

# FREESCALE 8-Bit Microcontrollers



MCU / MPU / DSP

Freescale

## HCS08 CORE MICROCONTROLLERS (CONT.)

RoHS Compliant This product is RoHS compliant.

### S08DN 8-Bit MCUs with LIN Master

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |                    | Development Kit Part No. | Package | Internal RAM (Byte) | Internal FLASH (Byte) | Serial Interface Type | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | ADC          | Price Each |      |      |      |
|------------------|--------------------|--------------------------|---------|---------------------|-----------------------|-----------------------|----------------|-----------------|--------------------------|----------|--------------|------------|------|------|------|
| Mfr.             | Mfr. Part No.      |                          |         |                     |                       |                       |                |                 |                          |          |              | 1          | 25   | 50   | 100  |
| ◆                | 841—MC9S08DN16AML  | DEMO9S08DZ60             | LQFP 32 | 1K                  | 16K                   | I2C, SCI, SPI         | 4,2            | 20              | 5.5                      | 26       | 12-bit/10-ch | 6.74       | 4.08 | 3.96 | 3.91 |
| ◆                | 841—MC9S08DN32ACL  | DEMO9S08DZ60             | LQFP 48 | 1.5K                | 32K                   | I2C, SCI, SPI         | 6,2            | 20              | 5.5                      | 40       | 12-bit/16-ch | 6.87       | 4.16 | 4.03 | 3.97 |
| ◆                | 841—MC9S08DN32ACLH | DEMO9S08DZ60             | LQFP 64 | 1.5K                | 32K                   | I2C, SCI, SPI         | 6,2            | 20              | 5.5                      | 53       | 12-bit/16-ch | 5.89       | 5.23 | 4.84 | 4.04 |
| ◆                | 841—MC9S08DN60ACLH | DEMO9S08AW60E            | LQFP-64 | 2K                  | 60K                   | I2C, SCI, SPI         | 6,2            | 20              | 5.5                      | 53       | 12 bit/16-ch | 5.40       | 4.65 | 4.47 | 3.62 |
| ◆                | 841—MC9S08DN60AMLH | DEMO9S08DZ60             | LQFP 64 | 2K                  | 60K                   | I2C, SCI, SPI         | 6,2            | 20              | 5.5                      | 53       | 12-bit/16-ch | 7.17       | 6.37 | 5.90 | 4.92 |

### S08QD Family - High Performance 5-Volt with 10-Bit AD

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |               | Development Kit Part No. | Package | Internal RAM (Byte) | Internal FLASH (Byte) | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | ADC         | Price Each |      |      |      |
|------------------|---------------|--------------------------|---------|---------------------|-----------------------|----------------|-----------------|--------------------------|----------|-------------|------------|------|------|------|
| Mfr.             | Mfr. Part No. |                          |         |                     |                       |                |                 |                          |          |             | 1          | 25   | 50   | 100  |
| 841—             | MC9S08QD2CSC  | DEMO9S08QD4              | SOIC 8  | 128                 | 2000                  | 1, 2           | 8               | 5.5                      | -        | 12-bit/8-ch | 1.17       | 1.10 | 1.00 | .691 |
| 841—             | MC9S08QD2CPC  | DEMO9S08QD4              | PDIP 8  | 128                 | 2000                  | 1, 2           | 8               | 5.5                      | -        | 10-bit/4-ch | 1.85       | 1.14 | 1.04 | .984 |
| 841—             | MC9S08QD2MPC  | DEMO9S08QD4              | PDIP 8  | 128                 | 2000                  | 1, 2           | 8               | 5.5                      | 6        | 10-bit/4-ch | 1.32       | 1.17 | 1.08 | .906 |
| 841—             | MC9S08QD2MSC  | DEMO9S08QD4              | SOIC 8  | 128                 | 2000                  | 1, 2           | 8               | 5.5                      | 6        | 10-bit/4-ch | 1.85       | 1.14 | 1.04 | .984 |
| 841—             | MC9S08QD2VSC  | DEMO9S08QD4              | SOIC 8  | 128                 | 2000                  | 1, 2           | 8               | 5.5                      | 6        | 10-bit/4-ch | 1.17       | 1.10 | 1.00 | .691 |
| 841—             | MC9S08QD4CPC  | DEMO9S08QD4              | PDIP 8  | 256                 | 4K                    | 1, 2           | 8               | 5.5                      | 4        | 10-bit/4-ch | 1.26       | 1.19 | 1.10 | .745 |
| 841—             | MC9S08QD4CSC  | DEMO9S08QD4              | SOIC 8  | 256                 | 4K                    | 1, 2           | 8               | 5.5                      | 4        | 10-bit/4-ch | 1.85       | 1.14 | 1.04 | .984 |
| 841—             | MC9S08QD4MPC  | DEMO9S08QD4              | PDIP 8  | 256                 | 4K                    | 1, 2           | 8               | 5.5                      | 6        | 10-bit/4-ch | 1.52       | 1.43 | 1.32 | .896 |
| 841—             | MC9S08QD4MSC  | DEMO9S08QD4              | SOIC 8  | 256                 | 4K                    | 1, 2           | 8               | 5.5                      | 6        | 10-bit/4-ch | 1.32       | 1.17 | 1.08 | .906 |
| 841—             | MC9S08QD4VPC  | DEMO9S08QD4              | PDIP 8  | 256                 | 4K                    | 2, 1           | 8               | 5.5                      | 4        | 10-bit/4-ch | 1.43       | 1.27 | 1.16 | 1.09 |
| 841—             | MC9S08QD4VSC  | DEMO9S08QD4              | SOIC 8  | 256                 | 4K                    | 1, 2           | 8               | 5.5                      | 4        | 16-bit/4-ch | 1.19       | 1.05 | .80  | .66  |

### S08QG Family - High Performance 1.8 to 3.3-Volt up to 8K Flash

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |               | Development Kit Part No. | Package  | Internal RAM (Byte) | Internal FLASH (Byte) | Serial Interface Type | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | ADC         | Price Each |      |      |      |
|------------------|---------------|--------------------------|----------|---------------------|-----------------------|-----------------------|----------------|-----------------|--------------------------|----------|-------------|------------|------|------|------|
| Mfr.             | Mfr. Part No. |                          |          |                     |                       |                       |                |                 |                          |          |             | 1          | 25   | 50   | 100  |
| 841—             | MC9S08QG4CDNE | DEMO9S08QG8E             | SOIC 8   | 256                 | 4K                    | I2C, SCI, SPI         | 1, 1           | 10              | 3.6                      | 4        | 10-bit/4-ch | 1.21       | 1.04 | 1.00 | .82  |
| 841—             | MC9S08QG4CDTE | DEMO9S08QG8E             | TSSOP 16 | 256                 | 4K                    | I2C, SCI, SPI         | 1, 1           | 10              | 3.6                      | 12       | 10-bit/8-ch | 1.54       | 1.45 | 1.34 | .91  |
| 841—             | MC9S08QG4CFE  | DEMO9S08QG8E             | QFN 16   | 256                 | 4K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 12       | 10-bit/8-ch | 1.56       | 1.46 | 1.35 | .918 |
| 841—             | MC9S08QG4CFQE | DEMO9S08QG8E             | QFN-D 8  | 256                 | 4K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 4        | 10-bit/4-ch | 1.21       | 1.04 | 1.00 | .82  |
| 841—             | MC9S08QG4CPAE | DEMO9S08QG8E             | PDIP 8   | 256                 | 4K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 4        | 10-bit/4-ch | 1.46       | 1.37 | 1.27 | .94  |
| 841—             | MC9S08QG8CDNE | DEMO9S08QG8E             | SOIC 8   | 512                 | 8K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 4        | 10-bit/4-ch | 1.44       | 1.35 | 1.25 | .94  |
| 841—             | MC9S08QG8CDTE | DEMO9S08QG8E             | TSSOP 16 | 512                 | 8K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 12       | 10-bit/8-ch | 1.56       | 1.46 | 1.30 | 1.12 |
| 841—             | MC9S08QG8CFE  | DEMO9S08QG8E             | QFN 16   | 512                 | 8K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 12       | 10-bit/8-ch | 1.40       | 1.21 | 1.16 | .982 |
| 841—             | MC9S08QG8CFQE | DEMO9S08QG8E             | QFN-D 8  | 512                 | 8K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 4        | 10-bit/4-ch | 1.48       | 1.39 | 1.29 | .874 |
| 841—             | MC9S08QG8CPBE | DEMO9S08QG8E             | PDIP 16  | 513                 | 8K                    | I2C, SCI, SPI         | 1, 2           | 10              | 3.6                      | 12       | 10-bit/8-ch | 1.56       | 1.46 | 1.30 | 1.12 |

### S08R 8-bit MCU Family

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |                | Development Kit Part No. | Package  | Internal RAM (Byte) | Internal FLASH (Byte) | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | Operating Temperature | Price Each |       |      |      |
|------------------|----------------|--------------------------|----------|---------------------|-----------------------|----------------|-----------------|--------------------------|----------|-----------------------|------------|-------|------|------|
| Mfr.             | Mfr. Part No.  |                          |          |                     |                       |                |                 |                          |          |                       | 1          | 25    | 50   | 100  |
| 841—             | MC9S08RD8CDWE  | DEMO9S08RG60E            | SOIC 28W | 1000                | 8000                  | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 4.00       | 3.72  | 3.66 | 2.35 |
| 841—             | MC9S08RD16CDWE | DEMO9S08RG60E            | SOIC 28W | 1000                | 16000                 | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 7.69       | 4.66  | 4.63 | 4.52 |
| 841—             | MC9S08RD16DWE  | DEMO9S08RG60E            | SOIC 28W | 1000                | 16000                 | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 7.69       | 4.92  | 4.86 | 4.66 |
| 841—             | MC9S08RD16PE   | DEMO9S08RG60E            | PDIP 28  | 1000                | 16000                 | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 4.94       | 4.86  | 4.79 | 4.71 |
| 841—             | MC9S08RD32DWE  | DEMO9S08RG60E            | SOIC 28W | 2000                | 32000                 | 2              | 8               | 3.6                      | 23       | -                     | 9.71       | 5.88  | 5.83 | 5.60 |
| 841—             | MC9S08RD32PE   | DEMO9S08RG60E            | PDIP 28  | 2000                | 32000                 | 2              | 8               | 3.6                      | 23       | -                     | 6.22       | 6.05  | 5.83 | 5.60 |
| 841—             | MC9S08RD60CPE  | DEMO9S08RG60E            | PDIP 28  | 2000                | 60000                 | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 7.76       | 7.65  | 7.27 | 6.97 |
| 841—             | MC9S08RD60DWE  | DEMO9S08RG60E            | SOIC 28W | 2000                | 60000                 | 2              | 8               | 3.6                      | 23       | -40°C to 85°C         | 10.53      | 7.41  | 7.17 | 7.04 |
| 841—             | MC9S08RE8CFGE  | DEMO9S08RG60E            | LQFP 44  | 1000                | 8000                  | 2              | 8               | 3.6                      | 39       | -40°C to 85°C         | 6.21       | 3.96  | 3.92 | 3.76 |
| 841—             | MC9S08RG32CFGE | DEMO9S08RG60E            | LQFP 44  | 1024                | 32768                 | 2              | 8               | 3.6                      | 39       | -40°C to 85°C         | 8.70       | 8.69  | 8.00 | 7.10 |
| 841—             | MC9S08RG32FGE  | DEMO9S08RG60E            | LQFP 44  | 2000                | 32000                 | 2              | 8               | 3.6                      | 39       | -40°C to 85°C         | 8.70       | 8.69  | 8.00 | 7.10 |
| 841—             | MC9S08RG60CFGE | DEMO9S08RG60E            | LQFP 44  | 2000                | 60000                 | 2              | 8               | 3.6                      | 39       | -40°C to 85°C         | 8.85       | 8.15  | 7.50 | 6.65 |
| 841—             | MC9S08RG60FGE  | DEMO9S08RG60E            | LQFP 44  | 2000                | 60000                 | 2              | 8               | 3.6                      | 39       | -40°C to 85°C         | 11.78      | 10.85 | 9.98 | 8.85 |

### S08SE Family - General purpose Industrial and Consumer Appliance Applications in the 3v - 5v range

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |               | Development Kit Part No. | Package  | Internal RAM (Byte) | Internal FLASH (Byte) | Serial Interface Type | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | Core Operating Freq. (Max) (MHz) | ADC           | Price Each |      |      |      |
|------------------|---------------|--------------------------|----------|---------------------|-----------------------|-----------------------|----------------|-----------------|--------------------------|----------|----------------------------------|---------------|------------|------|------|------|
| Mfr.             | Mfr. Part No. |                          |          |                     |                       |                       |                |                 |                          |          |                                  |               | 1          | 25   | 50   | 100  |
| 841—             | MC9S08SE4CRL  | DEMO9S08SE8              | PDIP 28  | 4                   | 256                   | SCI                   | 2,1            | 10              | 5.5                      | 24       | 20                               | 10-bit/10-ch. | 1.68       | 1.58 | 1.47 | .993 |
| 841—             | MC9S08SE4CTG  | DEMO9S08SE8              | TSSOP 16 | 4                   | 256                   | SCI                   | 2,1            | 10              | 5.5                      | 14       | 20                               | 10-bit/10-ch. | 1.21       | 1.04 | 1.00 | .82  |
| 841—             | MC9S08SE4CWL  | DEMO9S08SE8              | SOIC 28W | 4                   | 256                   | SCI                   | 2,1            | 10              | 5.5                      | 24       | 20                               | 10-bit/10-ch. | 1.39       | 1.31 | 1.21 | .84  |
| 841—             | MC9S08SE8CRL  | DEMO9S08SE8              | PDIP 28  | 8                   | 512                   | SCI                   | 2,1            | 10              | 5.5                      | 24       | 20                               | 10-bit/10-ch. | 1.81       | 1.71 | 1.58 | 1.30 |
| 841—             | MC9S08SE8CTG  | DEMO9S08SE8              | TSSOP 16 | 8                   | 512                   | SCI                   | 2,1            | 10              | 5.5                      | 14       | 20                               | 10-bit/10-ch. | 1.70       | 1.60 | 1.48 | 1.00 |
| 841—             | MC9S08SE8CWL  | DEMO9S08SE8              | SOIC 28W | 8                   | 512                   | SCI                   | 2,1            | 10              | 5.5                      | 24       | 20                               | 10-bit/10-ch. | 1.81       | 1.71 | 1.58 | 1.06 |

### S08SH 5-Volt 8-Bit MCUs with SCI, SPI, ADC and Analog Comparators

The S08SH family offers a new low-end option for applications in the 5 volt range

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. |               | Development Kit Part No. | Package   | Internal RAM (Byte) | Internal FLASH (Byte) | Serial Interface Type | Timer Channels | Bus Freq. (MHz) | Supply Voltage (V)(Max.) | I/O Pins | ADC          | Price Each |      |      |      |
|------------------|---------------|--------------------------|-----------|---------------------|-----------------------|-----------------------|----------------|-----------------|--------------------------|----------|--------------|------------|------|------|------|
| Mfr.             | Mfr. Part No. |                          |           |                     |                       |                       |                |                 |                          |          |              | 1          | 25   | 50   | 100  |
| 841—             | MC9S08SH4CFK  | DEMO9S08SH               | QFN 24 EP | 256                 | 4K                    | SPI,I2C,SCI           | 1,2            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.50       | 1.27 | 1.19 | 1.10 |
| 841—             | MC9S08SH4CPC  | DEMO9S08SH               | PDIP 20   | 256                 | 4K                    | SPI, I2C, SCI         | 1,2            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.61       | 1.41 | 1.25 | 1.08 |
| 841—             | MC9S08SH4CSC  | DEMO9S08SH               | SOIC 8    | 256                 | 4K                    | I2C                   | 1,2            | 20              | 5.5                      | 5        | 10-bit/12-ch | 1.73       | 1.53 | 1.42 | 1.18 |
| 841—             | MC9S08SH4CTG  | DEMO9S08SH               | TSSOP 16  | 256                 | 4K                    | SPI, I2C, SCI         | 1,2            | 20              | 5.5                      | 13       | 10-bit/12-ch | 1.61       | 1.41 | 1.25 | 1.08 |
| 841—             | MC9S08SH4CTJ  | DEMO9S08SH               | TSSOP 20  | 256                 | 4K                    | SPI, I2C, SCI         | 1,2            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.61       | 1.41 | 1.25 | 1.08 |
| 841—             | MC9S08SH4CWJ  | DEMO9S08SH               | SOIC 20W  | 256                 | 4K                    | SPI,I2C,SCI           | 1,2            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.61       | 1.41 | 1.25 | 1.08 |
| 841—             | MC9S08SH4MPJ  | DEMO9S08SH               | PDIP 20   | 256                 | 4K                    | SPI, I2C, SCI         | 1,1            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.75       | 1.62 | 1.55 | 1.32 |
| 841—             | MC9S08SH4MSC  | DEMO9S08SH               | SOIC 8    | 256                 | 4K                    | I2C                   | 1,1            | 20              | 5.5                      | 4        | 10-bit/12-ch | 1.50       | 1.27 | 1.19 | 1.10 |
| 841—             | MC9S08SH4MTJ  | DEMO9S08SH               | TSSOP 16  | 256                 | 4K                    | SPI, I2C, SCI         | 1,2            | 20              | 5.5                      | 13       | 10-bit/12-ch | 1.70       | 1.60 | 1.55 | 1.40 |
| 841—             | MC9S08SH4MTJ  | DEMO9S08SH               | TSSOP 20  | 256                 | 4K                    | SPI, I2C, SCI         | 1,2            | 20              | 5.5                      | 17       | 10-bit/12-ch | 1.75       | 1.62 | 1.55 | 1.32 |