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April 1st, 2010
Renesas Electronics Corporation

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4286 Group, 4283 Group

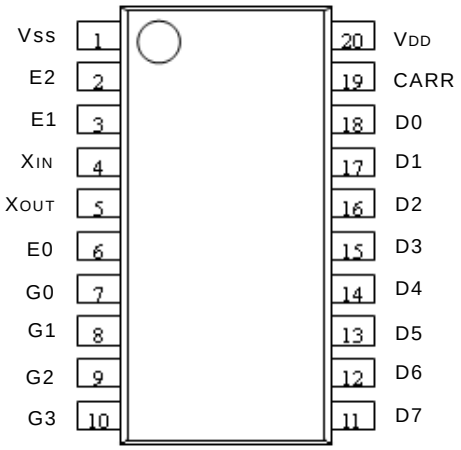
Differences between 4286 Group and 4283 Group

1. The Performance Overview Differences

Parameter		Function	
		4286 Group	4283 Group
Number of basic instructions		72 (CCK2, CCK4, CLVD, TPU2A instructions added)	68
Minimum instruction execution time		2 us (at f(XIN) = 4 MHz, system clock = f(XIN)/2)	8 us (at f(XIN) = 4 MHz, system clock = f(XIN)/8)
Input/Output ports	D0~D3	Four independent I/O ports with the pull-down function and key-on wakeup function	Four independent output ports
System clock division circuit	No instruction executed	f(XIN)/8	f(XIN)/8
	CCK executed	f(XIN)	f(XIN)
	CCK2 executed	f(XIN)/2	—
	CCK4 executed	f(XIN)/4	—
Voltage drop detection circuit	Reset occurrence	CLVD not executed: 1.5 V (Ta = 25℃, Typical value)	1.5 V (Ta = 25℃, Typical value)
		CLVD executed: 1.7 V (Ta = 25℃, Typical value)	
	Reset release	CLVD not executed: 1.7 V (Ta = 25℃, Typical value)	1.5 V (Ta = 25℃, Typical value)
		CLVD executed: 1.7 V (Ta = 25℃, Typical value)	
Operating temperature range		-40 ~ 85℃	-20 ~ 85℃

2. Pin Configuration Differences

4286 Group Pin Configuration (Top View)



PLSP0020JB-A (20P2F-A)

4283 Group pin configuration is the same as 4286 Group

3. Control Register Differences

Pull-down control register PU2			4286 Group			4283 Group
			At reset: 0000_2	At RAM back-up: state remained	W	
$PU2_3$	Port D_3 Pull-down transistor control bit	0	Pull-down transistor OFF, key-on wakeup invalid			4283 Group does not have this register
		1	Pull-down transistor ON, key-on wakeup valid			
$PU2_2$	Port D_2 Pull-down transistor control bit	0	Pull-down transistor OFF, key-on wakeup invalid			
		1	Pull-down transistor ON, key-on wakeup valid			
$PU2_1$	Port D_1 Pull-down transistor control bit	0	Pull-down transistor OFF, key-on wakeup invalid			
		1	Pull-down transistor ON, key-on wakeup valid			
$PU2_0$	Port D_0 Pull-down transistor control bit	0	Pull-down transistor OFF, key-on wakeup invalid			
		1	Pull-down transistor ON, key-on wakeup valid			

4. The Added Instruction for 4286 Group

Mnemonic	Instruction code	Function	Detailed description
CCK2	019_{16}	STCK changes to $f(X_{IN})/2$	System clock (STCK) changes to $f(X_{IN})/2$ from $f(X_{IN})/8$
CCK4	$02D_{16}$	STCK changes to $f(X_{IN})/4$	System clock (STCK) changes to $f(X_{IN})/4$ from $f(X_{IN})/8$
CLVD	$02E_{16}$	Detection voltage VRST-:1.5 V→1.7 V	Detection voltage change from 1.5 V to 1.7 V (Ta = 25℃, Typical value)
TPU2A	$08D_{16}$	$(PU2_3\text{-}PU2_0) \leftarrow (A_3\text{-}A_0)$	Transfer the contents of register A to register PU2

5. Reference Document

Datasheet
4286 Group Datasheet
4283 Group Datasheet
(Use the most recent version of the document on the Renesas Technology Website.)

Technical News/Technical Updates
(Use the most recent version of the document on the Renesas Technology Website.)

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REVISION HISTORY	4286 Group, 4283 Group Differences between 4286 Group and 4283 Group

Rev.	Date	Description	
		Page	Summary
1.00	Oct 29, 2008	—	First edition issued

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