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
R7F701275EABG-C#AC6	252	BGA	PRBG0252GB-A
R7F701275EABG-C#BC6	252	BGA	PRBG0252GB-A
R7F701275EABG-C#HC4	252	BGA	PRBG0252GB-A
R7F701275EABG-C#HC6	252	BGA	PRBG0252GB-A
R7F701278EAFP#AC6	176	LFQFP	PLQP0176KB-A
R7F701278EAFP#BC6	176	LFQFP	PLQP0176KB-A

A.2 Symbol Pin Information

A.2.1 252-BGA

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
1A	A0VSS(N.C.)	Power	-
1B	A0VSS(N.C.)	Power	-
1C	ADCC0I32	Input	-
1D	ADCC0I30	Input	-
1E	P7_2	I/O	TAUD0I7/TAUD0O7/TAUJ0I2/TAUJ0O2/SCI0RXD/CSIH2SO
1F	P7_5	I/O	CSIH2CSS0
1G	P7_4	I/O	TAUD0I8/TAUD0O8/TAUJ0I3/TAUJ0O3/SCI0TXD/CSIH2SI
1H	P5_0	I/O	RLIN32RX/SCI0RXD/CSIH2CSS3
1J	P5_3	I/O	RLIN31TX/SCI1SCK
1K	P5_7	I/O	SCI2SCK
1L	P4_0	I/O	CSIH1SI
1M	P4_3	I/O	CAN0RX/CSIH1CSS0
1N	P4_6	I/O	CAN1TX/CSIH0CSS3/CSIH1CSS3
1P	P4_9	I/O	CSIH0SC
1R	P4_11	I/O	CAN2TX/CSIH0CSS1
1T	P4_15	I/O	CAN3TX/ERROROUT_C#
1U	P6_11	I/O	TAUD3I11/TAUD3O11
1V	P6_12	I/O	TAUD3I12/TAUD3O12
1W	VSS(N.C.)	Power	-
1Y	VSS(N.C.)	Power	-
2Y	VSS(N.C.)	Power	-
3A	ADCC0I01	Input	-
3B	ADCC0I00	Input	-
3C	ADCC0I23	Input	-
3D	A0VSS	Power	-
3E	A0VCC	Power	-
3F	P7_1	I/O	ENCA1TIN0/ADCC0TRG/CSIH2CSS1
3G	P7_6	I/O	-
3H	P5_1	I/O	RLIN32TX/SCI0TXD/CSIH2SSI
3J	P5_6	I/O	TPBA1O/TAPA0ESO
3K	P5_9	I/O	SCI2TXD
3L	P4_2	I/O	CSIH1SC
3M	P4_4	I/O	CAN0TX/CSIH1CSS1
3N	P4_8	I/O	CSIH0SO/CSIH1RYI/CSIH1RYO
3P	P4_13	I/O	RLIN30TX/CSIH0RYI/CSIH0RYO
3R	VDD	Power	-
3T	VSS	Power	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
3U	AUDCK	Input	-
3V	AUDATA3	I/O	-
3W	AUDATA2	I/O	-
3Y	P6_14	I/O	TAUD3I14/TAUD3O14
4A	ADCC0I10	Input	-
4B	ADCC0I03	Input	-
4C	ADCC0I02	Input	-
4G	VDD	Power	-
4H	VSS	Power	-
4J	P5_5	I/O	RLIN30TX/SCI1TXD/ERROROUT_C#
4K	VCC	Power	-
4L	VSS	Power	-
4M	VSS	Power	-
4N	VDD	Power	-
4P	P4_12	I/O	RLIN30RX/CSIH0SSI
4V	AUDATA1	I/O	-
4W	AUDATA0	I/O	-
4Y	P6_15	I/O	TAUD3I15/TAUD3O15
5A	ADCC0I13	Input	RDC3A1COSMNT
5B	ADCC0I12	Input	RDC3A1SINMNT
5C	ADCC0I11	Input	-
5V	P6_2	I/O	TAUD3I2/TAUD3O2/ENCA1TIN0/RDC3A0_OUT_W/ADCC0TRG
5W	P6_0	I/O	TAUD3I0/TAUD3O0/TAUJ1I2/TAUJ1O2/ERROROUT_C#
5Y	P6_1	I/O	TAUD3I1/TAUD3O1/TAUJ1I3/TAUJ1O3
6A	ADCC0I22	Input	-
6B	ADCC0I21	Input	-
6C	ADCC0I20	Input	-
6V	P6_3	I/O	TAUD3I3/TAUD3O3/RDC3A1_OUT_W
6W	P6_4	I/O	TAUD3I4/TAUD3O4/ENCA1TIN1/RDC3A0_OUT_V
6Y	P6_5	I/O	TAUD3I5/TAUD3O5/RDC3A1_OUT_V
7A	RDC3A1S2	Input	-
7B	RDC3A1S1	Input	-
7C	RDC3A1S3	Input	-
7D	RDC3A1S4	Input	-
7U	VDD	Power	-
7V	P6_6	I/O	TAUD3I6/TAUD3O6/RDC3A0_OUT_U/TAPA0ESO
7W	\ERROROUT_M	Output	-
7Y	P0_6	I/O	TAUD0I6/TAUD0O6/TAUJ0I1/TAUJ0O1/ENCA0E0/RDC3A0_OUT_U/INTP3
8A	RDC3A1RSO	I/O	-
8B	RDC3A1COM	I/O	-
8C	RVSS	Power	-
8D	RVSS	Power	-
8U	VSS	Power	-
8V	P0_8	I/O	TAUD0I8/TAUD0O8/TAUJ0I3/TAUJ0O3/ENCA0EC/RDC3A0_OUT_W/INTP5
8W	P0_9	I/O	TAUD0I9/TAUD0O9/TAUD3I3/TAUD3O3/TAPA5ESO/INTP6
8Y	P0_7	I/O	TAUD0I7/TAUD0O7/TAUJ0I2/TAUJ0O2/ENCA0E1/RDC3A0_OUT_V/INTP4
9A	RDC3A0RSO	I/O	-
9B	RDC3A0COM	I/O	-
9C	RVCC	Power	-
9D	RVCC	Power	-
9J	VDD	Power	-
9K	VDD	Power	-
9L	VDD	Power	-
9M	VDD	Power	-
9U	VSS	Power	-
9V	P0_12	I/O	TAUD0I12/TAUD0O12/TAPA0VP/TAUD3I9/TAUD3O9/RSENT0RX/RSENT0SPCO
9W	P0_11	I/O	TAUD0I11/TAUD0O11/TAPA0UN/TAUD3I7/TAUD3O7/TSGTRG
9Y	P0_10	I/O	TAUD0I10/TAUD0O10/TAPA0UP/TAUD3I5/TAUD3O5/INTP7
10A	RDC3A0S2	Input	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
10B	RDC3A0S1	Input	-
10C	RDC3A0S3	Input	-
10D	RDC3A0S4	Input	-
10J	VSS	Power	-
10K	VSS	Power	-
10L	VSS	Power	-
10M	VSS	Power	-
10U	VCC	Power	-
10V	P0_15	I/O	TAUD0I15/TAUD0O15/TAPA0WN/TAUD3I15/TAUD3O15/RSENT1SPCO
10W	P0_14	I/O	TAUD0I14/TAUD0O14/TAPA0WP/TAUD3I13/TAUD3O13/RSENT1RX/RSENT1SPCO
10Y	P0_13	I/O	TAUD0I13/TAUD0O13/TAPA0VN/TAUD3I11/TAUD3O11/RSENT0SPCO
11A	ADCC1I31	Input	-
11B	ADCC1I30	Input	-
11C	ADCC1I00	Input	RDC3A0SINMNT
11D	VDD	Power	-
11J	VSS	Power	-
11K	VSS	Power	-
11L	VSS	Power	-
11M	VSS	Power	-
11U	VSS	Power	-
11V	VSS	Power	-
11W	DCUTDO	Output	-
11Y	\DCURDY	Output	-
12A	ADCC1I03	Input	-
12B	ADCC1I01	Input	RDC3A0COSMNT
12C	ADCC1I02	Input	-
12D	VSS	Power	-
12J	VDD	Power	-
12K	VDD	Power	-
12L	VDD	Power	-
12M	VDD	Power	-
12U	VDD	Power	-
12V	VDD	Power	-
12W	DCUTDI	Input	-
12Y	DCUTCK	Input	-
13A	ADCC1I10	Input	-
13B	ADCC1I11	Input	-
13C	ADCC1I13	Input	-
13D	ADCC1I12	Input	-
13U	MD1	Input	-
13V	\DCUTRST	Input	-
13W	DCUTMS	Input	-
13Y	VSS	Power	-
14A	ADCC1I21	Input	-
14B	ADCC1I22	Input	-
14C	ADCC1I32	Input	-
14D	ADCC1I20	Input	-
14U	VSS	Power	-
14V	VSS	Power	-
14W	P7_8	Input	-
14Y	X2	Input	-
15A	ADCC1I23	Input	-
15B	ADCC1I33	Input	-
15C	A1VSS	Power	-
15V	SYSVCC	Power	-
15W	SYSVCC	Power	-
15Y	X1	Input	-
16A	A2VSS	Power	-
16B	A1VREFH	Power	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
16C	A1VCC	Power	-
16V	VCC	Power	-
16W	\RESET	Input	-
16Y	VCC	Power	-
17A	A2VCC	Power	-
17B	A2VREFH	Power	-
17C	ADCC2I20	Input	-
17G	VSS	Power	-
17H	VDD	Power	-
17J	VSS	Power	-
17K	VCC	Power	-
17L	P2_1	I/O	TAUD2I1/TAUD2O1/TSG31O7/INTP1
17M	P1_15	I/O	TAUD1I15/TAUD1O15/TAPA1WN/TSG32O6
17N	VSS	Power	-
17P	VDD	Power	-
17V	VSS	Power	-
17W	FLMODE	Input	-
17Y	MD0	Input	-
18A	ADCC2I00	Input	-
18B	ADCC2I22	Input	-
18C	ADCC2I21	Input	-
18D	ADCC2I31	Input	-
18E	ADCC2I33	Input	-
18F	ADCC2I11	Input	-
18G	P3_7	I/O	TAUD2I15/TAUD2O15/TAPA2WN/ADCC2TRG/RSENT3SPCO
18H	P3_3	I/O	TAUD2I11/TAUD2O11/TAPA2UN/ENCA1E0/RDC3A1_OUT_U
18J	P2_7	I/O	TAUD2I7/TAUD2O7/TSG31O6/INTP7
18K	P2_6	I/O	TAUD2I6/TAUD2O6/TSG31O4/INTP6
18L	P2_2	I/O	TAUD2I2/TAUD2O2/TSG31O1/INTP2
18M	P1_12	I/O	TAUD1I12/TAUD1O12/TAPA1VP/TAUD1O13/TSG32O5
18N	P1_9	I/O	TAUD1I9/TAUD1O9/TSG32O7/TAPA4ESO
18P	P1_6	I/O	TAUD1I6/TAUD1O6/TAUD1O7/TSG30O4
18R	P1_3	I/O	TAUD1I3/TAUD1O3/TSG30O3
18T	P1_1	I/O	TAUD1I1/TAUD1O1/ENCA0TIN1/TSG30O7
18U	P6_8	I/O	TAUD3I8/TAUD3O8/TAUJ1I0/TAUJ1O0
18V	P0_2	I/O	TAUD0I2/TAUD0O2/TAUJ0I2/TAUJ0O2/TAPA3ESO
18W	P0_0	I/O	TAUD0I0/TAUD0O0/TAUJ0I0/TAUJ0O0
18Y	P0_1	I/O	TAUD0I1/TAUD0O1/TAUJ0I1/TAUJ0O1/TAPA5ESO
19A	A2VSS(N.C.)	Power	-
19B	ADCC2I01	Input	-
19C	ADCC2I02	Input	-
19D	ADCC2I23	Input	-
19E	ADCC2I32	Input	-
19F	ADCC2I12	Input	-
19G	P3_6	I/O	TAUD2I14/TAUD2O14/TAPA2WP/RSENT3RX/RSENT3SPCO
19H	P3_2	I/O	TAUD2I10/TAUD2O10/TAPA2UP/ADCC1TRG
19J	P3_1	I/O	TAUD2I9/TAUD2O9/ADCC0TRG/RSENT2SPCO/TAPA2ESO
19K	P2_5	I/O	TAUD2I5/TAUD2O5/TSG31O2/INTP5
19L	P2_3	I/O	TAUD2I3/TAUD2O3/TSG31O3/INTP3
19M	P1_13	I/O	TAUD1I13/TAUD1O13/TAPA1VN/TSG32O2
19N	P1_10	I/O	TAUD1I10/TAUD1O10/TAPA1UP/TAUD1O11/TSG32O1
19P	P1_7	I/O	TAUD1I7/TAUD1O7/TSG30O6
19R	P1_4	I/O	TAUD1I4/TAUD1O4/TAUD1O5/TSG30O5
19T	P1_0	I/O	TAUD1I0/TAUD1O0/ENCA0TIN0/TAUD1O1/TSG30O0
19U	P0_5	I/O	TAUD0I5/TAUD0O5/TAUJ0I0/TAUJ0O0/TAPA4ESO/INTP2
19V	P0_3	I/O	TAUD0I3/TAUD0O3/TAUJ0I3/TAUJ0O3/CAN2RX/INTP0
19W	P6_7	I/O	TAUD3I7/TAUD3O7/RDC3A1_OUT_U/TAPA1ESO
19Y	VSS(N.C.)	Power	-
20A	A2VSS(N.C.)	Power	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
20B	A2VSS(N.C.)	Power	-
20C	ADCC2I03	Input	-
20D	ADCC2I30	Input	-
20E	ADCC2I10	Input	-
20F	ADCC2I13	Input	-
20G	P3_5	I/O	TAUD2I13/TAUD2O13/TAPA2VN/ENCA1EC/RDC3A1_OUT_W/TAPA0ESO
20H	P3_4	I/O	TAUD2I12/TAUD2O12/TAPA2VP/ENCA1E1/RDC3A1_OUT_V/ADCC0TRG/TAPA3ESO
20J	P3_0	I/O	TAUD2I8/TAUD2O8/RSENT2RX/RSENT2SPCO/TAPA1ESO
20K	P2_4	I/O	TAUD2I4/TAUD2O4/TSG31O5/INTP4
20L	P2_0	I/O	TAUD2I0/TAUD2O0/TSG31O0/INTP0
20M	P1_14	I/O	TAUD1I14/TAUD1O14/TAPA1WP/TAUD1O15/TSG32O4
20N	P1_11	I/O	TAUD1I11/TAUD1O11/TAPA1UN/TSG32O3
20P	P1_8	I/O	TAUD1I8/TAUD1O8/TAUD1O9/TSG32O0/TAPA2ESO
20R	P1_5	I/O	TAUD1I5/TAUD1O5/TSG30O2
20T	P1_2	I/O	TAUD1I2/TAUD1O2/TAUD1O3/TSG30O1
20U	P6_9	I/O	TAUD3I9/TAUD3O9/TAUJ1I1/TAUJ1O1
20V	P0_4	I/O	TAUD0I4/TAUD0O4/TAUD3I1/TAUD3O1/CAN2TX/INTP1
20W	VSS(N.C.)	Power	-
20Y	VSS(N.C.)	Power	-

A.2.2 176-LFQFP

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
1	ADCC2I02	Input	-
2	ADCC2I01	Input	-
3	ADCC2I00	Input	-
4	A2VREFH	Power	-
5	A2VCC	Power	-
6	A2VSS	Power	-
7	A1VCC	Power	-
8	A1VREFH	Power	-
9	A1VSS	Power	-
10	ADCC1I32	Input	-
11	ADCC1I23	Input	-
12	ADCC1I22	Input	-
13	ADCC1I21	Input	-
14	ADCC1I20	Input	-
15	ADCC1I13	Input	-
16	ADCC1I12	Input	-
17	ADCC1I11	Input	-
18	ADCC1I10	Input	-
19	ADCC1I03	Input	-
20	ADCC1I02	Input	-
21	ADCC1I01	Input	RDC3A0COSMNT
22	ADCC1I31	Input	-
23	ADCC1I00	Input	RDC3A0SINMNT
24	VSS	Power	-
25	VDD	Power	-
26	RDC3A0S4	Input	-
27	RDC3A0S3	Input	-
28	RDC3A0S1	Input	-
29	RDC3A0S2	Input	-
30	RDC3A0RSO	I/O	-
31	RDC3A0COM	I/O	-
32	RVCC	Power	-
33	RVSS	Power	-
34	ADCC0I21	Input	-
35	ADCC0I20	Input	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
36	ADCC0I13	Input	-
37	ADCC0I12	Input	-
38	ADCC0I11	Input	-
39	ADCC0I10	Input	-
40	ADCC0I03	Input	-
41	ADCC0I02	Input	-
42	ADCC0I01	Input	-
43	ADCC0I00	Input	-
44	A0VREFH	Power	-
45	A0VSS	Power	-
46	ADCC0I30	Input	-
47	A0VCC	Power	-
48	P7_0	I/O	TAUD0I5/TAUD0O5/TAUJ0I0/TAUJ0O0/ADCC1TRG/CSIH2SC
49	P7_2	I/O	TAUD0I7/TAUD0O7/TAUJ0I2/TAUJ0O2/SCI0RXD/CSIH2SO
50	VDD	Power	-
51	P7_4	I/O	TAUD0I8/TAUD0O8/TAUJ0I3/TAUJ0O3/SCI0TXD/CSIH2SI
52	VSS	Power	-
53	P5_0	I/O	RLIN32RX/SCI0RXD/CSIH2CSS3
54	P5_1	I/O	RLIN32TX/SCI0TXD/CSIH2SSI
55	P5_2	I/O	RLIN31RX/SCI0SCK/SCI0SCK/CSIH2RYI/CSIH2RYO
56	P5_3	I/O	RLIN31TX/SCI1SCK/SCI1SCK
57	P5_4	I/O	RLIN30RX/SCI1RXD
58	P5_5	I/O	RLIN30TX/SCI1TXD/ ERROROUT_C#
59	P5_6	I/O	TAPA0ESO
60	P5_7	I/O	SCI2SCK
61	P5_8	I/O	SCI2RXD
62	P5_9	I/O	SCI2TXD
63	P4_0	I/O	CSIH1SI
64	P4_1	I/O	CSIH1SO
65	P4_2	I/O	CSIH1SC
66	VCC	Power	-
67	P4_3	I/O	CAN0RX/CSIH1CSS0
68	VSS	Power	-
69	P4_4	I/O	CAN0TX/CSIH1CSS1
70	VDD	Power	-
71	P4_5	I/O	CAN1RX/CSIH0CSS2/CSIH1CSS2
72	P4_6	I/O	CAN1TX/CSIH0CSS3/CSIH1CSS3
73	P4_7	I/O	CSIH0SI/CSIH1SSI
74	P4_8	I/O	CSIH0SO/CSIH1RYI/CSIH1RYO
75	P4_9	I/O	CSIH0SC
76	P4_10	I/O	TPBA0O/CAN2RX/CSIH0CSS0
77	P4_11	I/O	CAN2TX/CSIH0CSS1
78	P4_12	I/O	RLIN30RX/CSIH0SSI
79	P4_13	I/O	RLIN30TX/CSIH0RYI/CSIH0RYO
80	P4_14	I/O	CAN3RX
81	P4_15	I/O	CAN3TX/ ERROROUT_C#
82	VDD	Power	-
83	\AUDRST	Input	-
84	VSS	Power	-
85	AUDCK	Input	-
86	\AUDSYNC	Input	-
87	AUDATA3	I/O	-
88	AUDATA2	I/O	-
89	AUDATA1	I/O	-
90	AUDATA0	I/O	-
91	P6_2	I/O	ENCA1TIN0/RDC3A0_OUT_W/ADCC0TRG
92	P6_4	I/O	ENCA1TIN1/RDC3A0_OUT_V
93	P6_6	I/O	RDC3A0_OUT_U/TAPA0ESO
94	\ERROROUT_M	Output	-

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
95	VDD	Power	-
96	P0_6	I/O	TAUD0I6/TAUD0O6/TAUJ0I1/TAUJ0O1/ENCA0E0/RDC3A0_OUT_U/INTP3
97	VSS	Power	-
98	P0_7	I/O	TAUD0I7/TAUD0O7/TAUJ0I2/TAUJ0O2/ENCA0E1/RDC3A0_OUT_V/INTP4
99	VCC	Power	-
100	P0_8	I/O	TAUD0I8/TAUD0O8/TAUJ0I3/TAUJ0O3/ENCA0EC/RDC3A0_OUT_W/INTP5
101	P0_9	I/O	TAUD0I9/TAUD0O9/INTP6
102	P0_10	I/O	TAUD0I10/TAUD0O10/TAPA0UP/INTP7
103	P0_11	I/O	TAUD0I11/TAUD0O11/TAPA0UN/TSGTRG
104	P0_12	I/O	TAUD0I12/TAUD0O12/TAPA0VP/RSENT0RX/RSENT0SPCO
105	P0_13	I/O	TAUD0I13/TAUD0O13/TAPA0VN/RSENT0SPCO
106	P0_14	I/O	TAUD0I14/TAUD0O14/TAPA0WP/RSENT1RX/RSENT1SPCO
107	P0_15	I/O	TAUD0I15/TAUD0O15/TAPA0WN/RSENT1SPCO
108	DCUTDO	Output	-
109	\DCURDY	Output	-
110	VDD	Power	-
111	DCUTDI	Input	-
112	VSS	Power	-
113	DCUTCK	Input	-
114	DCUTMS	Input	-
115	\DCUTRST	Input	-
116	X2	Input	-
117	VSS	Power	-
118	X1	Input	-
119	VCC	Power	-
120	VSS	Power	-
121	SYSVCC	Power	-
122	MD1	Input	-
123	P7_8	Input	-
124	\RESET	Input	-
125	FLMODE	Input	-
126	VSS	Power	-
127	MD0	Input	-
128	SYSVCC	Power	-
129	VCC	Power	-
130	VSS	Power	-
131	P0_0	I/O	TAUD0I0/TAUD0O0/TAUJ0I0/TAUJ0O0
132	P0_1	I/O	TAUD0I1/TAUD0O1/TAUJ0I1/TAUJ0O1
133	P0_2	I/O	TAUD0I2/TAUD0O2/TAUJ0I2/TAUJ0O2/TAPA3ESO
134	P0_3	I/O	TAUD0I3/TAUD0O3/TAUJ0I3/TAUJ0O3/CAN2RX/INTP0
135	P0_4	I/O	TAUD0I4/TAUD0O4/CAN2TX/INTP1
136	P0_5	I/O	TAUD0I5/TAUD0O5/TAUJ0I0/TAUJ0O0/TAPA4ESO/INTP2
137	P1_0	I/O	TAUD1I0/TAUD1O0/ENCA0TIN0/TAUD1O1/TSG30O0
138	P1_1	I/O	TAUD1I1/TAUD1O1/ENCA0TIN1/TSG30O7
139	P1_2	I/O	TAUD1I2/TAUD1O2/TAUD1O3/TSG30O1
140	P1_3	I/O	TAUD1I3/TAUD1O3/TSG30O3
141	P1_4	I/O	TAUD1I4/TAUD1O4/TAUD1O5/TSG30O5
142	P1_5	I/O	TAUD1I5/TAUD1O5/TSG30O2
143	P1_6	I/O	TAUD1I6/TAUD1O6/TAUD1O7/TSG30O4
144	VDD	Power	-
145	P1_7	I/O	TAUD1I7/TAUD1O7/TSG30O6
146	VSS	Power	-
147	P1_8	I/O	TAUD1I8/TAUD1O8/TAUD1O9
148	P1_9	I/O	TAUD1I9/TAUD1O9/TAPA4ESO
149	P1_10	I/O	TAUD1I10/TAUD1O10/TAPA1UP/TAUD1O11
150	P1_11	I/O	TAUD1I11/TAUD1O11/TAPA1UN
151	P1_12	I/O	TAUD1I12/TAUD1O12/TAPA1VP/TAUD1O13
152	P1_13	I/O	TAUD1I13/TAUD1O13/TAPA1VN
153	P1_14	I/O	TAUD1I14/TAUD1O14/TAPA1WP/TAUD1O15

Pin Number	Primary Pin Name	Primary Electrical Type	Alternate Pin Name(s)
154	P1_15	I/O	TAUD1I15/TAUD1O15/TAPA1WN
155	P2_0	I/O	TSG31O0/INTP0
156	P2_1	I/O	TSG31O7/INTP1
157	P2_2	I/O	TSG31O1/INTP2
158	P2_3	I/O	TSG31O3/INTP3
159	P2_4	I/O	TSG31O5/INTP4
160	P2_5	I/O	TSG31O2/INTP5
161	P2_6	I/O	TSG31O4/INTP6
162	P2_7	I/O	TSG31O6/INTP7
163	P3_0	I/O	RSENT2RX/RSENT2SPCO/TAPA1ESO
164	VCC	Power	-
165	P3_1	I/O	ADCC0TRG/RSENT2SPCO
166	VSS	Power	-
167	P3_2	I/O	ADCC1TRG
168	P3_3	I/O	ENCA1E0
169	P3_4	I/O	ENCA1E1/ADCC0TRG/TAPA3ESO
170	P3_5	I/O	ENCA1EC/TAPA0ESO
171	P3_6	I/O	RSENT3RX/RSENT3SPCO
172	VDD	Power	-
173	P3_7	I/O	ADCC2TRG/RSENT3SPCO
174	VSS	Power	-
175	ADCC2I10	Input	-
176	ADCC2I03	Input	-

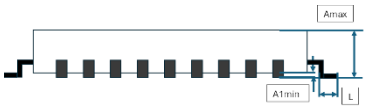
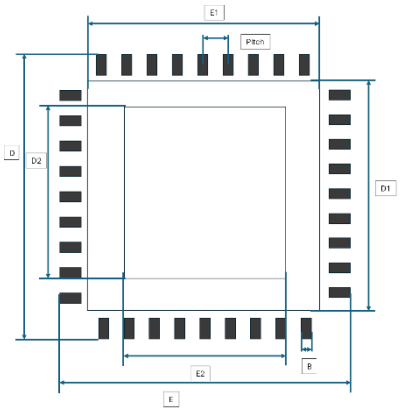
A.3 Symbol Parameters

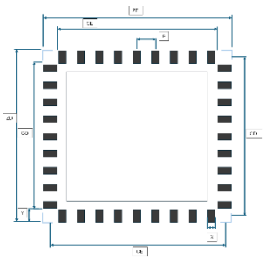
Orderable Part Number	Min Input Voltage	Max Input Voltage	Max Output Frequency	Min Operating Temperature	Max Operating Temperature	RAM Size	Memory Size	Interface	Number of ADC Channels	Number of I2C Channels	Number of SPI Channels	Number of UART Channels	Number of Timers/Counters
R7F701275EABG-C#AC6	4.5 V	5.5 V	320 MHz	– 40 °C	+150 °C	256 KB	4 MB	CAN, LIN, SPI	12-bit X 48-Ch	-	3	-	32-bit X 8-Ch, 16-bit X 64-Ch
R7F701275EABG-C#BC6	4.5 V	5.5 V	320 MHz	– 40 °C	+150 °C	256 KB	4 MB	CAN, LIN, SPI	12-bit X 48-Ch	-	3	-	32-bit X 8-Ch, 16-bit X 64-Ch
R7F701275EABG-C#HC4	4.5 V	5.5 V	320 MHz	– 40 °C	+150 °C	256 KB	4 MB	CAN, LIN, SPI	12-bit X 48-Ch	-	3	-	32-bit X 8-Ch, 16-bit X 64-Ch
R7F701275EABG-C#HC6	4.5 V	5.5 V	320 MHz	– 40 °C	+150 °C	256 KB	4 MB	CAN, LIN, SPI	12-bit X 48-Ch	-	3	-	32-bit X 8-Ch, 16-bit X 64-Ch
R7F701278EAFP#AC6	4.5 V	5.5 V	240 MHz	– 40 °C	+150 °C	128 KB	2 MB	CAN, LIN, SPI	12-bit X 30-Ch	-	3	-	32-bit X 4-Ch, 16-bit X 32-Ch
R7F701278EAFP#BC6	4.5 V	5.5 V	240 MHz	– 40 °C	+150 °C	128 KB	2 MB	CAN, LIN, SPI	12-bit X 30-Ch	-	3	-	32-bit X 4-Ch, 16-bit X 32-Ch

A.4 Footprint Design Information

A.4.1 176-LFQFP

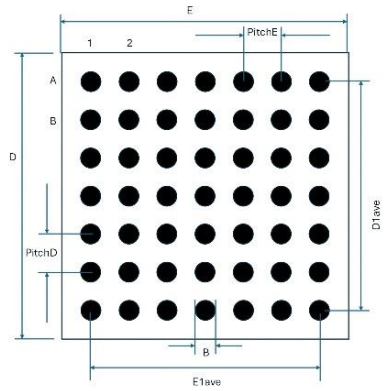
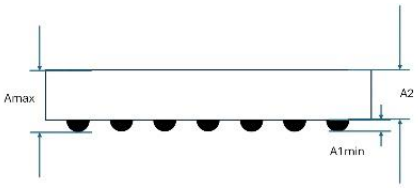
IPC Footprint Type	Package Code/ POD number	Number of Pins
QFP	PLQP0176KB-A	176

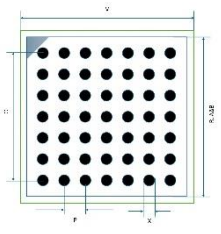
Description	Dimension	Value (mm)	Diagram
Minimum lead span (vertical side)	Dmin	25.8	
Maximum lead span (vertical side)	Dmax	26.2	
Minimum lead span (horizontal side)	Emin	25.8	
Maximum lead span (horizontal side)	Emax	26.2	
Minimum body span (vertical side)	D1min	23.9	
Maximum body span (vertical side)	D1max	24.1	
Minimum body span (horizontal side)	E1min	23.9	
Maximum body span (horizontal side)	E1max	24.1	
Minimum Lead Width	Bmin	0.15	
Maximum Lead Width	Bmax	0.25	
Minimum Lead Length	Lmin	0.35	
Maximum Lead Length	Lmax	0.65	
Maximum Height	Amax	1.7	
Minimum Standoff Height	A1min	0.05	
Minimum Lead Thickness	cmin	0.09	
Maximum Lead Thickness	cmax	0.2	
Number of pins (vertical side)	PinCountD	44	
Number of pins (horizontal side)	PinCountE	44	
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			
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	-	

A.4.2 252-BGA

IPC Footprint Type	Package Code/ POD number	Number of Pins
BGA	PRBG0252GB-A	252

Description	Dimension	Value (mm)	Diagram
Minimum body span (vertical side)	Dmin	17	
Maximum body span (vertical side)	Dmax	17	
Average length of grid (vertical side)	D1ave	15.2	
Minimum body span (horizontal side)	Emin	17	
Maximum body span (horizontal side)	Emax	17	
Average length of grid (horizontal side)	E1ave	15.2	
Minimum Standoff Height	A1min	0.3	
Maximum Height	Amax	2	
Average ball diameter	Bnom	0.54	
Distance between the center of any two adjacent balls (vertical side)	PitchD	0.8	
Distance between the center of any two adjacent balls (horizontal side)	PitchE	0.8	
P = Plain Grid, S = Staggered Grid	GridType	P	
F = Full Matrix, P = Perimeter, SD = Selectively Depopulated, TE = Thermally Enhanced	MatrixType	SD	
Number of balls (vertical side)	Rows	20	
Number of balls (horizontal side)	Columns	20	
Maximum number of ball positions (Rows x Columns)	Nmax	400	
Number of actual balls present	PinCount	252	
Ball positions removed from matrix. Example: C5-H10,B6-B9,A1	DepopulateBalls	-	
Ball positions added back into depopulated matrix. Example: C8,D6-F9	RepopulateBalls	-	

Recommended Land Pattern (NSMD Design)			
Description	**Dimension**	**Value (mm)**	**Diagram**
Diameter of pad. If specified this overrides the calculated value. This can be used to specify a manufacturer's recommended pad size.	X	-	
Solder Mask Expansion	S	-	