SEMICONDUCTOR

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FINAL PRODUCT CHANGE NOTIFICATION

PCN: 071447

Date: February 22, 2007

Subject: Qualification of 1Mb, 512Kb, and 256Kb Fast Async SRAM Devices in 90-nanometer Process Technology

To: <Contact Name>
<Customer>
<Contact Email>

Description of Change:

Introduction: Cypress has qualified 90-nanometer process technology, designated as C9FD-3R for Fast Async SRAM devices. 1Mb, 512Kb, and select 256Kb Fast Async SRAM devices are included in this notification. In order to consolidate the number of changes, the final transition to lead free and RoHS compliant packages has been included. In addition, there is a consolidation of portfolio options as identified in the tables below.

Process: Consistent with Cypress product roadmap of moving to the latest technology, Cypress is announcing the availability of the following devices. This announcement is part of a series of the 1Mb, 512Kb, and 256Kb Fast Asynchronous SRAM Process Technology transition from R52D-5R (0.25 micron, also referred to as 'R5') and R7FD-3R (0.15 micron, also referred to as 'R7') to C9FD-3R (90-nanometer, also referred to as 'C9') and lists the replacement devices that are now available for sampling. C9 is a 90-nanometer Process Technology qualified at our Cypress Fab 4, Bloomington, MN.

Package: Affected part numbers listed below include 28 pin and 32 Pin TSOP I, 32 pin and 44 pin TSOP II (Thin Shrunk Outline Package), and 28 pin, 32 pin, and 44 pin SOJ (Small Outline J-Bend) packages which are qualified to change from Tin/Lead (Sn/Pb) leadframes to Nickel/Palladium/Gold (Ni/Pd/Au) or Pure Tin (Sn) Lead-Free lead frame (RoHS – Restriction of Hazardous Substances Compliant). These packages are compatible with industry standard reflow temperatures ($220^{o}C/235^{o}C/260^{o}C$). The 48 ball BGA (Ball Grid Array) package is qualified to change from Tin/Lead (Sn/Pb) to Tin/Silver/Copper (Sn/Ag/Cu) lead-free finish. This package can be soldered at $260^{o}C$ reflow temperature only.

Other: Please see attached detail electrical characteristics change in excel spreadsheet.

The majority of existing part numbers will be offered in C9; however, there will be speed bin and temperature range consolidation. These changes are geared towards providing superior product performance and ensuring on-time delivery to the customer. (Please refer to attached list for recommended replacements)

Datasheets and models for both the old and the new part numbers can be downloaded from the Cypress Website (www.cypress.com).

Benefit of Change:

The simultaneous technology and package conversion will simplify Customer Qualification Processes. These changes will result in improved product performance, increased product availability, and on-time delivery for the customer.

Affected Parts: 198

Item No	Density	Affected Parts	Replacement Parts
1	1Mb	CY7C1006BN-15VC	CY7C1006D-10VXI
2	1Mb	CY7C1006BN-15VCT	CY7C1006D-10VXIT
3	1Mb	CY7C1007B-15VXC	CY7C1007D-10VXI
4	1Mb	CY7C1007B-15VXCT	CY7C1007D-10VXIT
5	1Mb	CY7C1007B-15VXI	CY7C1007D-10VXI
6	1Mb	CY7C1007B-15VXIT	CY7C1007D-10VXIT
7	1Mb	CY7C1007BN-15VXC	CY7C1007D-10VXI
8	1Mb	CY7C1007BN-15VXCT	CY7C1007D-10VXIT
9	1Mb	CY7C1009B-15VXC	CY7C1009D-10VXI
10	1Mb	CY7C1009B-15VXCT	CY7C1009D-10VXIT
11	1Mb	CY7C1009BN-12VC	CY7C1009D-10VXI
12	1Mb	CY7C1009BN-12VCT	CY7C1009D-10VXIT
13	1Mb	CY7C1009BN-15VC	CY7C1009D-10VXI
14	1Mb	CY7C1009BN-15VCT	CY7C1009D-10VXIT
15	1Mb	CY7C1009BN-15VI	CY7C1009D-10VXI
16	1Mb	CY7C1009BN-15VIT	CY7C1009D-10VXIT
17	1Mb	CY7C1009BN-20VC	CY7C1009D-10VXI
18	1Mb	CY7C1009BN-20VCT	CY7C1009D-10VXIT
19	1Mb	CY7C1019BN-12VC	CY7C1019D-10VXI
20	1Mb	CY7C1019BN-12VCT	CY7C1019D-10VXIT
21	1Mb	CY7C1019BN-12ZC	CY7C1019D-10ZSXI
22	1Mb	CY7C1019BN-12ZCT	CY7C1019D-10ZSXIT
23	1Mb	CY7C1019BN-12ZXC	CY7C1019D-10ZSXI
24	1Mb	CY7C1019BN-12ZXCT	CY7C1019D-10ZSXIT
25	1Mb	CY7C1019BN-15VC	CY7C1019D-10VXI
26	1Mb	CY7C1019BN-15VCT	CY7C1019D-10VXIT
27	1Mb	CY7C1019BN-15ZXC	CY7C1019D-10ZSXI
28	1Mb	CY7C1019BN-15ZXCT	CY7C1019D-10ZSXIT
29	1Mb	CY7C10211BN-10ZXC	CY7C1021D-10ZSXI
30	1Mb	CY7C10211BN-10ZXCT	CY7C1021D-10ZSXIT
31	1Mb	CY7C1021BN-12VC	CY7C1021D-10VXI
32	1Mb	CY7C1021BN-12VCT	CY7C1021D-10VXIT
33	1Mb	CY7C1021BN-12VI	CY7C1021D-10VXI
34	1Mb	CY7C1021BN-12VIT	CY7C1021D-10VXIT
35	1Mb	CY7C1021BN-12VXC	CY7C1021D-10VXI
36	1Mb	CY7C1021BN-12VXCT	CY7C1021D-10VXIT
37	1Mb	CY7C1021BN-12VXI	CY7C1021D-10VXI
38	1Mb	CY7C1021BN-12VXIT	CY7C1021D-10VXIT
39	1Mb	CY7C1021BN-12ZC	CY7C1021D-10ZSXI
40	1Mb	CY7C1021BN-12ZCT	CY7C1021D-10ZSXIT
41	1Mb	CY7C1021BN-12ZXC	CY7C1021D-10ZSXI
42	1Mb	CY7C1021BN-12ZXCT	CY7C1021D-10ZSXIT

43	1Mb	CY7C1021BN-15VC	CY7C1021D-10VXI
44	1Mb	CY7C1021BN-15VCT	CY7C1021D-10VXIT
45	1Mb	CY7C1021BN-15VI	CY7C1021D-10VXI
46	1Mb	CY7C1021BN-15VIT	CY7C1021D-10VXIT
47	1Mb	CY7C1021BN-15VXC	CY7C1021D-10VXI
48	1Mb	CY7C1021BN-15VXCT	CY7C1021D-10VXIT
49	1Mb	CY7C1021BN-15VXI	CY7C1021D-10VXI
50	1Mb	CY7C1021BN-15VXIT	CY7C1021D-10VXIT
51	1Mb	CY7C1021BN-15ZC	CY7C1021D-10ZSXI
52	1Mb	CY7C1021BN-15ZCT	CY7C1021D-10ZSXIT
53	1Mb	CY7C1021BN-15ZI	CY7C1021D-10ZSXI
54	1Mb	CY7C1021BN-15ZIT	CY7C1021D-10ZSXIT
55	1Mb	CY7C1021BN-15ZXC	CY7C1021D-10ZSXI
56	1Mb	CY7C1021BN-15ZXCT	CY7C1021D-10ZSXIT
57	1Mb	CY7C1021BN-15ZXI	CY7C1021D-10ZSXI
58	1Mb	CY7C1021BN-15ZXIT	CY7C1021D-10ZSXIT
59	1Mb	CY7C106BN-15VC	CY7C106D-10VXI
60	1Mb	CY7C106BN-15VCT	CY7C106D-10VXIT
61	1Mb	CY7C106BN-20VC	CY7C106D-10VXI
62	1Mb	CY7C106BN-20VCT	CY7C106D-10VXIT
63	1Mb	CY7C107BN-15VC	CY7C107D-10VXI
64	1Mb	CY7C107BN-15VCT	CY7C107D-10VXIT
65	1Mb	CY7C107BN-15VI	CY7C107D-10VXI
66	1Mb	CY7C107BN-15VIT	CY7C107D-10VXIT
67	1Mb	CY7C109B-15VXC	CY7C109D-10VXI
68	1Mb	CY7C109B-15VXCT	CY7C109D-10VXIT
69	1Mb	CY7C109BN-12VC	CY7C109D-10VXI
70	1Mb	CY7C109BN-12VCT	CY7C109D-10VXIT
71	1Mb	CY7C109BN-12ZC	CY7C109D-10ZXI
72	1Mb	CY7C109BN-12ZCT	CY7C109D-10ZXIT
73	1Mb	CY7C109BN-12ZXC	CY7C109D-10ZXI
74	1Mb	CY7C109BN-12ZXCT	CY7C109D-10ZXIT
75	1Mb	CY7C109BN-15VC	CY7C109D-10VXI
76	1Mb	CY7C109BN-15VCT	CY7C109D-10VXIT
77	1Mb	CY7C109BN-15VI	CY7C109D-10VXI
78	1Mb	CY7C109BN-15VIT	CY7C109D-10VXIT
79	1Mb	CY7C109BN-15ZC	CY7C109D-10ZXI
80	1Mb	CY7C109BN-15ZCT	CY7C109D-10ZXIT
81	1Mb	CY7C109BN-15ZXC	CY7C109D-10ZXI
82	1Mb	CY7C109BN-15ZXCT	CY7C109D-10ZXIT
83	1Mb	CY7C109BN-20VC	CY7C109D-10VXI
84	1Mb	CY7C109BN-20VCT	CY7C109D-10VXIT
85	1Mb	CY7C109BN-20VI	CY7C109D-10VXI
86	1Mb	CY7C109BN-20VIT	CY7C109D-10VXIT
87	1Mb	CY7C109BN-20ZC	CY7C109D-10ZXI
88	1Mb	CY7C109BN-20ZCT	CY7C109D-10ZXIT
89	1Mb	CY7C109BN-20ZXC	CY7C109D-10ZXI
90	1Mb	CY7C109BN-20ZXCT	CY7C109D-10ZXIT
91	512Kb	CY7C1020BN-12VC	CY7C1020D-10VXI
92	512Kb	CY7C1020BN-12VCT	CY7C1020D-10VXIT
93	512Kb	CY7C1020BN-12VXC	CY7C1020D-10VXI
94	512Kb	CY7C1020BN-12VXCT	CY7C1020D-10VXIT

95	512Kb	CY7C1020BN-12ZC	CY7C1020D-10ZSXI
96	512Kb	CY7C1020BN-12ZCT	CY7C1020D-10ZSXIT
97	512Kb	CY7C1020BN-12ZXC	CY7C1020D-10ZSXI
98	512Kb	CY7C1020BN-12ZXCT	CY7C1020D-10ZSXIT
99	512Kb	CY7C1020BN-15ZC	CY7C1020D-10ZSXI
100	512Kb	CY7C1020BN-15ZCT	CY7C1020D-10ZSXIT
101	512Kb	CY7C1020BN-15ZXC	CY7C1020D-10ZSXI
102	512Kb	CY7C1020BN-15ZXCT	CY7C1020D-10ZSXIT
103	256Kb	CY7C199C-12VXC	CY7C199D-10VXI
104	256Kb	CY7C199C-12VXCT	CY7C199D-10VXIT
105	256Kb	CY7C199C-20ZXI	CY7C199D-10ZXI
106	256Kb	CY7C199C-20ZXIT	CY7C199D-10ZXIT
107	256Kb	CY7C199CN-12VC	CY7C199D-10VXI
108	256Kb	CY7C199CN-12VCT	CY7C199D-10VXIT
109	256Kb	CY7C199CN-12VI	CY7C199D-10VXI
110	256Kb	CY7C199CN-12VIT	CY7C199D-10VXIT
111	256Kb	CY7C199CN-12VXI	CY7C199D-10VXI
112	256Kb	CY7C199CN-12VXIT	CY7C199D-10VXIT
113	256Kb	CY7C199CN-12ZC	CY7C199D-10ZXI
114	256Kb	CY7C199CN-12ZCT	CY7C199D-10ZXIT
115	256Kb	CY7C199CN-12ZXC	CY7C199D-10ZXI
116	256Kb	CY7C199CN-12ZXCT	CY7C199D-10ZXIT
117	256Kb	CY7C199CN-15VC	CY7C199D-10VXI
118	256Kb	CY7C199CN-15VCT	CY7C199D-10VXIT
119	256Kb	CY7C199CN-15VI	CY7C199D-10VXI
120	256Kb	CY7C199CN-15VIT	CY7C199D-10VXIT
121	256Kb	CY7C199CN-15VXC	CY7C199D-10VXI
122	256Kb	CY7C199CN-15VXCT	CY7C199D-10VXIT
123	256Kb	CY7C199CN-15ZC	CY7C199D-10ZXI
124	256Kb	CY7C199CN-15ZCT	CY7C199D-10ZXIT
125	256Kb	CY7C199CN-15ZXC	CY7C199D-10ZXI
126	256Kb	CY7C199CN-15ZXCT	CY7C199D-10ZXIT
127	256Kb	CY7C199CN-20VC	CY7C199D-10VXI
128	256Kb	CY7C199CN-20VCT	CY7C199D-10VXIT
129	256Kb	CY7C199CN-20ZI	CY7C199D-10ZXI
130	256Kb	CY7C199CN-20ZIT	CY7C199D-10ZXIT
131	256Kb	CY7C199CN-20ZXI	CY7C199D-10ZXI
132	256Kb	CY7C199CN-20ZXIT	CY7C199D-10ZXIT
133	256Kb	CY7C199N-12ZXC	CY7C199D-10ZXI
134	256Kb	CY7C199N-12ZXCT	CY7C199D-10ZXIT
135	256Kb	CY7C199N-15ZXC	CY7C199D-10ZXI
136	256Kb	CY7C199N-15ZXCT	CY7C199D-10ZXIT
137	256Kb	CY7C199N-20ZXC	CY7C199D-10ZXI
138	256Kb	CY7C199N-20ZXCT	CY7C199D-10ZXIT
139	1Mb	CY7C1018CV33-10VC	CY7C1018DV33-10VXI
140	1Mb	CY7C1018CV33-10VCT	CY7C1018DV33-10VXIT
141	1Mb	CY7C1018CV33-12VXI	CY7C1018DV33-10VXI
142	1Mb	CY7C1018CV33-12VXIT	CY7C1018DV33-10VXIT
143	1Mb	CY7C1019CV33-10VC	CY7C1019DV33-10VXI
144	1Mb	CY7C1019CV33-10VCT	CY7C1019DV33-10VXIT
145	1Mb	CY7C1019CV33-10ZXI	CY7C1019DV33-10ZSXI
146	1Mb	CY7C1019CV33-10ZXIT	CY7C1019DV33-10ZSXIT

147	1Mb	CY7C1019CV33-12BVXI	CY7C1019DV33-10BVXI
148	1Mb	CY7C1019CV33-12BVXIT	CY7C1019DV33-10BVXIT
149	1Mb	CY7C1019CV33-12VC	CY7C1019DV33-10VXI
150	1Mb	CY7C1019CV33-12VCT	CY7C1019DV33-10VXIT
151	1Mb	CY7C1019CV33-12VI	CY7C1019DV33-10VXI
152	1Mb	CY7C1019CV33-12VIT	CY7C1019DV33-10VXIT
153	1Mb	CY7C1019CV33-12ZXC	CY7C1019DV33-10ZSXI
154	1Mb	CY7C1019CV33-12ZXCT	CY7C1019DV33-10ZSXIT
155	1Mb	CY7C1019CV33-15VC	CY7C1019DV33-10VXI
156	1Mb	CY7C1019CV33-15VCT	CY7C1019DV33-10VXIT
157	1Mb	CY7C1019CV33-15VXC	CY7C1019DV33-10VXI
158	1Mb	CY7C1019CV33-15VXCT	CY7C1019DV33-10VXIT
159	1Mb	CY7C1019CV33-15ZXI	CY7C1019DV33-10ZSXI
160	1Mb	CY7C1019CV33-15ZXIT	CY7C1019DV33-10ZSXIT
161	1Mb	CY7C1021CV33-10BAXI	CY7C1021DV33-10BVXI
162	1Mb	CY7C1021CV33-10BAXIT	CY7C1021DV33-10BVXIT
163	1Mb	CY7C1021CV33-10VXC	CY7C1021DV33-10VXI
164	1Mb	CY7C1021CV33-10VXCT	CY7C1021DV33-10VXIT
165	1Mb	CY7C1021CV33-10ZI	CY7C1021DV33-10ZSXI
166	1Mb	CY7C1021CV33-10ZIT	CY7C1021DV33-10ZSXIT
167	1Mb	CY7C1021CV33-10ZXC	CY7C1021DV33-10ZSXI
168	1Mb	CY7C1021CV33-10ZXCT	CY7C1021DV33-10ZSXIT
169	1Mb	CY7C1021CV33-10ZXI	CY7C1021DV33-10ZSXI
170	1Mb	CY7C1021CV33-10ZXIT	CY7C1021DV33-10ZSXIT
171	1Mb	CY7C1021CV33-12BAXI	CY7C1021DV33-10BVXI
172	1Mb	CY7C1021CV33-12BAXIT	CY7C1021DV33-10BVXIT
173	1Mb	CY7C1021CV33-12VC	CY7C1021DV33-10VXI
174	1Mb	CY7C1021CV33-12VCT	CY7C1021DV33-10VXIT
175	1Mb	CY7C1021CV33-12VXI	CY7C1021DV33-10VXI
176	1Mb	CY7C1021CV33-12VXIT	CY7C1021DV33-10VXIT
177	1Mb	CY7C1021CV33-12ZXC	CY7C1021DV33-10ZSXI
178	1Mb	CY7C1021CV33-12ZXCT	CY7C1021DV33-10ZSXIT
179	1Mb	CY7C1021CV33-12ZXI	CY7C1021DV33-10ZSXI
180	1Mb	CY7C1021CV33-12ZXIT	CY7C1021DV33-10ZSXIT
181	1Mb	CY7C1021CV33-15VXC	CY7C1021DV33-10VXI
182	1Mb	CY7C1021CV33-15VXCT	CY7C1021DV33-10VXIT
183	1Mb	CY7C1021CV33-15ZXC	CY7C1021DV33-10ZSXI
184	1Mb	CY7C1021CV33-15ZXCT	CY7C1021DV33-10ZSXIT
185	1Mb	CY7C1021CV33-15ZXI	CY7C1021DV33-10ZSXI
185	1Mb	CY7C1021CV33-15ZXIT	CY7C1021DV33-10ZSXIT
187	1Mb	CY7C1021CV33-8VXC	CY7C1021DV33-10VXI
188	1Mb	CY7C1021CV33-8VXCT	CY7C1021DV33-10VXIT
189	1Mb	CY7C1021CV33-8ZXC	CY7C1021DV33-10ZSXI
190	1Mb	CY7C1021CV33-8ZXCT	CY7C1021DV33-10ZSXIT
191	512Kb	CY7C1020CV33-10ZC	CY7C1020DV33-10ZSXI
192	512Kb	CY7C1020CV33-10ZCT	CY7C1020DV33-10ZSXIT
193	512Kb	CY7C1020CV33-10ZXC	CY7C1020DV33-10ZSXI
194	512Kb	CY7C1020CV33-10ZXCT	CY7C1020DV33-10ZSXIT
195	512Kb	CY7C1020CV33-12ZC	CY7C1020DV33-10ZSXI
196	512Kb	CY7C1020CV33-12ZCT	CY7C1020DV33-10ZSXIT
197	512Kb	CY7C1020CV33-15ZC	CY7C1020DV33-10ZSXI
198	512Kb	CY7C1020CV33-15ZCT	CY7C1020DV33-10ZSXIT

Customer Part Numbers Affected:
Affected Parts: N/A

Qualification Status:
C9FD-3R process technology has been qualified under Qualification Test Plan (QTP) # 063807. In addition, 28 pin and 32 Pin TSOP I, 32 pin and 44 pin TSOP II (Thin Shrunk Outline Package), 28 pin, 32 pin, and 44 pin SOJ (Small Outline J-Bend) packages, and 48 ball BGA (Ball Grid Array) Lead-Free and RoHS compliant packages are qualified under 260°C reflow conditions, under the QTP numbers listed below. The qualification report for closure of these QTP's can be found in attachment to this PCN or by going to www.cypress.com, typing the QTP number in the search window , and clicking 'Go.

Package	QTP #
28-Lead TSOP Type I	060904
32-Lead TSOP Type I	043102
32-Lead TSOP Type II	043102
44-Lead TSOP Type II	063202
28-Lead (300-Mil) Molded SOJ	054502
28-Lead (400-Mil) Molded SOJ	063506
32-Lead (300-Mil) Molded SOJ	054502
32-Lead (400-Mil) Molded SOJ	061401
44-Lead (400-Mil) Molded SOJ	063104
48 VFBGA	063001 (ASE)
48 VFBGA	042801 (CML -RA)

Sample Status:
Samples are available now. Please contact your Local Sales Representative.

Approximate Implementation Date:
The implementation dates are aligned with the next distribution update cycle. Last Time Order Entry (Aug 05, 2007), and Last Time Ship Dates (Nov 05, 2007).

Anticipated Impact:
This notification marks the transition to Lead-Free and RoHS compliant packages. 28 pin and 32 Pin TSOP I, 32 pin and 44 pin TSOP II (Thin Shrunk Outline Package), and 28 pin, 32 pin, and 44 pin SOJ (Small Outline J-Bend) packages are backward compatible to $220^{o}C$ and $235^{o}C$ reflow temperatures.   The lead-free 48 ball BGA (Ball Grid Array) package is not reflow compatible with the leaded BGA (Ball Grid Array) package. Please contact your Local Sales Representative for any queries on Lead-free Transition.

Method of Identification:
The marketing part number will be revised to contain the letter 'D' after the base part number to designate the technology change to C9. Speed and Temperature consolidation also apply, refer to the attached file. In addition to letter 'D' the letter "X" in the suffix identifies the conversion Leaded to Lead-Free and RoHS compliant packaging. This Lead-Free package conversion changes the suffix ordering code for TSOP II (Thin Shrunk Outline Package) from "Z" to "ZS" and the suffix ordering code for BGA Package from "BA" to "BV". For example,

CY7C106**BN**-15VC to CY7C106**D**-10VXI
CY7C109**BN**-12ZC to CY7C109**D**-10ZXI (32 pin TSOP I package)
CY7C1021**BN**-12**Z**C to CY7C1021**D**-10**ZS**XI (44 pin TSOP II package)
CY7C1021**C**V33-12**BA**XI to CY7C1021**D**V33-10**BV**XI

Response Required:
<Response Text>

For additional information regarding this change, contact your local sales representative or by email to pcn_adm@cypress.com.

Sincerely,

Richard Oshiro
PCN Process Manager