK
007F FFCCh	FLASH	Flash P/E status register	FPESTAT	16	16	2, 3 FCLK	2 ICLK
007F FFCEh	FLASH	E2 DataFlash blank check status register	DFLBCSTAT	16	16	2, 3 FCLK	2 ICLK
007F FFE8h	FLASH	Peripheral clock notification register	PCKAR	16	16	2, 3 FCLK	2 ICLK

Note 1. Odd addresses cannot be accessed in 16-bit units. When accessing a register in 16-bit units, access the address of the TMR0 or TMR2 register.

Note 2. Odd addresses cannot be accessed in 16-bit units. When accessing a register in 16-bit units, access the address of the TMOCNTL register.

[Chip version B with 256 Kbytes or less of flash memory and 48 to 100 pins]

Table 5.12 DC Characteristics (11)

Conditions: $V_{CC} = AVCC0 = 2.7$ to 5.5 V, $V_{SS} = AVSS0 = VREFL = VREFL0 = 0$ V, $T_a = -40$ to $+105^\circ\text{C}$

Item					Symbol	Typ.	Max.	Unit	Test Conditions
Supply current*1	High-speed operating mode	Normal operating mode	No peripheral operation*2	ICLK = 50 MHz	I _{CC}	7.2	—	mA	
			All peripheral operation: Normal*3	ICLK = 50 MHz		23.5	—		
			All peripheral operation: Max.*3	ICLK = 50 MHz		—	45		
		Sleep mode	No peripheral operation	ICLK = 50 MHz		4.3	—		
			All peripheral operation: Normal	ICLK = 50 MHz		12	—		
		All-module clock stop mode		ICLK = 50 MHz		3.7	—		
		Increase during BGO operation*4				20	—		

Note 1. Supply current values do not include output charge/discharge current from all pins. The values apply when internal pull-up MOSs are in the off state.

Note 2. Clock supply to the peripheral functions is stopped. This does not include BGO operation. The clock source is PLL and the VCO oscillation frequency is 100 MHz. BCLK, FCLK, and PCLK are set to divided by 64.

Note 3. Clocks are supplied to the peripheral functions. This does not include BGO operation. The clock source is PLL and the VCO oscillation frequency is 100 MHz. BCLK, FCLK, and PCLK are ICLK divided by 2.

Note 4. This is the increase if data is programmed to or erasing from the ROM or E2 DataFlash during program execution.

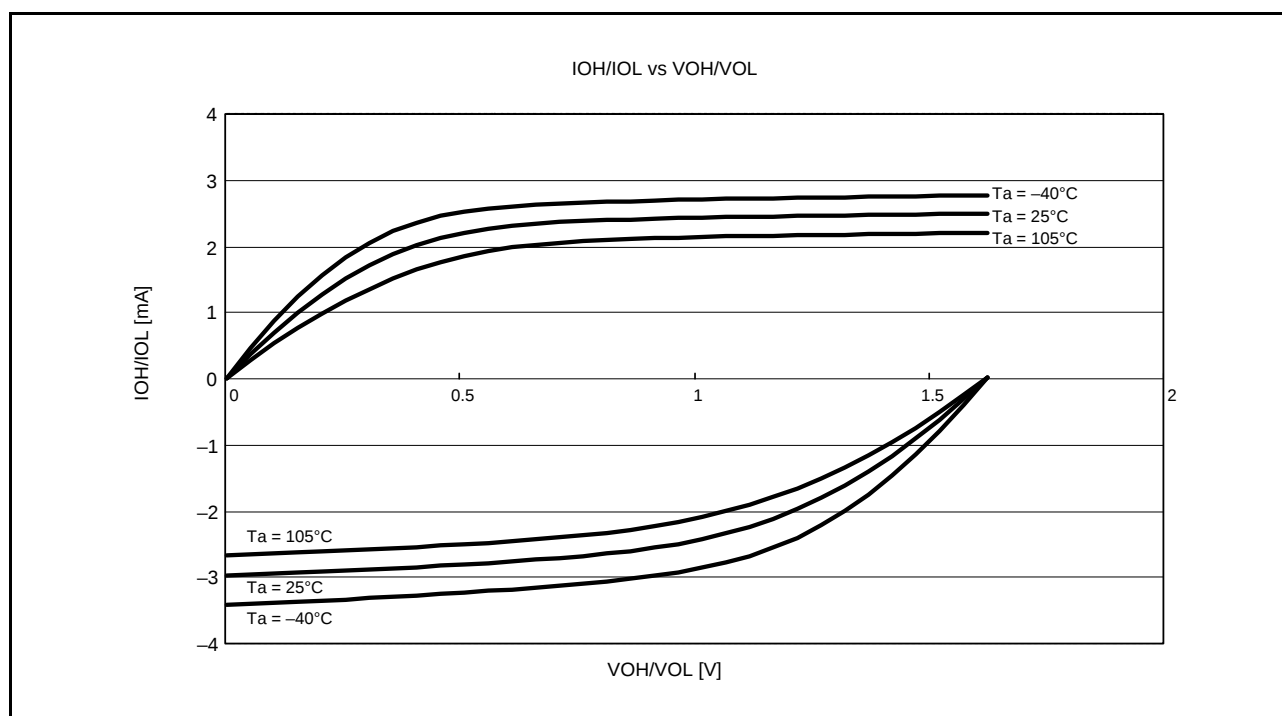


Figure 5.46 VOH/VOL and IOH/IOL Temperature Characteristics at VCC = 1.62 V when Normal Output is Selected (Reference Data)

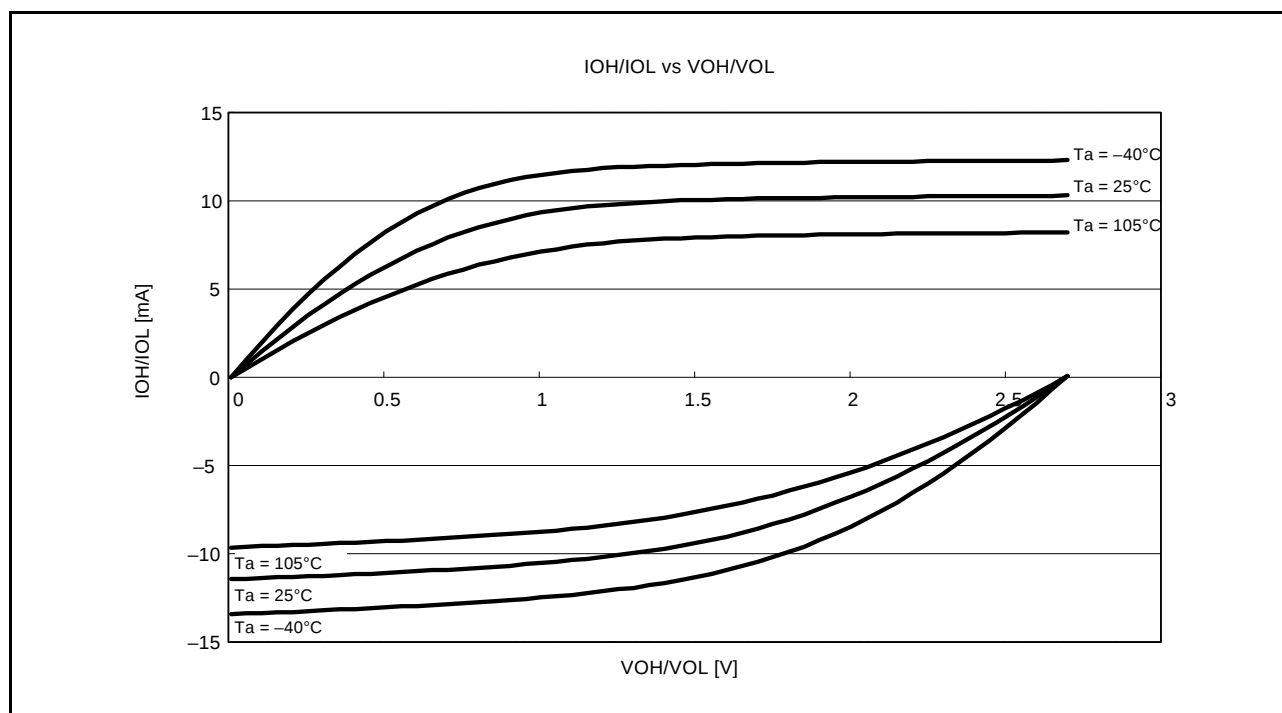


Figure 5.47 VOH/VOL and IOH/IOL Temperature Characteristics at VCC = 2.7 V when Normal Output is Selected (Reference Data)

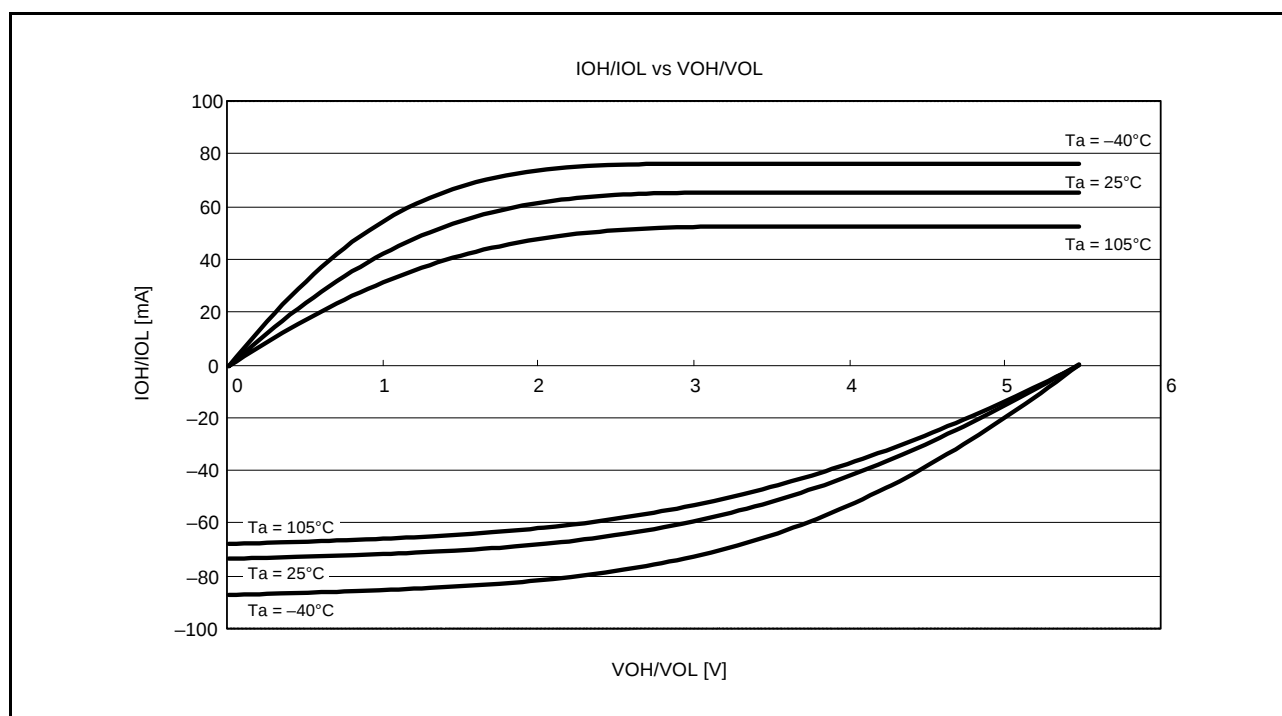


Figure 5.54 VOH/VOL and IOH/IOL Temperature Characteristics at VCC = 5.5 V when High-Drive Output is Selected (Reference Data)

5.2.3 RIIC Pin Output Characteristics

Figure 5.55 to Figure 5.58 show the output characteristics of the RIIC pin.

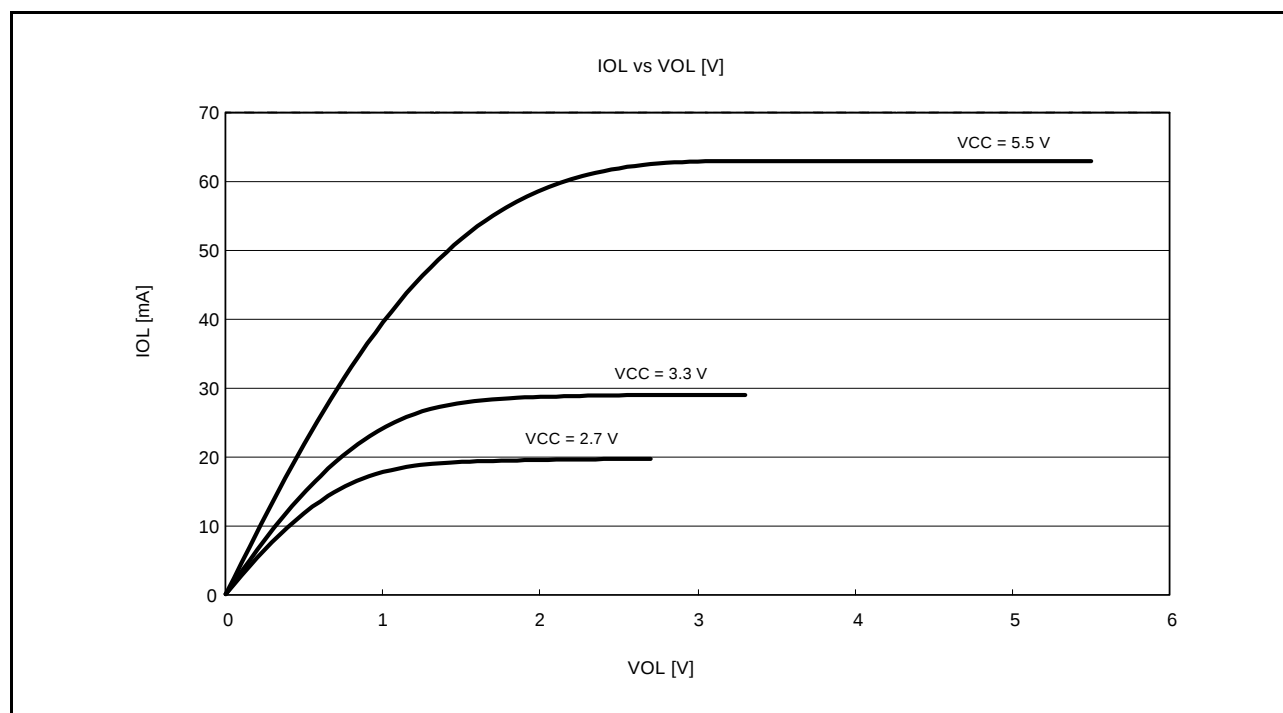


Figure 5.55 VOL and IOL Voltage Characteristics of RIIC Output Pin at $T_a = 25^\circ\text{C}$ (Reference Data)

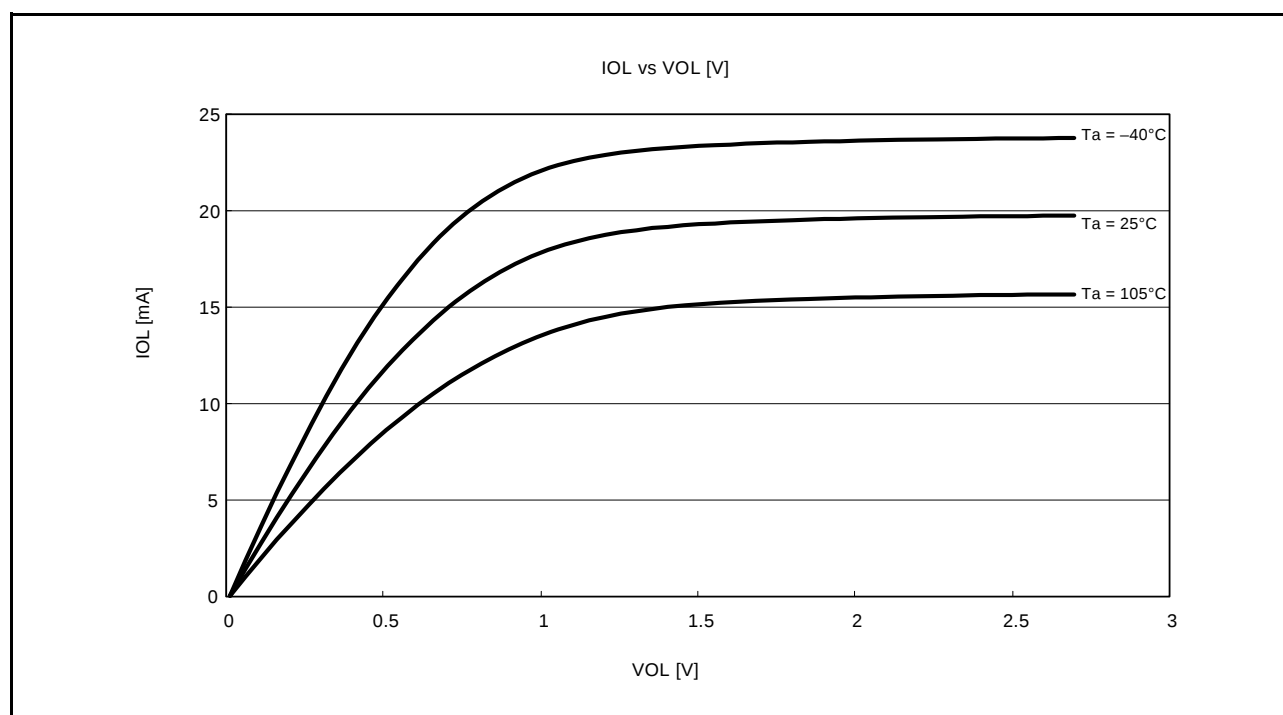


Figure 5.56 VOL and IOL Temperature Characteristics of RIIC Output Pin at $V_{CC} = 2.7\text{ V}$ (Reference Data)

5.3.5 Bus Timing

Table 5.49 Bus Timing (1)

Conditions: $V_{CC} = AVCC0 = 2.7$ to 5.5 V, $V_{SS} = AVSS0 = V_{REFL} = V_{REFL0} = 0$ V,
 $f_{BCLK} \leq 25$ MHz (BCLK pin output frequency ≤ 12.5 MHz), $T_a = -40$ to $+105^\circ\text{C}$, $V_{OH} = V_{CC} \times 0.5$,
 $V_{OL} = V_{CC} \times 0.5$, $I_{OH} = -1.0$ mA, $I_{OL} = 1.0$ mA, $C_L = 30$ pF
 When normal output is selected by the drive capacity register

Item	Symbol	Min.	Max.	Unit	Test Conditions
Address delay time	t_{AD}	—	60	ns	Figure 5.76 to Figure 5.79
Byte control delay time	t_{BCD}	—	60	ns	
CS# delay time	t_{CSD}	—	60	ns	
RD# delay time	t_{RSD}	—	60	ns	
Read data setup time	t_{RDS}	40	—	ns	
Read data hold time	t_{RDH}	0	—	ns	
WR# delay time	t_{WRD}	—	60	ns	
Write data delay time	t_{WDD}	—	60	ns	
Write data hold time	t_{WDH}	0	—	ns	
WAIT# setup time	t_{WTS}	40	—	ns	Figure 5.80
WAIT# hold time	t_{WTH}	0	—	ns	

Table 5.50 Bus Timing (2)

Conditions: $V_{CC} = AVCC0 = 1.8$ to 2.7 V, $V_{SS} = AVSS0 = V_{REFL} = V_{REFL0} = 0$ V,
 $f_{BCLK} \leq 16$ MHz (BCLK pin output frequency ≤ 8 MHz), $T_a = -40$ to $+105^\circ\text{C}$, $V_{OH} = V_{CC} \times 0.5$,
 $V_{OL} = V_{CC} \times 0.5$, $I_{OH} = -1.0$ mA, $I_{OL} = 1.0$ mA, $C_L = 30$ pF
 When normal output is selected by the drive capacity register

Item	Symbol	Min.	Max.	Unit	Test Conditions
Address delay time	t_{AD}	—	90	ns	Figure 5.76 to Figure 5.79
Byte control delay time	t_{BCD}	—	90	ns	
CS# delay time	t_{CSD}	—	90	ns	
RD# delay time	t_{RSD}	—	90	ns	
Read data setup time	t_{RDS}	60	—	ns	
Read data hold time	t_{RDH}	0	—	ns	
WR# delay time	t_{WRD}	—	90	ns	
Write data delay time	t_{WDD}	—	90	ns	
Write data hold time	t_{WDH}	0	—	ns	
WAIT# setup time	t_{WTS}	60	—	ns	Figure 5.80
WAIT# hold time	t_{WTH}	0	—	ns	

Table 5.54 Bus Timing (Multiplexed Bus) (3)

Conditions: $V_{CC} = AVCC0 = 1.62$ to 1.8 V, $V_{SS} = AVSS0 = V_{REFL} = V_{REFL0} = 0$ V,
 $f_{BCLK} \leq 12$ MHz (BCLK pin output frequency ≤ 6 MHz), $T_a = -40$ to $+105^\circ\text{C}$, $V_{OH} = V_{CC} \times 0.5$,
 $V_{OL} = V_{CC} \times 0.5$, $I_{OH} = -0.5$ mA, $I_{OL} = 0.5$ mA, $C_L = 30$ pF
 When normal output is selected by the drive capacity register

Item	Symbol	Min.	Typ.	Max.	Unit
Address delay time	t_{AD}	—	125	ns	Figure 5.81 and Figure 5.82
Byte control delay time	t_{BCD}	—	125	ns	
CS# delay time	t_{CSD}	—	125	ns	
RD# delay time	t_{RSD}	—	125	ns	
ALE delay time	t_{ALED}	—	125	ns	
Read data setup time	t_{RDS}	85	—	ns	
Read data hold time	t_{RDH}	0	—	ns	
WR# delay time	t_{WRD}	—	125	ns	
Write data delay time	t_{WDD}	—	125	ns	
Write data hold time	t_{WDH}	0	—	ns	
WAIT# setup time	t_{WTS}	85	—	ns	Figure 5.80
WAIT# hold time	t_{WTH}	0	—	ns	

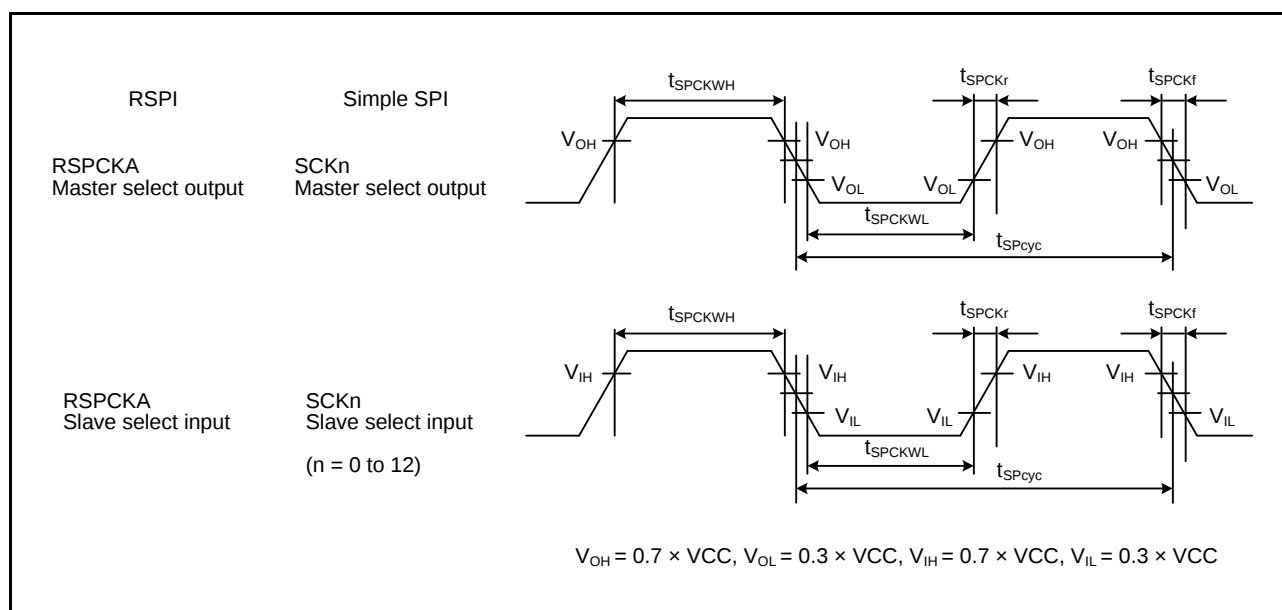


Figure 5.91 RSPI Clock Timing and Simple SPI Clock Timing

[Chip version B]

Table 5.84 E2 DataFlash Characteristics (5)
: high-speed operating mode, middle-speed operating modes 1A and 2A

Conditions: VCC = AVCC0 = 2.7 to 5.5 V, VREFH = VREFH0 = AVCC0, VSS = AVSS0 = VREFL = VREFL0 = 0 V

Temperature range for the programming/erasure operation: T_a = -40 to +105°C

Item		Symbol	FCLK = 4 MHz			FCLK = 32 MHz			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Programming time when N _{DPEC} ≤ 100 times	2 bytes	t _{DP2}	—	0.19	4.4	—	0.13	2.0	ms
	8 bytes	t _{DP8}	—	0.24	5.1	—	0.13	2.2	
Programming time when N _{DPEC} > 100 times	2 bytes	t _{DP2}	—	0.25	6.4	—	0.17	3.0	ms
	8 bytes	t _{DP8}	—	0.32	7.5	—	0.18	3.2	
Erasure time when N _{DPEC} ≤ 100 times	128 bytes	t _{DE128}	—	3.3	27.1	—	2.5	8	ms
Erasure time when N _{DPEC} > 100 times	128 bytes	t _{DE128}	—	4.0	45.1	—	3.0	12	ms
Blank check time	2 bytes	t _{DBC2}	—	—	98	—	—	35	μs
	2 Kbytes	t _{DBC2K}	—	—	16	—	—	2.5	ms
Suspend delay time during programming (in programming/erasure priority mode)		t _{DSPD}	—	—	0.9	—	—	0.8	ms
First suspend delay time during programming (in suspend priority mode)		t _{DSPSD1}	—	—	220	—	—	120	μs
Second suspend delay time during programming (in suspend priority mode)		t _{DSPSD2}	—	—	0.9	—	—	0.8	ms
Suspend delay time during erasing (in programming/erasure priority mode)		t _{DSED}	—	—	0.9	—	—	0.8	ms
First suspend delay time during erasing (in suspend priority mode)		t _{DSESD1}	—	—	220	—	—	120	μs
Second suspend delay time during erasing (in suspend priority mode)		t _{DSESD2}	—	—	0.9	—	—	0.8	ms