

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

Send any inquiries to <http://www.renesas.com/inquiry>.

RENESAS TECHNICAL UPDATE

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Renesas Technology Corp.

Product Category	MPU&MCU	Document No.	TN-SH7-A606B/E	Rev.	2.00
Title	SH7750R New Package Product name		Information Category	Technical Notification	
Applicable Product	SH7750R	Lot No.	Reference Document	SH7750 Series Hardware Manual (ADE-602-124E)	
		All			

The followings are the information of new package product of SH7750R(HD6417750R)

1. New product names / specification

- (1) New products' pin arrangement refers to Appendix 1, 2.
- (2) Package dimensions is 17mm×17mm. Please refer to Appendix 3.
- (3) Mark example refer to Appendix 4.
- (4) DC characteristics and AC characteristics is same existing products
"HD6417750RBP200/200D/240/240D : 27mm x 27mmBGA".
- (5) The following shows new products' "Operating temperature" and "Solder ball".

New product name	Operating temperature	Solder ball	Note: about AC/DC spec. *1
HD6417750RBG200	-20 to 75	include lead (Sn-Pb)	HD6417750RBP200
HD6417750RBG200V	-20 to 75	Pb-free	HD6417750RBP200V
HD6417750RBG200D	-40 to 85	include lead (Sn-Pb)	HD6417750RBP200D
HD6417750RBG200DV	-40 to 85	Pb-free	HD6417750RBP200DV
HD6417750RBG240	-20 to 75	include lead (Sn-Pb)	HD6417750RBP240
HD6417750RBG240V	-20 to 75	Pb-free	HD6417750RBP240V
HD6417750RBG240D	-40 to 85	include lead (Sn-Pb)	HD6417750RBP240D
HD6417750RBG240DV	-40 to 85	Pb-free	HD6417750RBP240DV

*1: Please refer the AC/DC characteristics of these products.

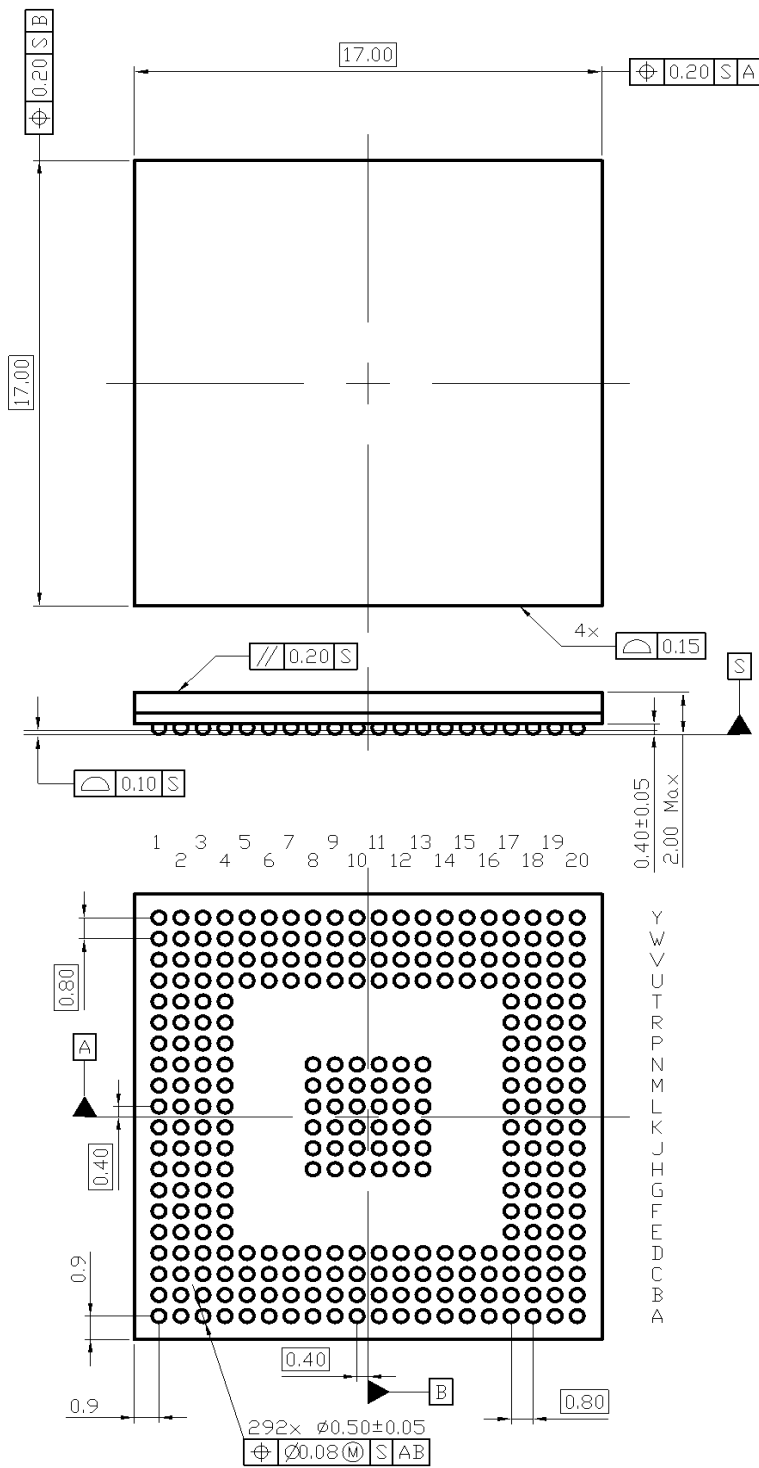
Appendix 1 Pin arrangement of PRBG0292GA-A(17mm X 17mm) version

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																					
A	EXTAL	XTAL	VSS-CPG	VDD-PLL1	VDD-PLL2	TCK	ASEBRK# /BRKACK	STATUS1	A1	DACK1	MD4/ CE2B#	A25	A23	A21	A19	SCK2/ MRESET#	TCLK	VDD-RTC	EXTAL2	XTAL2	A																																				
B	RESET#	RDY#	VDD-CPG	VSS-PLL2	TRST#	TMS	MD6/ IOIS16#	STATUS0	A0	DACK0	MD3/ CE2A#	A24	A22	A20	A18	MD7/ TXD	CTS2#	VSS-RTC	IRL3#	NM1	B																																				
C	CS1#	CS0#	VSS-PLL1	CKIO2E NB#	TDI	TDO	VDD	VDDQ	VDDQ	MD5/ RAS2#	VDDQ	VDDQ	VDDQ	VDD	VDDQ	MD8/ RTS2#	VDDQ	VSS-RTC	IRL1#	IRL2#	C																																				
D	CS6#	CS5#	CS4#	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	CA	MD1/ TXD2	MD2/ RXD2	IRL0#	D																																				
E	D47	RD2#	BS#	VSS	TOP P-FBGA1717-292 <table border="1" style="margin: auto;"> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> <tr><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td><td>VSS</td></tr> </table>												VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	D63	RD/ WR2#	MD0/ SCK	E
VSS	VSS	VSS	VSS	VSS													VSS																																								
VSS	VSS	VSS	VSS	VSS													VSS																																								
VSS	VSS	VSS	VSS	VSS													VSS																																								
VSS	VSS	VSS	VSS	VSS													VSS																																								
VSS	VSS	VSS	VSS	VSS													VSS																																								
VSS	VSS	VSS	VSS	VSS													VSS																																								
F	D46	D32	VDDQ	VSS													VSS	VDDQ	D62	D48	F																																				
G	D45	D33	VDD	VSS													VSS	VDD	D61	D49	G																																				
H	D44	D34	VDDQ	VSS													VSS	VDDQ	D60	D50	H																																				
J	D43	D35	VDDQ	VSS	VSS	VDDQ	D59	D51	J																																																
K	D42	D36	VDDQ	VSS	VSS	VDDQ	D53	D58	D52	K																																															
L	D38	D41	D37	VSS	VSS	VDDQ	D54	D57	L																																																
M	D39	D40	VDDQ	VSS	VSS	VDDQ	D55	D56	M																																																
N	D0	D15	VDDQ	VSS	VSS	VDDQ	D16	D31	N																																																
P	D1	D14	VDD	VSS	VSS	VDD	D17	D30	P																																																
R	D2	D13	VDDQ	VSS	VSS	VDDQ	D18	D29	R																																																
T	D3	D12	VDDQ	VSS	VSS	VDDQ	D19	D28	T																																																
U	D10	D4	D11	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSS	D26	D20	D27	U																																				
V	D9	D5	D7	WE4#/ CAS4#/ DQM4	VDDQ	VDDQ	VDD	VDDQ	VDDQ	VDDQ	CKIO2	VDDQ	VDDQ	VDD	VDDQ	VDDQ	WE2#/ CAS2#/ DQM2/ ICIQD#	WE7#/ CAS7#/ DQM7/ REG#	D25	D21	V																																				
W	BACK#/ BSREQ#	D6	CKE	WE1#/ CAS1#/ DQM1	A17	A15	A13	A11	A9	A7	A6	A4	A2	DRAK0	CS2#	RD#/ CASS#/ FRAME#	WE3#/ CAS3#/ DQM3/ ICIQWR#	D23	DREQ0#	DREQ1#	W																																				
Y	BRQ#/ BSACK#	D8	WE5#/ CAS5#/ DQM5	WE0#/ CAS0#/ DQM0	A16	A14	A12	A10	A8	CKIO	A5	A3	DRAK1	CS3#	RAS#	RD/ WR#	WE6#/ CAS6#/ DQM6	D24	D22	RXD	Y																																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																					

Appendix 2 17mm x 17mm (PRBG0292GA-A) Pin arrangement

No	Pin No.	Pin Name	No	Pin No.	Pin Name	No	Pin No.	Pin Name	No	Pin No.	Pin Name
1	A1	EXTAL	76	A2	XTAL	151	J3	VDDQ	226	U12	VSS
2	B1	RESE T#	77	B2	RDY#	152	K3	VDDQ	227	U13	VSS
3	C1	CS1#	78	C2	CS0#	153	L3	D37	228	U14	VSS
4	D1	CS6#	79	D2	CS5#	154	M3	VDDQ	229	U15	VSS
5	E1	D47	80	E2	RD2#	155	N3	VDDQ	230	U16	VSS
6	F1	D46	81	F2	D32	156	P3	VDD	231	U17	VSS
7	G1	D45	82	G2	D33	157	R3	VDDQ	232	T17	VSS
8	H1	D44	83	H2	D34	158	T3	VDDQ	233	R17	VSS
9	J1	D43	84	J2	D35	159	U3	D11	234	P17	VSS
10	K1	D42	85	K2	D36	160	V3	D7	235	N17	VSS
11	L1	D38	86	L2	D41	161	V4	WE4#/CAS4#/DQM4	236	M17	VSS
12	M1	D39	87	M2	D40	162	V5	VDDQ	237	L17	VSS
13	N1	D0	88	N2	D15	163	V6	VDDQ	238	K17	VSS
14	P1	D1	89	P2	D14	164	V7	VDD	239	J17	VSS
15	R1	D2	90	R2	D13	165	V8	VDDQ	240	H17	VSS
16	T1	D3	91	T2	D12	166	V9	VDDQ	241	G17	VSS
17	U1	D10	92	U2	D4	167	V10	VDDQ	242	F17	VSS
18	V1	D9	93	V2	D5	168	V11	CKIO2	243	E17	VSS
19	W1	BACK#/BSREQ#	94	W2	D6	169	V12	VDDQ	244	D17	CA
20	Y1	BREQ#/BSACK#	95	W3	CKE	170	V13	VDDQ	245	D16	VSS
21	Y2	D8	96	W4	WE1#/CAS1#/DQM1	171	V14	VDD	246	D15	VSS
22	Y3	WE5#/CAS5#/DQM5	97	W5	A17	172	V15	VDDQ	247	D14	VSS
23	Y4	WE0#/CAS0#/DQM0	98	W6	A15	173	V16	VDDQ	248	D13	VSS
24	Y5	A16	99	W7	A13	174	V17	WE2#/CAS2#/DQM2/ICIOR#	249	D12	VSS
25	Y6	A14	100	W8	A11	175	V18	WE7#/CAS7#/DQM7/REG#	250	D11	VSS
26	Y7	A12	101	W9	A9	176	U18	D26	251	D10	VSS
27	Y8	A10	102	W10	A7	177	T18	VDDQ	252	D9	VSS
28	Y9	A8	103	W11	A6	178	R18	VDDQ	253	D8	VSS
29	Y10	CKIO	104	W12	A4	179	P18	VDD	254	D7	VSS
30	Y11	A5	105	W13	A2	180	N18	VDDQ	255	D6	VSS
31	Y12	A3	106	W14	DRAKO	181	M18	VDDQ	256	D5	VSS
32	Y13	DRAK1	107	W15	CS2#	182	L18	VDDQ	257	H8	VSS
33	Y14	CS3#	108	W16	RD#/CASS#/FRAME#	183	K18	D53	258	J8	VSS
34	Y15	RAS#	109	W17	WE3#/CAS3#/DQM3/ICIOR#	184	J18	VDDQ	259	K8	VSS
35	Y16	RD/WR#	110	W18	D23	185	H18	VDDQ	260	L8	VSS
36	Y17	WE6#/CAS6#/DQM6	111	W19	DREQ0#	186	G18	VDD	261	M8	VSS
37	Y18	D24	112	V19	D25	187	F18	VDDQ	262	N8	VSS
38	Y19	D22	113	U19	D20	188	E18	D63	263	N9	VSS
39	Y20	RXD	114	T19	D19	189	D18	MD1/TXD2	264	N10	VSS
40	W20	DREQ1#	115	R19	D18	190	C18	VSS-RTC	265	N11	VSS
41	V20	D21	116	P19	D17	191	C17	VDDQ	266	N12	VSS
42	U20	D27	117	N19	D16	192	C16	MD8/RTS2#	267	N13	VSS
43	T20	D28	118	M19	D55	193	C15	VDDQ	268	M13	VSS
44	R20	D29	119	L19	D54	194	C14	VDD	269	L13	VSS
45	P20	D30	120	K19	D58	195	C13	VDDQ	270	K13	VSS
46	N20	D31	121	J19	D59	196	C12	VDDQ	271	J13	VSS
47	M20	D56	122	H19	D60	197	C11	VDDQ	272	H13	VSS
48	L20	D57	123	G19	D61	198	C10	MD5/RAS2#	273	H12	VSS
49	K20	D52	124	F19	D62	199	C9	VDDQ	274	H11	VSS
50	J20	D51	125	E19	RD/WR2#	200	C8	VDDQ	275	H10	VSS
51	H20	D50	126	D19	MD2/RXD2	201	C7	VDD	276	H9	VSS
52	G20	D49	127	C19	IRL1#	202	C6	TDO	277	J9	VSS
53	F20	D48	128	B19	IRL3#	203	C5	TDI	278	K9	VSS
54	E20	MD0/SCK	129	B18	VSS-RTC	204	C4	CKIO2ENB#	279	L9	VSS
55	D20	IRL0#	130	B17	CTS2#	205	D4	VSS	280	M9	VSS
56	C20	IRL2#	131	B16	MD7/TXD	206	E4	VSS	281	M10	VSS
57	B20	NMI	132	B15	A18	207	F4	VSS	282	M11	VSS
58	A20	XTAL2	133	B14	A20	208	G4	VSS	283	M12	VSS
59	A19	EXTAL2	134	B13	A22	209	H4	VSS	284	L12	VSS
60	A18	VDD-RTC	135	B12	A24	210	J4	VSS	285	K12	VSS
61	A17	TCLK	136	B11	MD3/CE2A#	211	K4	VSS	286	J12	VSS
62	A16	SCK2/MRESET#	137	B10	DACK0	212	L4	VSS	287	J11	VSS
63	A15	A19	138	B9	A0	213	M4	VSS	288	J10	VSS
64	A14	A21	139	B8	STATUS0	214	N4	VSS	289	K10	VSS
65	A13	A23	140	B7	MD6/IOIS16#	215	P4	VSS	290	L10	VSS
66	A12	A25	141	B6	TMS	216	R4	VSS	291	L11	VSS
67	A11	MD4/CE2B#	142	B5	TRST#	217	T4	VSS	292	K11	VSS
68	A10	DACK1	143	B4	VSS-PLL2	218	U4	VSS			
69	A9	A1	144	B3	VDD-CPG	219	U5	VSS			
70	A8	STATUS1	145	C3	VSS-PLL1	220	U6	VSS			
71	A7	ASEBRK#/BRKACK	146	D3	CS4#	221	U7	VSS			
72	A6	TCK	147	E3	BS#	222	U8	VSS			
73	A5	VDD-PLL2	148	F3	VDDQ	223	U9	VSS			
74	A4	VDD-PLL1	149	G3	VDD	224	U10	VSS			
75	A3	VSS-CPG	150	H3	VDDQ	225	U11	VSS			

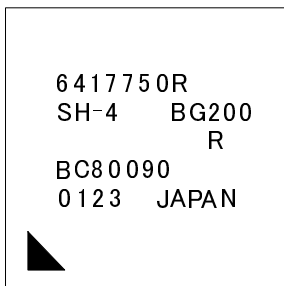
Appendix 3 17mm × 17mm (PRBG0292GA-A) Package dimension



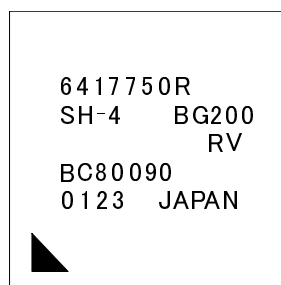
単位 : mm (Unit : mm)

パッケージコード (Package CODE)	PRBG0292GA-A
JEDECコード (JEDEC CODE)	—
JEITAコード (JEITA CODE)	EDR-7316A準拠
質量(g) (Mass)	0.9

Appendix 4 Mark example



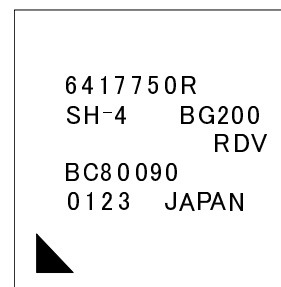
HD6417750RBG200 Mark example



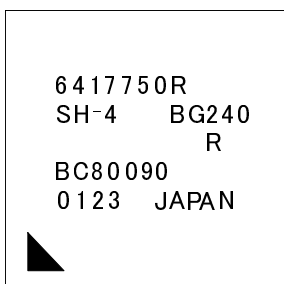
HD6417750RBG200V Mark example



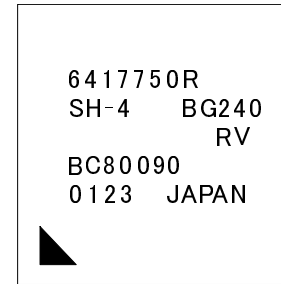
HD6417750RBG200D Mark example



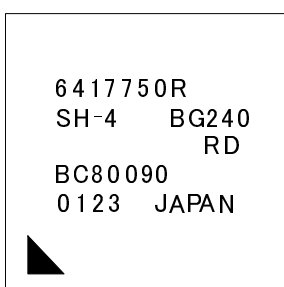
HD6417750RBG200DV Mark example



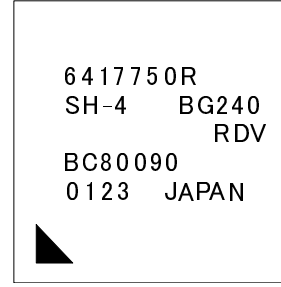
HD6417750RBG240 Mark example



HD6417750RBG240V Mark example



HD6417750RBG240D Mark example



HD6417750RBG240DV Mark example