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
R5F21262SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21262SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21264SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21264SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21265SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21265SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21266SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21266SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21272SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21272SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21274SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21274SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21275SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21275SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21276SNFP#V2	32	LQFP	PLQP0032GB-A
R5F21276SNFP#X6	32	LQFP	PLQP0032GB-A
R5F21262SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21262SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21264JFP#U0	32	LQFP	PLQP0032GB-A
R5F21264KFP#U0	32	LQFP	PLQP0032GB-A
R5F21264KFP#W4	32	LQFP	PLQP0032GB-A
R5F21264SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21264SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21265SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21265SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21266JFP#U0	32	LQFP	PLQP0032GB-A
R5F21266KFP#W4	32	LQFP	PLQP0032GB-A
R5F21266SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21266SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21272SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21272SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21274SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21274SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21275SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21275SDFP#X6	32	LQFP	PLQP0032GB-A
R5F21276JFP#U0	32	LQFP	PLQP0032GB-A
R5F21276JFP#W4	32	LQFP	PLQP0032GB-A
R5F21276KFP#U0	32	LQFP	PLQP0032GB-A
R5F21276SDFP#V2	32	LQFP	PLQP0032GB-A
R5F21276SDFP#X6	32	LQFP	PLQP0032GB-A

A.2 Symbol Pin Information

A.2.1 32-LQFP

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
1	SCL	I/O	P3_5/(TRCIOD)/SSCK
2	P3_7	I/O	TRAO/RXD1/(TXD1)/SSO
3	\RESET	Input	-
4	XOUT	Output	XCOUT/P4_7
5	VSS	Power	AVSS

6	XIN	Input	XCIN/P4_6
7	VCC	Power	AVCC
8	MODE	Input	-
9	P4_5	I/O	INT0#/(RXD1)
10	P1_7	I/O	INT1#/TRAIO
11	P3_6	I/O	(INT1#)/(TXD1)/(RXD1)
12	P3_1	I/O	TRBO
13	P5_4	I/O	TRCIOD
14	P5_3	I/O	TRCIOC
15	P1_6	I/O	CLK0/(SSI)
16	P1_5	I/O	(INT1#)/(TRAIO)/RXD0
17	P1_4	I/O	TXD0
18	P1_3	I/O	KI3#/(TRBO)/AN11
19	P1_2	I/O	KI2#/TRCIOB/AN10
20	P4_2	Input	VRFF
21	P1_1	I/O	KI1#/TRCIOA/TRCTRG/AN9
22	P1_0	I/O	KI0#/AN8
23	SDA	I/O	P3_3/INT3#/TRCCLK/SSI
24	P3_4	I/O	(TRCIOC)/SCS#
25	P0_7	I/O	AN0
26	P0_6	I/O	AN1
27	P0_5	I/O	CLK1/AN2
28	P0_4	I/O	TREO/AN3
29	P0_3	I/O	AN4
30	P0_2	I/O	AN5
31	P0_1	I/O	AN6
32	P0_0	I/O	(TXD1)/AN7

A.2.2 32-LQFP

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
1	SCL	I/O	P3_5/(TRCIOD)/SSCK
2	P3_7	I/O	TRAO/RXD1/(TXD1)/SSO
3	\RESET	Input	-
4	XOUT	Output	P4_7
5	VSS	Power	AVSS
6	XIN	Input	P4_6
7	VCC	Power	AVCC
8	MODE	Input	-
9	P4_5	I/O	INT0#/(RXD1)
10	P1_7	I/O	INT1#/TRAIO
11	P3_6	I/O	(INT1#)/(TXD1)/(RXD1)
12	P3_1	I/O	TRBO
13	P5_4	I/O	TRCIOD
14	P5_3	I/O	TRCIOC
15	P1_6	I/O	CLK0/(SSI)
16	P1_5	I/O	(INT1#)/(TRAIO)/RXD0
17	P1_4	I/O	TXD0
18	P1_3	I/O	KI3#/(TRBO)/AN11
19	P1_2	I/O	KI2#/TRCIOB/AN10
20	P4_2	Input	VRFF
21	P1_1	I/O	KI1#/TRCIOA/TRCTRG/AN9
22	P1_0	I/O	KI0#/AN8
23	SDA	I/O	P3_3/INT3#/TRCCLK/SSI
24	P3_4	I/O	(TRCIOC)/SCS#
25	P0_7	I/O	AN0
26	P0_6	I/O	AN1
27	P0_5	I/O	CLK1/AN2
28	P0_4	I/O	TREO/AN3
29	P0_3	I/O	AN4
30	P0_2	I/O	AN5
31	P0_1	I/O	AN6
32	P0_0	I/O	(TXD1)/AN7

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
R5F21262SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21262SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21265SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21265SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21272SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21272SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21274SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21274SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21275SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21275SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276SNFP#V2	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276SNFP#X6	2.2 V	5.5 V	20 MHz	-20 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21262SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch

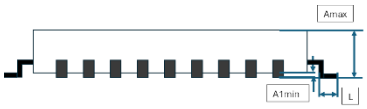
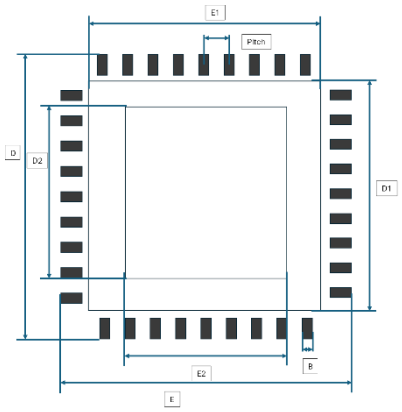
R5F21262SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264JFP#U0	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264KFP#U0	2.2 V	5.5 V	20 MHz	-40 °C	+125 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264KFP#W4	2.2 V	5.5 V	20 MHz	-40 °C	+125 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21264SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21265SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21265SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266JFP#U0	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266KFP#W4	2.2 V	5.5 V	20 MHz	-40 °C	+125 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21266SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21272SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21272SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	512 B	8 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21274SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21274SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1 KB	16 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21275SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21275SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	24 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276JFP#U0	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276JFP#W4	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch

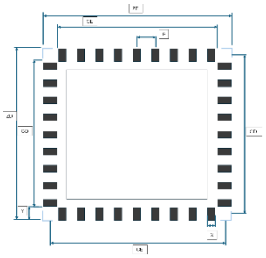
R5F21276KFP#U0	2.2 V	5.5 V	20 MHz	-40 °C	+125 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276SDFP#V2	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch
R5F21276SDFP#X6	2.2 V	5.5 V	20 MHz	-40 °C	+85 °C	1.5 KB	32 KB	UART, I2C, LIN	10-bit X 12-Ch	1	0	2	8-bit X 3-Ch, 16-bit X 1-Ch

A.4 Footprint Design Information

A.4.1 32-LQFP

IPC Footprint Type	Package Code/ POD number	Number of Pins
QFP	PLQP0032GB-A	32

Description	Dimension	Value (mm)	Diagram
Minimum lead span (vertical side)	Dmin	8.8	
Maximum lead span (vertical side)	Dmax	9.2	
Minimum lead span (horizontal side)	Emin	8.8	
Maximum lead span (horizontal side)	Emax	9.2	
Minimum body span (vertical side)	D1min	6.9	
Maximum body span (vertical side)	D1max	7.1	
Minimum body span (horizontal side)	E1min	6.9	
Maximum body span (horizontal side)	E1max	7.1	
Minimum Lead Width	Bmin	0.32	
Maximum Lead Width	Bmax	0.42	
Minimum Lead Length	Lmin	0.3	
Maximum Lead Length	Lmax	0.7	
Maximum Height	Amax	1.7	
Minimum Standoff Height	A1min	0.01	
Minimum Lead Thickness	cmin	-	
Maximum Lead Thickness	cmax	-	
Number of pins (vertical side)	PinCountD	8	
Number of pins (horizontal side)	PinCountE	8	
Distance between the center of any two adjacent pins	Pitch	0.8	
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	-	