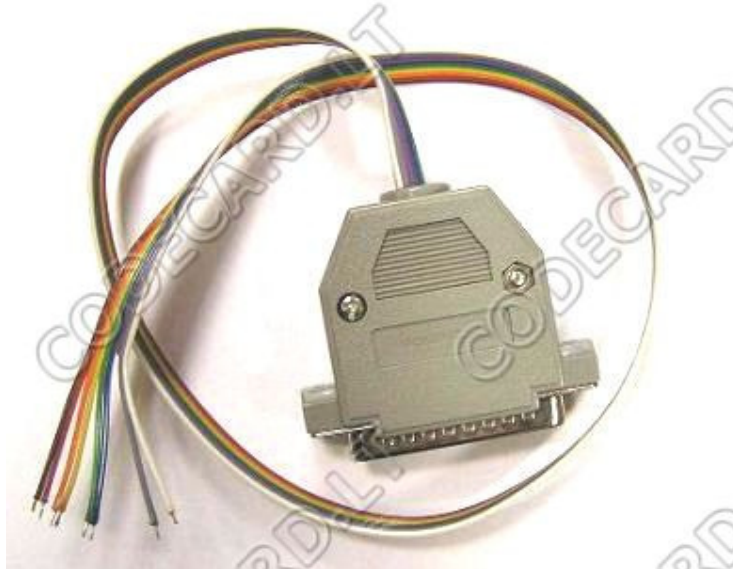


## **S4.4 CarProg Motorola HC912 and 9S12 Programmer manual**

For Motorola MPU HC12 series programming use A10 cable.



**You can recognize Motorola (Freescale) MPU by maskset:**

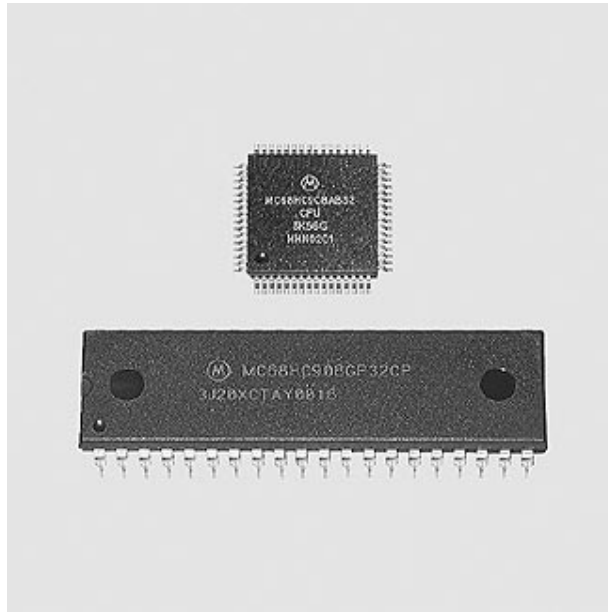


This MPU maskset is 4C11W.

- First digit "4" is mask series number, in practice can be 0, 1, 2, 3, 4 or 5, but for programming is not important.

- Second 4 symbols is always letter + digit + digit + letter: this is processor maskset or encrypted processor type. All processor marking can be custom made, like "FORD S2234234" or SC2323454 but always you can find maskset on Motorola or Freescale processors.

**Before programming always select right processor type according maskset.**

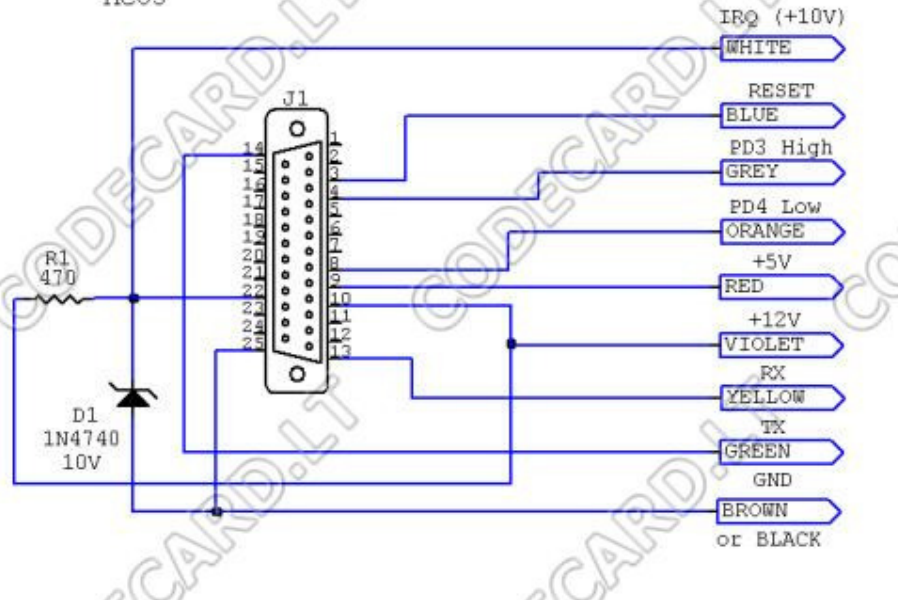


**How to connect CarProg programmer:**

For HC12 or 9S12 programming use A10 cable 6 color wires:

- BLUE** – Reset signal to MPU;
- BROWN** – GND (ground);
- GREY** – BKGD communication signal;
- RED** – switched +5V;
- VIOLET** - switched +12V;

A10 CARPROG Motorola MPU adapter for HC05



## Troubleshooting:


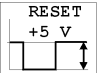
CarProg ERROR messages:

- **Communication error** - no communication between CarProg and Motorola processor - check MPU type, try to select quartz frequency manually.

To understand better onboard MPU programming problems, you can use table with right programming signals and voltages, described in table.

### If you can't read or write MPU with CarProg, check:

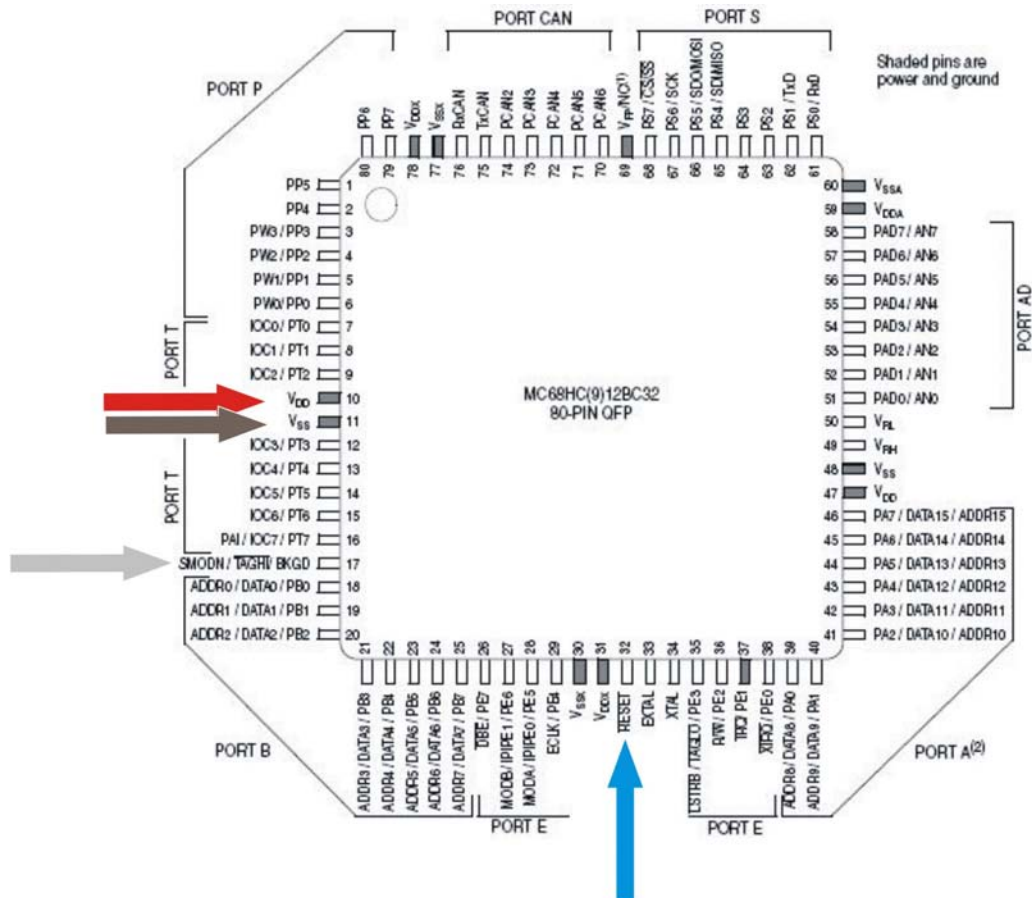
- did you was select right MPU type;
- did quartz resonator Q is the same in circuit board and in CarProg options;
- did all programming signals have right form and voltage;

	Grey BKGD	Blue RESET
<b>912, 9S12</b>	<b>Impulse 3.3-5V</b> 	<b>Reset</b> 

If all conditions are OK and still "no connection" ask [support@codecard.lt](mailto:support@codecard.lt)

## 1. MC68HC912B32, MC68HC912BC32, MC68HC912BD32

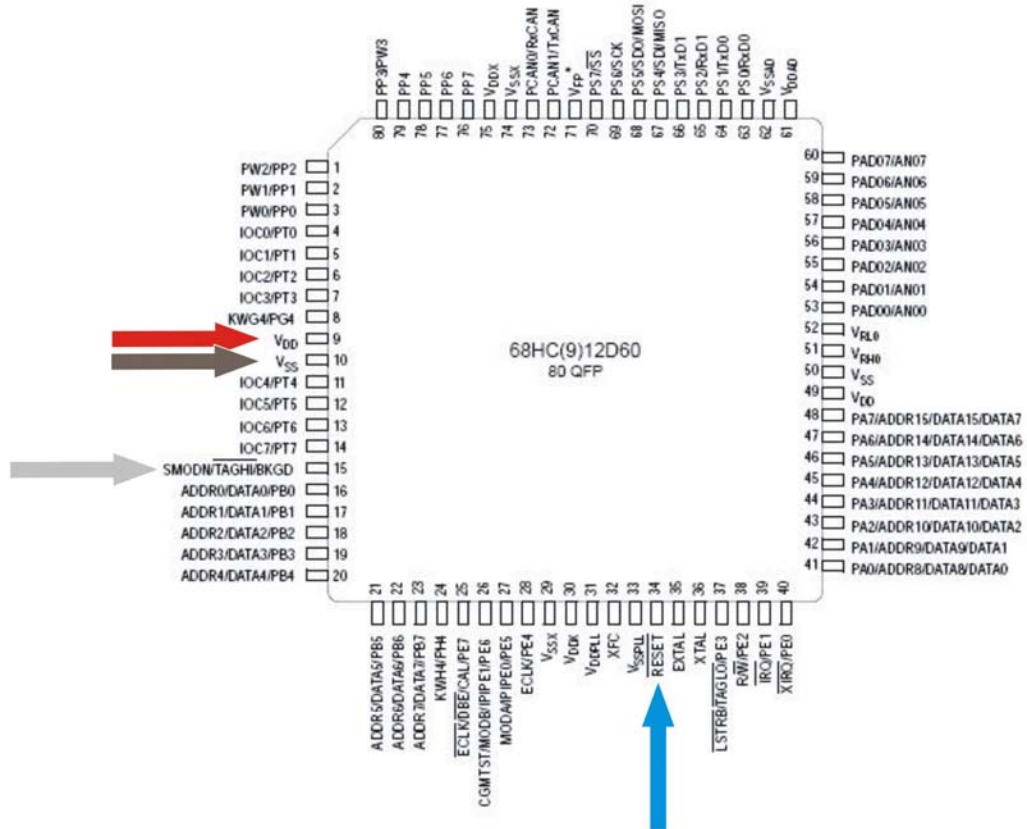
MPU	Mask Set
MC68HC912B32	9H91F
	4J54E
	J64Y
MC68HC912BC32	J15G
	K25E
MC68HC912BD32	K29E

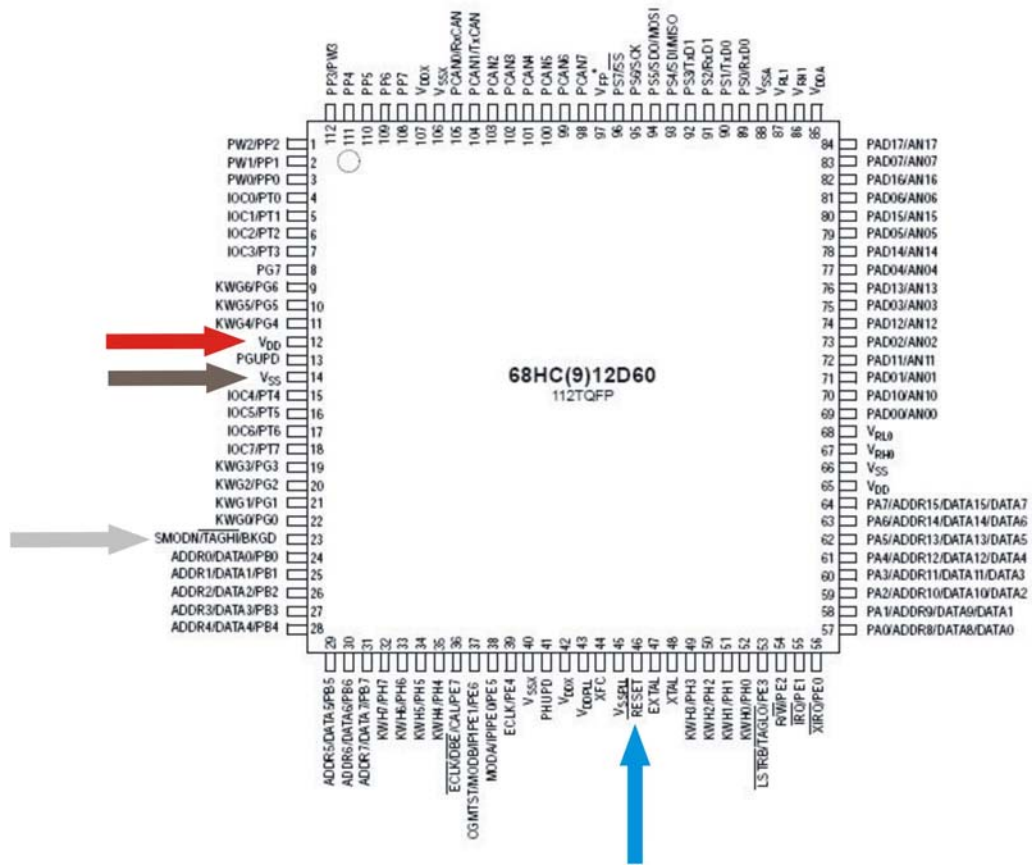


## 2. MC68HC912D60,

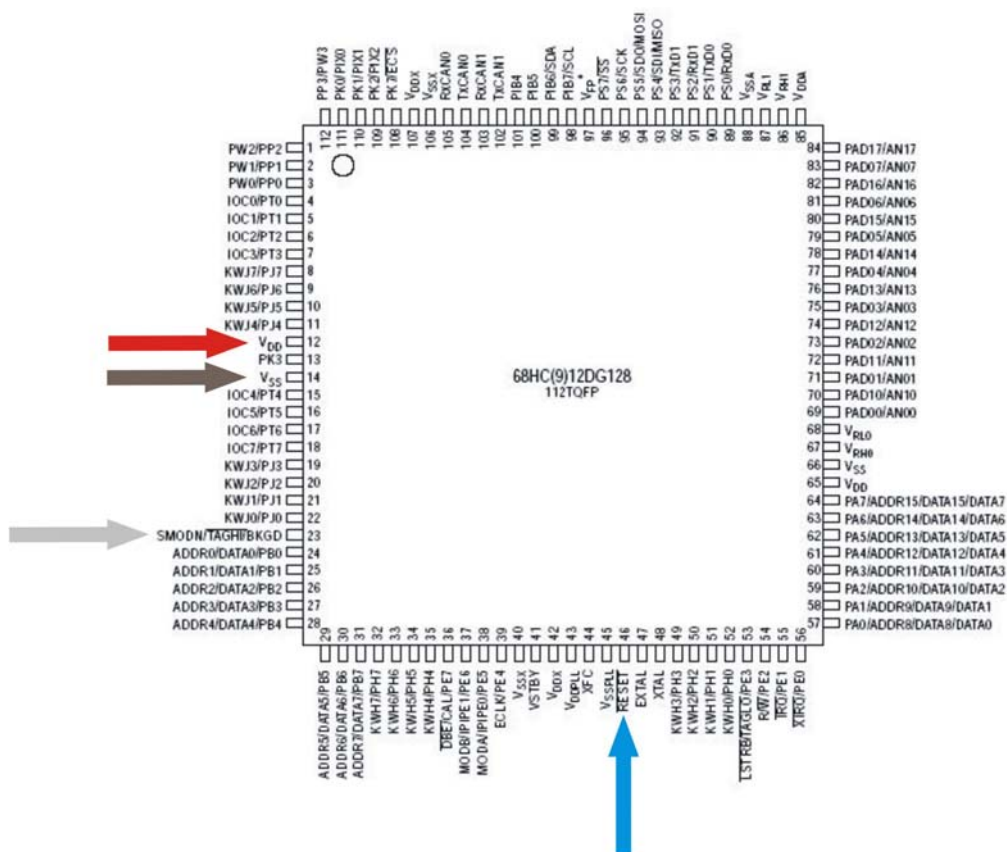
MPU	Mask Set
MC68HC912D60	F68K
	4F73K
	0K75F
	0K13J
	L26M

MC68HC912D60A 2K38K





MPU	Mask Set
MC68HC912DG128	3K91D
	5H55W
MC68HC912DC128A	L27M
	3K91D
MC68HC912DC128	5H55W
	0K50E
MC68HC912DG128A	K31D

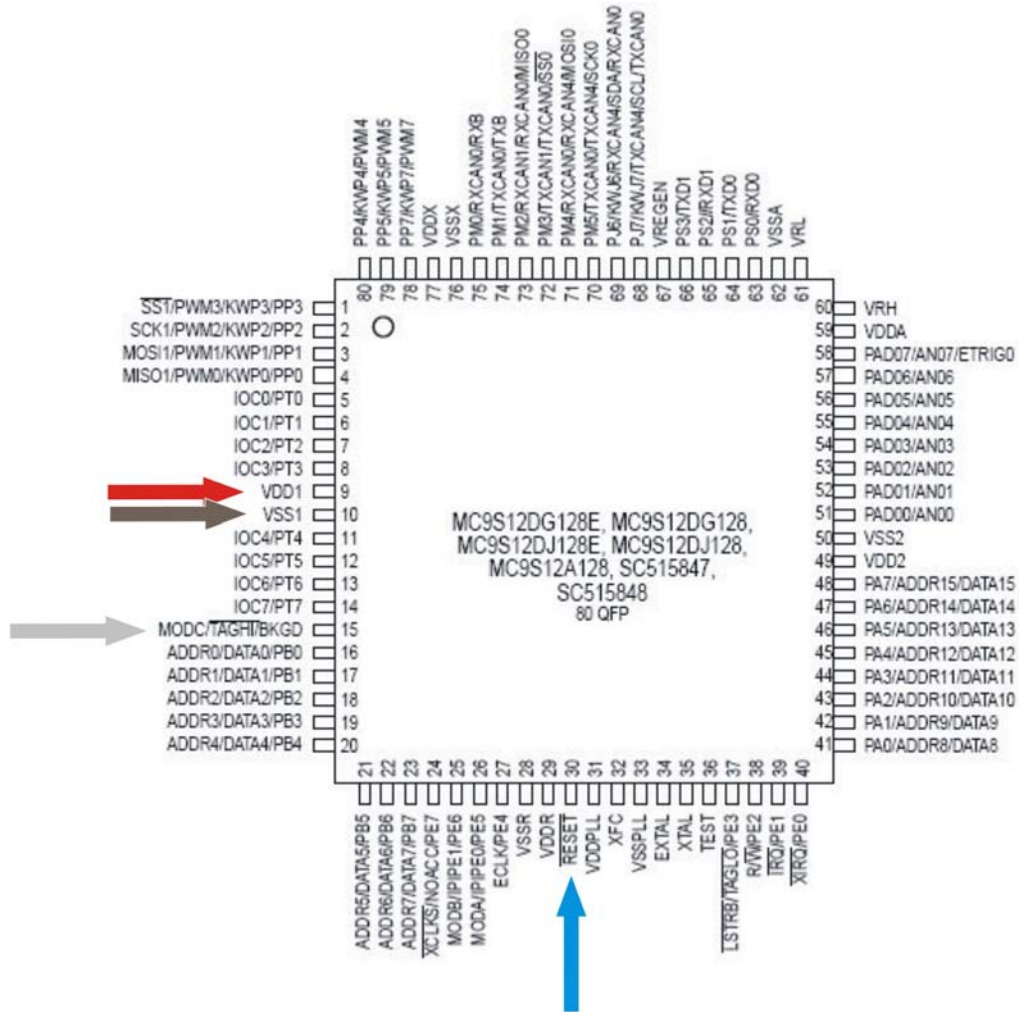


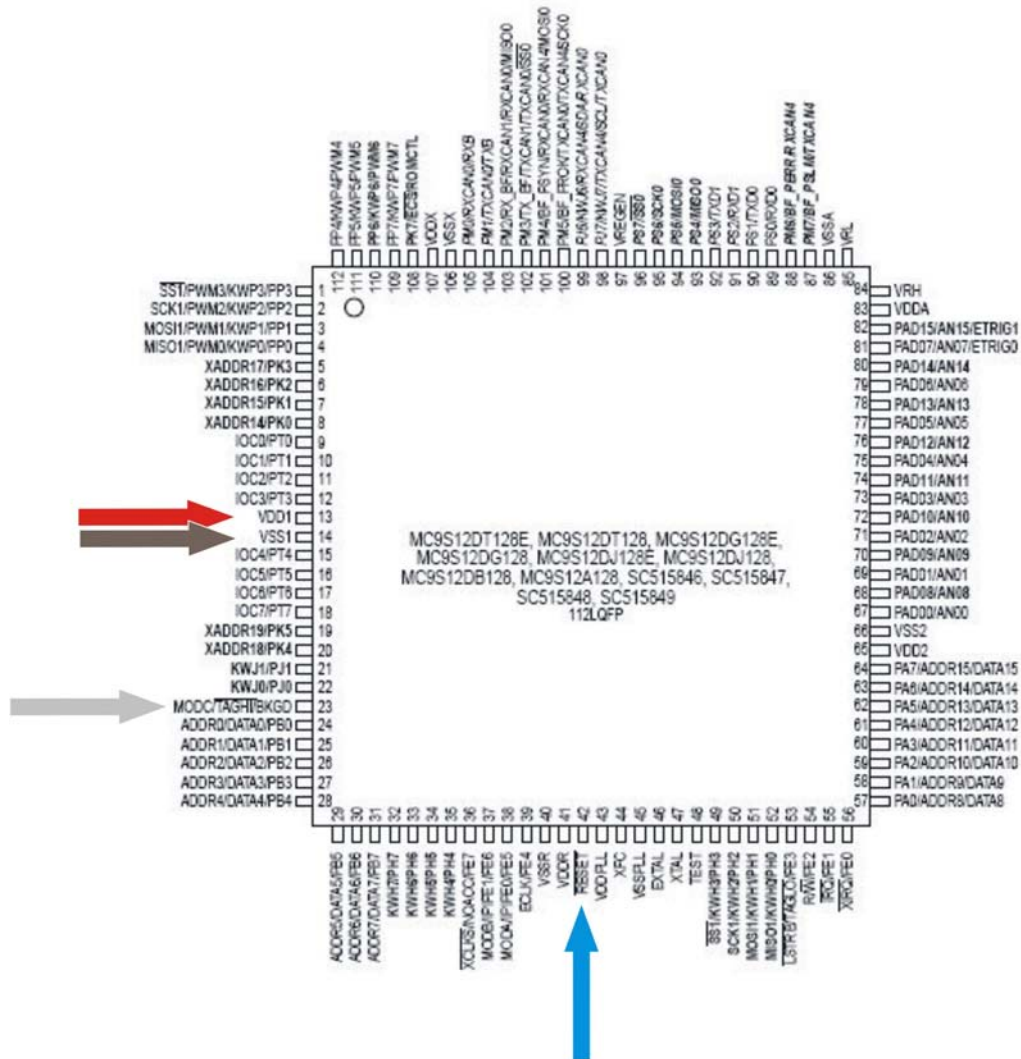


### 3. 9S12DG, DC, DT family:

MPU	Mask Set
9S12D64	L86D
9S12DG64	L43P
	M89C
9S12DT128	L59W
	L94R
	L86D
	3L40K
9S12DT128B	0L85D
	1L85D
9S12DG128B	0L85D
9S12A128B	0L85D
9S12DB128B	0L85D
9S12DP256	L91N
	L01Y
9S12DG256C	2K79X
9S12DT256C	2K79X
9S12DP512	1L00M



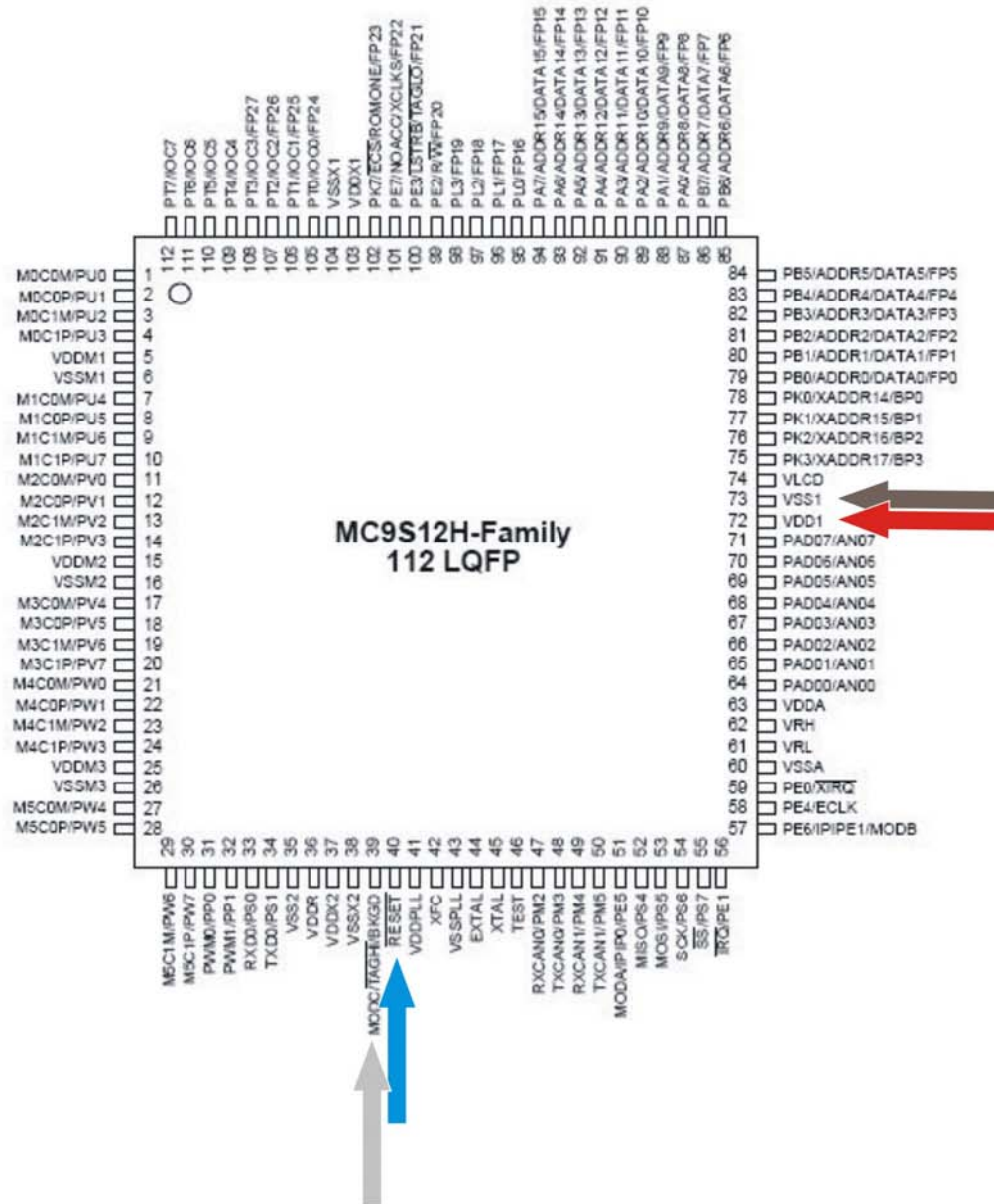


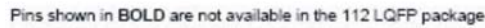


### 3. 9S12H family:

**MPU**  
9S12H128

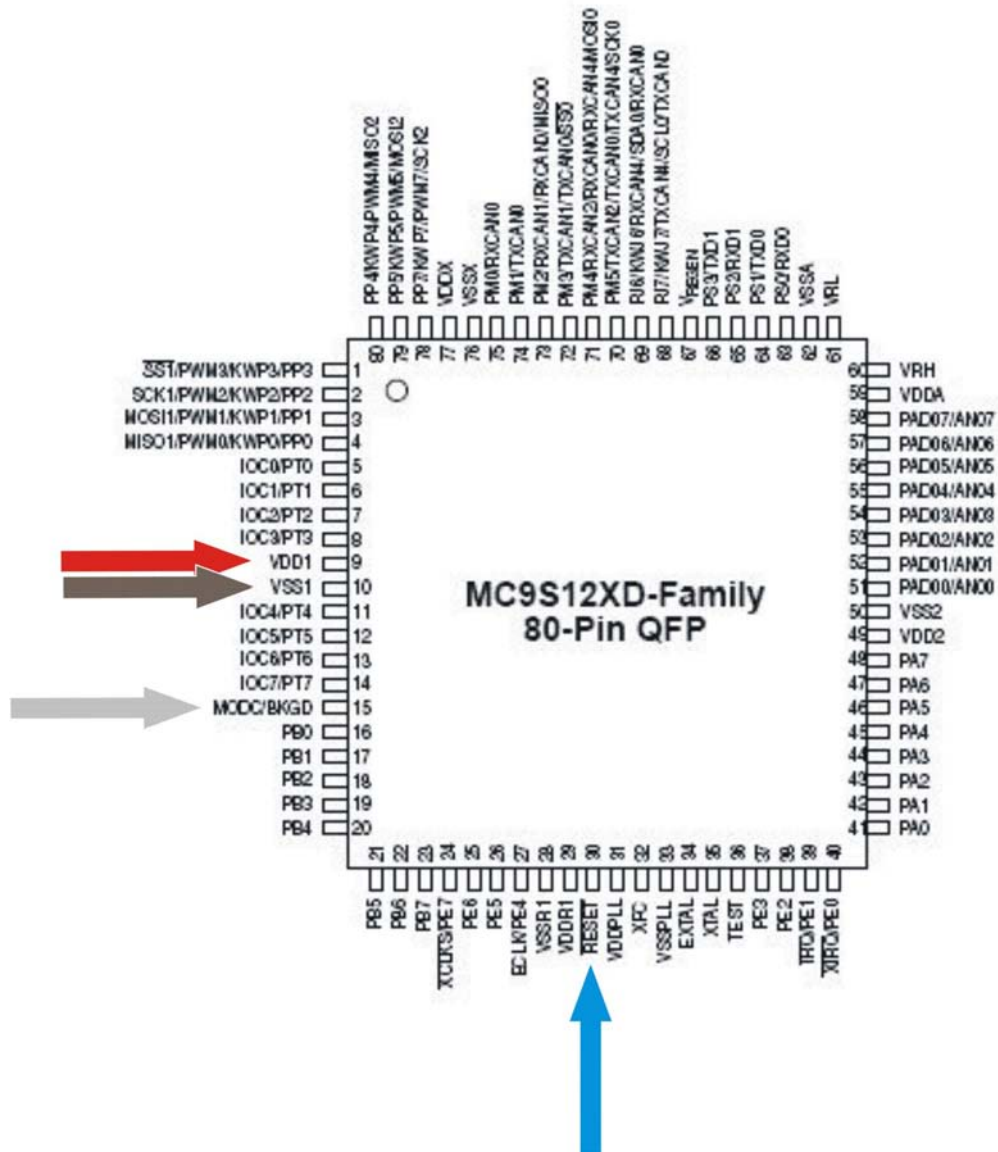
**Mask Set**  
1K78X





### 3. 9S12XD family:

MPU	Mask Set
9S12H128	0L15Y
	0M42E
	1M42E







Pins shown in **BOLD** are not available on the 80-Pin QFP package option

