## A. ECAD Design Information

This appendix contains information that supports the development of the PCB ECAD model for this device. It is intended to be used by PCB designers.

### A.1 Part Number Indexing

| Orderable Part Number | Number of Pins | Package Type | Package Code/POD Number |
|---|---|---|---|
| R5F10968JSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F10968JSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F10968JSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F10968JSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F10968KSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F10968KSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F10968KSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F10968KSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AJSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AJSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AJSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AJSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AKSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AKSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AKSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096AKSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BJSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BJSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BJSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BKSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BKSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BKSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096BKSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CJSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CJSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CJSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CJSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CKSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CKSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CKSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096CKSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DJSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DJSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DJSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DJSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DKSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DKSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DKSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096DKSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EJSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EJSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EJSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EJSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EKSP#H0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EKSP#H0G | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EKSP#X0 | 20 | LSSOP | PLSP0020JC-A |
| R5F1096EKSP#X0G | 20 | LSSOP | PLSP0020JC-A |
| R5F109AAJSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAJSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAJSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAJSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAKSP#H0 | 30 | LSSOP | PLSP0030JB-B |

| Orderable Part Number | Number of Pins | Package Type | Package Code/POD Number |
|---|---|---|---|
| R5F109AAKSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAKSP#V0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAKSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AAKSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABJSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABJSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABJSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABJSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABKSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABKSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABKSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ABKSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACJSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACJSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACJSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACJSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACKSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACKSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACKSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ACKSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADJSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADJSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADJSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADJSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADKSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADKSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADKSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109ADKSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEJSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEJSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEJSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEJSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEKSP#H0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEKSP#H0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEKSP#X0 | 30 | LSSOP | PLSP0030JB-B |
| R5F109AEKSP#X0G | 30 | LSSOP | PLSP0030JB-B |
| R5F109GACJFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACJFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACJFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACJFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACKFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACKFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACKFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GACKFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCJFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCJFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCJFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCKFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCKFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCKFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GBCKFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCJFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCJFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCJFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCJFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCKFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCKFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCKFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GCCKFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCJFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCJFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCJFB#50 | 48 | LFQFP | PLQP0048KF-A |

| Orderable Part Number | Number of Pins | Package Type | Package Code/POD Number |
|---|---|---|---|
| R5F109GDCJFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCKFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCKFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCKFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GDCKFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECJFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECJFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECJFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECJFB#50G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECKFB#10 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECKFB#10G | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECKFB#50 | 48 | LFQFP | PLQP0048KF-A |
| R5F109GECKFB#50G | 48 | LFQFP | PLQP0048KF-A |

## A.2    Symbol Pin Information

### A.2.1 20-LSSOP

| Pin Number | Primary Pin Name | Primary Electrical Type | Alternate Pin Name(s) |
|---|---|---|---|
| 1 | P20 | I/O | ANI0/AVREFP |
| 2 | P01 | I/O | ANI16/TO00 |
| 3 | P40 | I/O | TOOL0 |
| 4 | \RESET | Input | - |
| 5 | P137 | Input | INTP0 |
| 6 | X2 | Input | P122/EXCLK |
| 7 | X1 | Input | P121 |
| 8 | REGC | Power | - |
| 9 | VSS | Power | - |
| 10 | VDD | Power | - |
| 11 | P31 | I/O | TI03/TO03/INTP4/PCLBUZ0 |
| 12 | P50 | I/O | INTP1/LRxD0 |
| 13 | P51 | I/O | INTP2/LTxD0 |
| 14 | P17 | I/O | TI02/TO02/(TXD0) |
| 15 | P16 | I/O | TI01/TO01/INTP5/(RXD0) |
| 16 | P12 | I/O | SO00/TxD0/SOS0/TxDS0/TOOLTxD/(TI05)/(TO05) |
| 17 | P11 | I/O | SI00/RxD0/SIS0/RxDS0/TOOLRxD/SDA00/(TI06)/(TO06) |
| 18 | P10 | I/O | SCK00#/SCKS0#/SCL00/(TI07)/(TO07) |
| 19 | P22 | I/O | ANI2 |
| 20 | P21 | I/O | ANI1/AVREFM |

### A.2.2 30-LSSOP

| Pin Number | Primary Pin Name | Primary Electrical Type | Alternate Pin Name(s) |
|---|---|---|---|
| 1 | P20 | I/O | ANI0/AVREFP |
| 2 | P01 | I/O | ANI16/TO00/RxD1 |
| 3 | P00 | I/O | ANI17/TI00/TxD1 |
| 4 | P120 | I/O | ANI19 |
| 5 | P40 | I/O | TOOL0 |
| 6 | \RESET | Input | - |
| 7 | P137 | Input | INTP0 |
| 8 | X2 | Input | P122/EXCLK |
| 9 | X1 | Input | P121 |
| 10 | REGC | Power | - |
| 11 | VSS | Power | - |
| 12 | VDD | Power | - |
| 13 | P60 | I/O | SCLA0 |
| 14 | P61 | I/O | SDAA0 |
| 15 | P31 | I/O | TI03/TO03/INTP4/PCLBUZ0 |

| Pin Number | Primary Pin Name | Primary Electrical Type | Alternate Pin Name(s) |
|---|---|---|---|
| 16 | P30 | I/O | INTP3/SCK11/SCL11 |
| 17 | P50 | I/O | INTP1/SI11/SDA11/LRxD0 |
| 18 | P51 | I/O | INTP2/SO11/LTxD0 |
| 19 | P17 | I/O | TI02/TO02/(TXD0) |
| 20 | P16 | I/O | TI01/TO01/INTP5/(RXD0) |
| 21 | P15 | I/O | PCLBUZ1/SCK20/SCL20/(TI02)/(TO02) |
| 22 | P14 | I/O | RxD2/SI20/SDA20/(SCLA0)/(TI03)/(TO03) |
| 23 | P13 | I/O | TxD2/SO20/(SDAA0)/(TI04)/(TO04) |
| 24 | P12 | I/O | SO00/TxD0/SOS0/TxDS0/TOOLTxD/(TI05)/(TO05) |
| 25 | P11 | I/O | SI00/RxD0/SIS0/RxDS0/TOOLRxD/SDA00/(TI06)/(TO06) |
| 26 | P10 | I/O | SCK00/SCKS0/SCL00/(TI07)/(TO07) |
| 27 | P147 | I/O | ANI18 |
| 28 | P23 | I/O | ANI3 |
| 29 | P22 | I/O | ANI2 |
| 30 | P21 | I/O | ANI1/AVREFM |

## A.2.3 48-LFQFP

| Pin Number | Primary Pin Name | Primary Electrical Type | Alternate Pin Name(s) |
|---|---|---|---|
| 1 | P60 | I/O | SCLA0 |
| 2 | P61 | I/O | SDAA0 |
| 3 | P62 | I/O | - |
| 4 | P63 | I/O | - |
| 5 | P31 | I/O | TI03/TO03/INTP4/(PCLBUZ0) |
| 6 | P75 | I/O | KR5/INTP9/SCK01/SCL01 |
| 7 | P74 | I/O | KR4/INTP8/SI01/SDA01 |
| 8 | P73 | I/O | KR3/SO01 |
| 9 | P72 | I/O | KR2/SO21 |
| 10 | P71 | I/O | KR1/SI21/SDA21 |
| 11 | P70 | I/O | KR0/SCK21/SCL21 |
| 12 | P30 | I/O | INTP3/SCK11/SCL11/RTC1HZ |
| 13 | P50 | I/O | INTP1/SI11/SDA11/LRxD0 |
| 14 | P51 | I/O | INTP2/SO11/LTxD0 |
| 15 | P17 | I/O | TI02/TO02/(TXD0) |
| 16 | P16 | I/O | TI01/TO01/INTP5/(RXD0) |
| 17 | P15 | I/O | PCLBUZ1/SCK20/SCL20/(TI02)/(TO02) |
| 18 | P14 | I/O | RxD2/SI20/SDA20/(SCLA0)/(TI03)/(TO03) |
| 19 | P13 | I/O | TxD2/SO20/(SDAA0)/(TI04)/(TO04) |
| 20 | P12 | I/O | SO00/TxD0/SOS0/TxDS0/TOOLTxD/(TI05)/(TO05) |
| 21 | P11 | I/O | SI00/RxD0/SIS0/RxDS0/TOOLRxD/SDA00/(TI06)/(TO06) |
| 22 | P10 | I/O | SCK00/SCKS0/SCL00/(TI07)/(TO07) |
| 23 | P146 | I/O | - |
| 24 | P147 | I/O | ANI18 |
| 25 | P27 | I/O | ANI7 |
| 26 | P26 | I/O | ANI6 |
| 27 | P25 | I/O | ANI5 |
| 28 | P24 | I/O | ANI4 |
| 29 | P23 | I/O | ANI3 |
| 30 | P22 | I/O | ANI2 |
| 31 | P21 | I/O | ANI1/AVREFM |
| 32 | P20 | I/O | ANI0/AVREFP |
| 33 | P130 | I/O | - |
| 34 | P01 | I/O | TO00/RxD1 |
| 35 | P00 | I/O | TI00/TxD1 |
| 36 | P140 | I/O | PCLBUZ0/INTP6 |
| 37 | P120 | I/O | ANI19 |
| 38 | P41 | I/O | TI07/TO07 |
| 39 | P40 | I/O | TOOL0 |
| 40 | \RESET | Input | - |
| 41 | XT2 | Input | P124/EXCLKS |

| Pin Number | Primary Pin Name | Primary Electrical Type | Alternate Pin Name(s) |
|---|---|---|---|
| 42 | XT1 | Input | P123 |
| 43 | P137 | Input | INTP0 |
| 44 | X2 | Input | P122/EXCLK |
| 45 | X1 | Input | P121 |
| 46 | REGC | Power | - |
| 47 | VSS | Power | - |
| 48 | VDD | Power | - |

## A.3 Symbol Parameters

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F10968JSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968JSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968JSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968JSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968KSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968KSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968KSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F10968KSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 0.5 KB | 8 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096AKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F1096BJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096BKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096CKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F1096DKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096DKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F1096EKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 4-Ch | 1 | 2 | 3 | 16-bit X 8-Ch |
| R5F109AAJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAKSP #V0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AAKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F109AAKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ABKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ACKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F109ADJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109ADKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEJSP #H0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEJSP #H0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEJSP #X0 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEJSP #X0G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEKSP #H0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEKSP #H0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEKSP #X0 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109AEKSP #X0G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 8-Ch | 4 | 4 | 5 | 16-bit X 8-Ch |
| R5F109GACJF B#10 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACJF B#10G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACJF B#50 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACJF B#50G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACK FB#10 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F109GACK FB#10G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACK FB#50 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GACK FB#50G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1 KB | 16 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCJF B#10 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCJF B#10G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCJF B#50G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCK FB#10 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCK FB#10G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCK FB#50 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GBCK FB#50G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 1.5 KB | 24 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCJF B#10 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCJF B#10G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCJF B#50 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCJF B#50G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCK FB#10 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCK FB#10G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCK FB#50 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GCCK FB#50G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 2 KB | 32 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCJF B#10 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |

| Orderable Part Number | Min Input Voltage | Max Input Voltage | Max Output Frequency | Min Operating Temperature | Max Operating Temperature | RAM Size | Memory Size | Interface | Number of ADC Channels | Number of I2C Channels | Number of SPI Channels | Number of UART Channels | Number of Timers/Counters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R5F109GDCJF B#10G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCJF B#50 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCJF B#50G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCK FB#10 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCK FB#10G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCK FB#50 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GDCK FB#50G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 3 KB | 48 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECJF B#10 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECJF B#10G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECJF B#50 | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECJF B#50G | 1.8 V | 5.5 V | 32 MHz | −40 °C | +85 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECKF B#10 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECKF B#10G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECKF B#50 | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |
| R5F109GECKF B#50G | 2.7 V | 5.5 V | 32 MHz | −40 °C | +125 °C | 4 KB | 64 KB | SCI, SPI, I2C, UART | 10-bit X 10-Ch | 6 | 6 | 5 | 16-bit X 8-Ch |

## A.4　Footprint Design Information

### A.4.1　20-LSSOP

| IPC Footprint Type | Package Code/ POD number | Number of Pins |
|---|---|---|
| SOP | PLSP0020JC-A | 20 |

| Description | Dimension | Value (mm) | Diagram |
|---|---|---|---|
| Minimum lead span (horizontal side) | Hmin | 7.9 | |
| Maximum lead span (horizontal side) | Hmax | 8.3 | |
| Minimum body span (vertical side) | Dmin | 6.5 | |
| Maximum body span (vertical side) | Dmax | 6.8 | |
| Minimum body span (horizontal side) | Emin | 5.9 | |
| Maximum body span (horizontal side) | Emax | 6.3 | |
| Minimum Lead Width | Bmin | 0.17 | |
| Maximum Lead Width | Bmax | 0.32 | |
| Minimum Lead Length | Lmin | 0.45 | |
| Maximum Lead Length | Lmax | 0.75 | |
| Maximum Height | Amax | 1.4 | |
| Minimum Standoff Height | A1min | 0.05 | |
| Minimum Lead Thickness | cmin | 0.14 | |
| Maximum Lead Thickness | cmax | 0.20 | |
| Total number of pin positions (including absent pins) | PinCount | 10 | |
| Comma separated list showing absent pins.  Example: 1,2,5. If blank all pins present | AbsentPins | 0 | |
| Comma separated list showing pin order. If blank pin order is assumed sequential from 1 to PinCount.  Example: 8,7,6,5,4,3,2,1 will reverse the pin order of an 8 pin package | PinOrder | - | |
| Distance between the center of any two adjacent pins | Pitch | 0.65 | |
| Minimum thermal pad size (vertical side) | D2min | - | |
| Maximum thermal pad size (vertical side) | D2max | - | |
| Minimum thermal pad size (horizontal side) | E2min | - | |
| Maximum thermal pad size (horizontal side) | E2max | - | |

| Recommended Land Pattern | | | |
|---|---|---|---|
| Description | Dimension | Value (mm) | Diagram |
| Distance between left pad toe to right pad toe. | Z | - | |
| Distance between left pad heel to right pad heel. | G | - | |
| Pad Width | X | - | |
| Pad Length | Y | - | |

## A.4.2 30-LSSOP

| IPC Footprint Type | Package Code/ POD number | Number of Pins |
|---|---|---|
| SOP | PLSP0030JB-B | 30 |

| Description | Dimension | Value (mm) | Diagram |
|---|---|---|---|
| Minimum lead span (horizontal side) | Hmin | 7.9 | |
| Maximum lead span (horizontal side) | Hmax | 8.3 | |
| Minimum body span (vertical side) | Dmin | 9.7 | |
| Maximum body span (vertical side) | Dmax | 10 | |
| Minimum body span (horizontal side) | Emin | 5.9 | |
| Maximum body span (horizontal side) | Emax | 6.3 | |
| Minimum Lead Width | Bmin | 0.17 | |
| Maximum Lead Width | Bmax | 0.32 | |
| Minimum Lead Length | Lmin | 0.45 | |
| Maximum Lead Length | Lmax | 0.75 | |
| Maximum Height | Amax | 1.4 | |
| Minimum Standoff Height | A1min | 0.05 | |
| Minimum Lead Thickness | cmin | 0.14 | |
| Maximum Lead Thickness | cmax | 0.20 | |
| Total number of pin positions (including absent pins) | PinCount | 15 | |
| Comma separated list showing absent pins.  Example: 1,2,5. If blank all pins present | AbsentPins | 0 | |
| Comma separated list showing pin order. If blank pin order is assumed sequential from 1 to PinCount.  Example: 8,7,6,5,4,3,2,1 will reverse the pin order of an 8 pin package | PinOrder | - | |
| Distance between the center of any two adjacent pins | Pitch | 0.65 | |
| Minimum thermal pad size (vertical side) | D2min | - | |
| Maximum thermal pad size (vertical side) | D2max | - | |
| Minimum thermal pad size (horizontal side) | E2min | - | |
| Maximum thermal pad size (horizontal side) | E2max | - | |

| Recommended Land Pattern | | | |
|---|---|---|---|
| Description | Dimension | Value (mm) | Diagram |
| Distance between left pad toe to right pad toe. | Z | - | |
| Distance between left pad heel to right pad heel. | G | - | |
| Pad Width | X | - | |
| Pad Length | Y | - | |

## A.4.3 48-LFQFP

| IPC Footprint Type | Package Code/ POD number | Number of Pins |
|---|---|---|
| QFP | PLQP0048KF-A | 48 |

| Description | Dimension | Value (mm) | Diagram |
|---|---|---|---|
| Minimum lead span (vertical side) | Dmin | 9.2 | |
| Maximum lead span (vertical side) | Dmax | 9.2 | |
| Minimum lead span (horizontal side) | Emin | 9.2 | |
| Maximum lead span (horizontal side) | Emax | 9.2 | |
| Minimum body span (vertical side) | D1min | 7.2 | |
| Maximum body span (vertical side) | D1max | 7.2 | |
| Minimum body span (horizontal side) | E1min | 7.2 | |
| Maximum body span (horizontal side) | E1max | 7.2 | |
| Minimum Lead Width | Bmin | 0.17 | |
| Maximum Lead Width | Bmax | 0.27 | |
| Minimum Lead Length | Lmin | 0.45 | |
| Maximum Lead Length | Lmax | 0.75 | |
| Maximum Height | Amax | 1.6 | |
| Minimum Standoff Height | A1min | 0.05 | |
| Minimum Lead Thickness | cmin | 0.1 | |
| Maximum Lead Thickness | cmax | 0.2 | |
| Number of pins (vertical side) | PinCountD | 12 | |
| Number of pins (horizontal side) | PinCountE | 12 | |
| Distance between the center of any two adjacent pins | Pitch | 0.5 | |
| Location of pin 1; S2 = corner of D side, C1 = center of E side | Pin1 | S2 | |
| Minimum thermal pad size (vertical side) | D2min | - | |
| Maximum thermal pad size (vertical side) | D2max | - | |
| Minimum thermal pad size (horizontal side) | E2min | - | |
| Maximum thermal pad size (horizontal side) | E2max | - | |

| Recommended Land Pattern (NSMD Design) | | | |
|---|---|---|---|
| Description | Dimension | Value (mm) | Diagram |
| Distance between left pad toe to right pad toe (horizontal side) | ZE | - | |
| Distance between top pad toe to bottom pad toe (vertical side) | ZD | - | |
| Distance between left pad heel to right pad heel (horizontal side) | GE | - | |
| Distance between top pad heel to bottom pad heel (vertical side) | GD | - | |
| Pad Width | X | - | |
| Pad Length | Y | - | |