3850 Group

Difference between Standard ver. and Spec.A

Renesas Technology Corp.

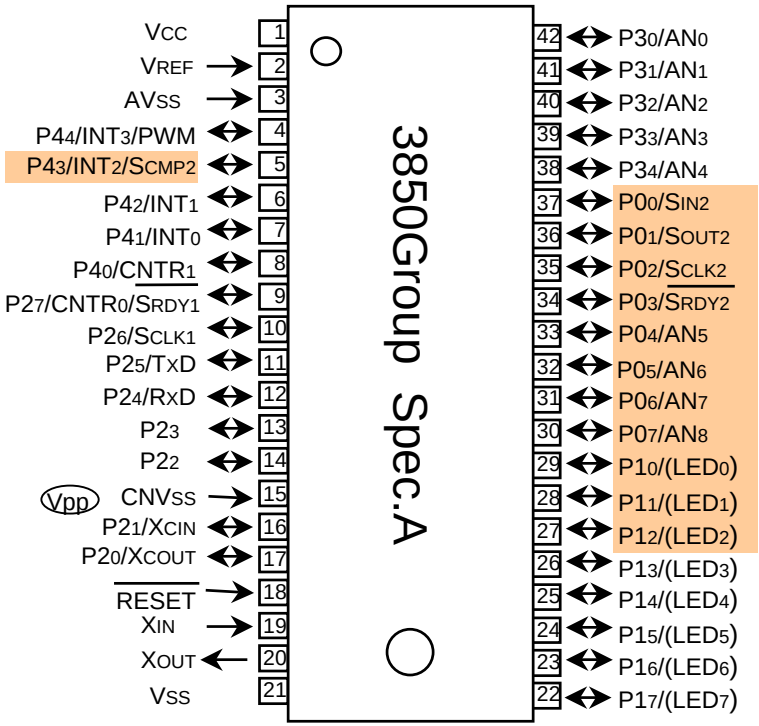
REJ99B0047-0100

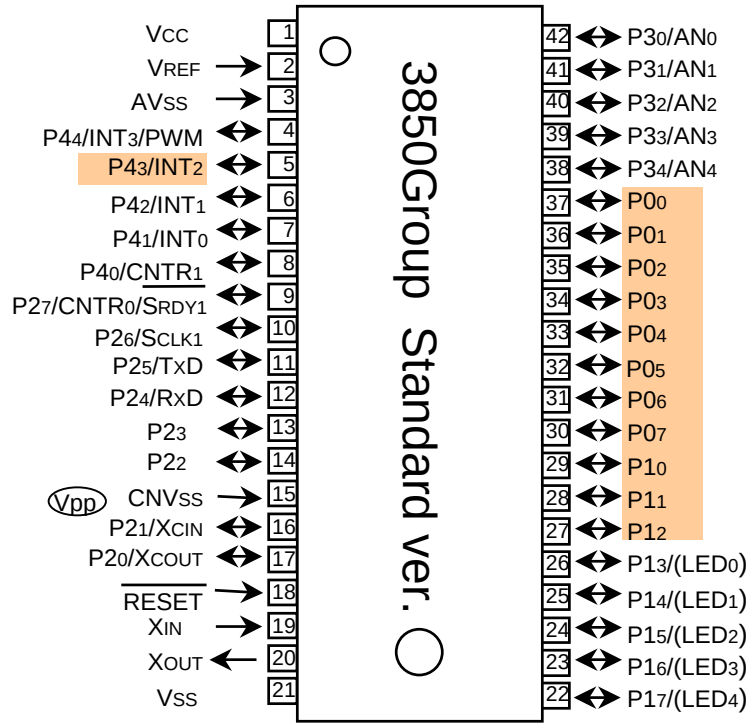
Difference among 3850 Groups (Spec.A and Standard ver.)

		3850Group(Spec.A)	3850 Group(standard ver.)
Related Products		M38503M2A-XXXSP/FP M38503M4A-XXXSP/FP M38504M6A-XXXSP/FP M38507M8A-XXXSP/FP M38507F8ASP/FP M38507ARLSS	M38503M2-XXXSP/FP M38503M4-XXXSP/FP M38503E4SP/FP M38503E4SS
Serial I/O		2 channels; UART/Clock synchronous X 1 Clock synchronous X 1	1 channel; UART/Clock synchronous X 1
A-D converter		Serviceable in low-speed mode	Unserviceable in low-speed mode
A-D channels		9 channels	5 channels
Large Current port		8 ports : $P1_0$-$P1_7$	5 ports : $P1_3$-$P1_7$
Software pull-up resister		Built in (Port P0 – P4)	–
Max.f(XIN)		12.5MHz	8MHz
ROM size		Mask: 8K,16K,24K,32K Flash: 32K PROM: –	Mask: 8K,16K Flash:– PROM:16K
Absolute maximum ratings	Vcc	-0.3 to 6.5V	-0.3 to 7.0V
	VI CNVss	-0.3 to Vcc+0.3V(Mask ROM version) -0.3 to 6.5V(Flash Memory version)	-0.3 to 13V(Mask ROM version and PROM version)

Differences in Pin configuration

Differences Spec.A and Standard Version



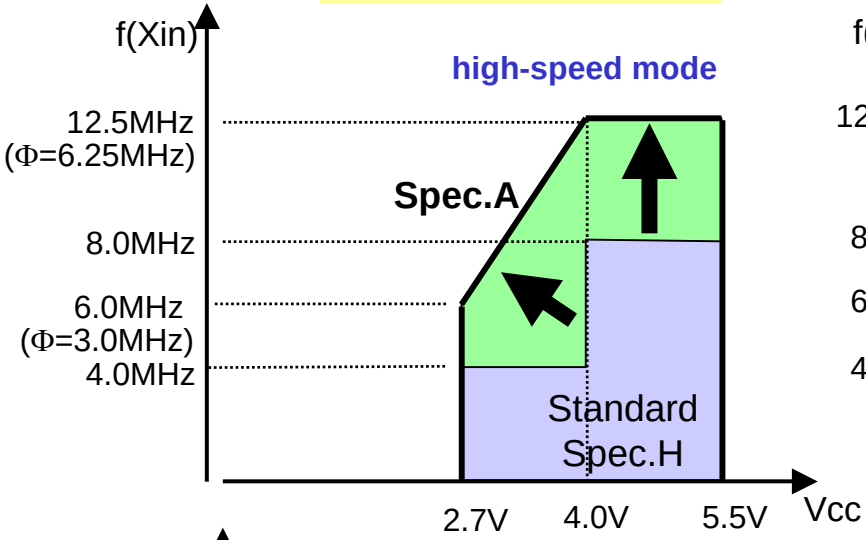


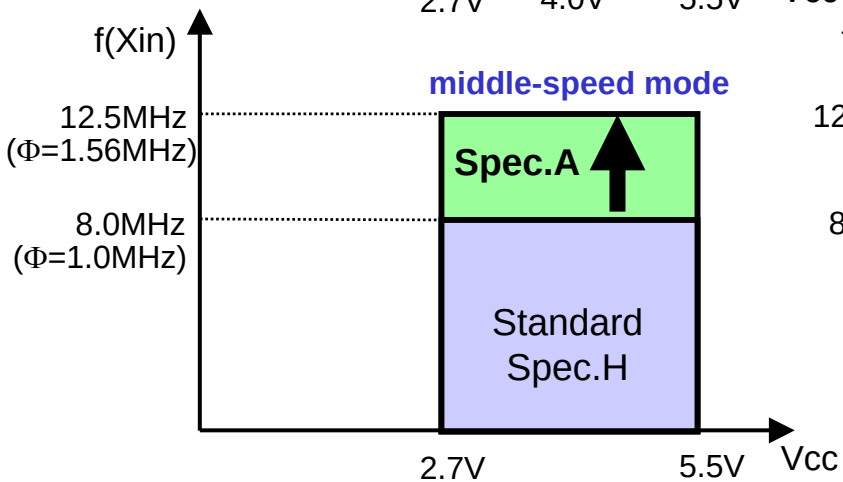
Outline : 42P2R-A/E, 42P4B

Vpp : Flash memory version,PROM version

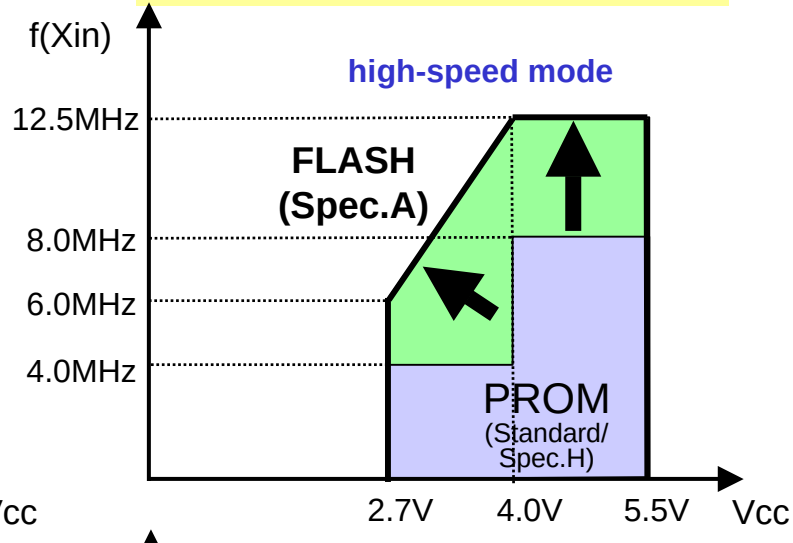
Improvement of Operating Frequency Characteristics in 3850 Groups

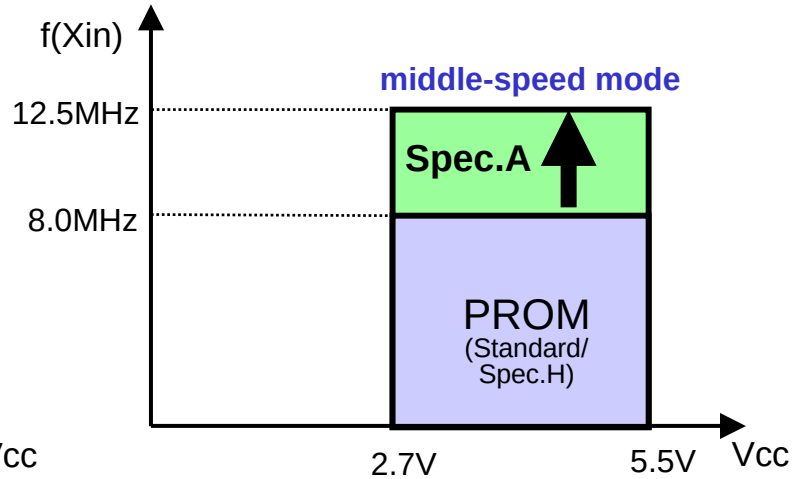
Mask version





Flash/PROM version





Notes on converting Standard ver. into Spec.A (1)

1. There are additional registers in Spec.A as following table. These are used for additional function in Spec.A, software pull-up resister,Serial I/O2 and an increase of analog input pin number .
   When not using the additional functions in Spec.A, take the following (1) or (2)
   (1) Don't write any data to the additional registers(or bit). (Keep the initial state after releasing Reset)
   (2) Write the initial state to the additional registers(or bit) after releasing Reset

Additional Registers in Spec.A

Address	Spec.A	Standard Version
0012_{16}	Port P0P1P2 pull-up control register	–
0013_{16}	Port P3 pull-up control register	–
0014_{16}	Port P4 pull-up control register	–
0015_{16}	Serial I/O2 control register1	Reserved
0016_{16}	Serial I/O2 control register2	Reserved
0017_{16}	Serial I/O2 register	Reserved
0037_{16}	Analog input selection register	–
$003A_{16}$ bit4	Serial I/O2/INT_3 interrupt source selection bit	Reserved

- If in the program for Standard ver. any data have been not written to the addresses corresponding to the Spec.A's additional registers, this program can be used for Spec.A as it is (not requiring to change program codes).

Notes on converting Standard ver. into Spec.A (2)

2. In Spec.A , Serial I/O2 interrupt request bit and enable bit are combined with those of INT3.
Interrupt source can be selected by the Serial I/O2/INT3 interrupt source bit.
When the Serial I/O2/INT3 interrupt source bit is “0”(initial state),interrupt source is INT3. This is the same as Standard version.

Address(Register name)	Spec.A	Standard Version
003C16 bit4 (Interrupt request register 1)	Serial I/O2/INT3 interrupt request bit	INT3 interrupt request bit
003E16 bit4 (Interrupt control register 1)	Serial I/O2/INT3 interrupt enable bit	INT3 interrupt enable bit
003A16 bit4 (Interrupt edge selection register)	Serial I/O2/INT3 interrupt source bit 0:INT3 interrupt 1: Serial I/O2 interrupt	Reserved (Don’t write “1” to this bit)

Notes on converting Standard ver. into Spec.A (3)

3. Spec.A's emulator MCU is M38507ARLSS which is under development.
   When not using the additional functions, it is possible to develop program using M38517RSS

4. In Spec.A,the built-in pull-up resisters can be used for termination of unused pins.

5. There are differences in electric characteristics,operation margin,noise immunity and noise radiation between Spec.A and Standard version due to the difference in the manufacturing processes.
   When manufacturing an application system with Standard version switching to use of Spec.A, please perform sufficient evaluations for the commercial samples of Spec.A Mask ROM version.

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April 1st, 2010
Renesas Electronics Corporation

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