

RENESAS SEMICONDUCTOR RELIABILITY REPORT

GROUP : RL78/G13

DEVICE : R5F101XXX

APPLICATION : Consumer / Industry

Quality Assurance Div.
Renesas Electronics Corporation

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Table. Reliability test results (QFP)

Test Items	Reference	Test Conditions	Results Failure/Size	Comment
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=125 °C, Vccmax, 1000 hrs	0/22	
High Temperature Storage Life (HTSL)	JESD22-A103	Ta=150 °C, 1000 hrs	0/22	
Temperature Humidity bias (THB) (*1)	JESD22-A101	Ta=85 °C, RH=85 %, Vccmax, 1000 hrs	0/22	
Temperature Cycling (TC) (*1)	JESD22-A104	Ta=-65 °C to 150 °C , 300 cycles	0/22	
Latch-Up (LU)	JESD78	Pulse Current Injection, I=+/-150 mA	0/3	
Electrostatic discharge (ESD-HBM)	JS-001	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/3	Class: 2
Electrostatic discharge (ESD-CDM)	JESD22-C101	+/-500V,1time	0/3	Class: C2
Solderability (SD)	J-STD-002	245 °C, 5 s, Solder coverage ≥95 %	0/5	
Resistance to Soldering Heat (PC)	JESD22-A113, J-STD-020	MSL3(Moisture Sensitivity Level 3)	0/22	

*1) With preconditioning per JESD22-A113, MSL 3

•It is tested to confirm that all the samples are satisfied with an individual product specification.

Note :

Basically qualification tests were performed using a representative product with the same wafer process and the same package structure .

Table. Reliability test results (QFN)

Test Items	Reference	Test Conditions	Results Failure/Size	Comment
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=125 °C, Vccmax, 1000 hrs	0/22	
High Temperature Storage Life (HTSL)	JESD22-A103	Ta=150 °C, 1000 hrs	0/22	
Temperature Humidity bias (THB) (*1)	JESD22-A101	Ta=85 °C, RH=85 %, Vccmax, 1000 hrs	0/22	
Temperature Cycling (TC) (*1)	JESD22-A104	Ta=-65 °C to 150 °C , 300 cycles	0/22	
Latch-Up (LU)	JESD78	Pulse Current Injection, I=+/-150 mA	0/3	
Electrostatic discharge (ESD-HBM)	JS-001	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/3	Class: 2
Electrostatic discharge (ESD-CDM)	JESD22-C101	+/-500V,1time	0/3	Class: C2
Solderability (SD)	J-STD-002	245 °C, 5 s, Solder coverage ≥95 %	0/5	
Resistance to Soldering Heat (PC)	JESD22-A113, J-STD-020	MSL3(Moisture Sensitivity Level 3)	0/22	

*1) With preconditioning per JESD22-A113, MSL 3

•It is tested to confirm that all the samples are satisfied with an individual product specification.

Note :

Basically qualification tests were performed using a representative product with the same wafer process and the same package structure .

Table. Reliability test results (SOP)

Test Items	Reference	Test Conditions	Results Failure/Size	Comment
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=125 °C, Vccmax, 1000 hrs	0/22	
High Temperature Storage Life (HTSL)	JESD22-A103	Ta=150 °C, 1000 hrs	0/22	
Temperature Humidity bias (THB) (*1)	JESD22-A101	Ta=85 °C, RH=85 %, Vccmax, 1000 hrs	0/22	
Temperature Cycling (TC) (*1)	JESD22-A104	Ta=-65 °C to 150 °C , 300 cycles	0/22	
Latch-Up (LU)	JESD78	Pulse Current Injection, I=+/-150 mA	0/3	
Electrostatic discharge (ESD-HBM)	JS-001	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/3	Class: 2
Electrostatic discharge (ESD-CDM)	JESD22-C101	+/-500V,1time	0/3	Class: C2
Solderability (SD)	J-STD-002	245 °C, 5 s, Solder coverage ≥95 %	0/5	
Resistance to Soldering Heat (PC)	JESD22-A113, J-STD-020	MSL3(Moisture Sensitivity Level 3)	0/22	

*1) With preconditioning per JESD22-A113, MSL 3

•It is tested to confirm that all the samples are satisfied with an individual product specification.

Note :

Basically qualification tests were performed using a representative product with the same wafer process and the same package structure .

Table. Reliability test results (BGA)

Test Items	Reference	Test Conditions	Results Failure/Size	Comment
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=125 °C, Vccmax, 1000 hrs	0/22	
High Temperature Storage Life (HTSL)	JESD22-A103	Ta=150 °C, 1000 hrs	0/22	
Temperature Humidity bias (THB) (*1)	JESD22-A101	Ta=85 °C, RH=85 %, Vccmax, 1000 hrs	0/22	
Temperature Cycling (TC) (*1)	JESD22-A104	Ta=-55 °C to 125 °C , 500 cycles	0/22	
Latch-Up (LU)	JESD78	Pulse Current Injection, I=+/-150 mA	0/3	
Electrostatic discharge (ESD-HBM)	JS-001	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/3	Class: 2
Electrostatic discharge (ESD-CDM)	JESD22-C101	+/-500V,1time	0/3	Class: C2
Resistance to Soldering Heat (PC)	JESD22-A113, J-STD-020	MSL3(Moisture Sensitivity Level 3)	0/22	

*1) With preconditioning per JESD22-A113, MSL 3

•It is tested to confirm that all the samples are satisfied with an individual product specification.

Note :

Basically qualification tests were performed using a representative product with the same wafer process and the same package structure .

Table. Reliability test results (LGA)

Test Items	Reference	Test Conditions	Results Failure/Size	Comment
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=125 °C, Vccmax, 1000 hrs	0/22	
High Temperature Storage Life (HTSL)	JESD22-A103	Ta=150 °C, 1000 hrs	0/22	
Temperature Humidity bias (THB) (*1)	JESD22-A101	Ta=85 °C, RH=85 %, Vccmax, 1000 hrs	0/22	
Temperature Cycling (TC) (*1)	JESD22-A104	Ta=-55 °C to 125 °C , 500 cycles	0/22	
Latch-Up (LU)	JESD78	Pulse Current Injection, I=+/-150 mA	0/3	
Electrostatic discharge (ESD-HBM)	JS-001	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/3	Class: 2
Electrostatic discharge (ESD-CDM)	JESD22-C101	+/-500V,1time	0/3	Class: C2
Resistance to Soldering Heat (PC)	JESD22-A113, J-STD-020	MSL3(Moisture Sensitivity Level 3)	0/22	

*1) With preconditioning per JESD22-A113, MSL 3

•It is tested to confirm that all the samples are satisfied with an individual product specification.

Note :

Basically qualification tests were performed using a representative product with the same wafer process and the same package structure .

The failure rate of the device in an actual use condition can be estimated by the below procedure.

•Equation for the failure rate estimation (λ)

$$\lambda = \lambda_b \times \pi T \text{ (FIT)}$$

①Unique failure rate (λ_b)

$$\lambda_b = 3.8 \text{ FIT}$$

Unique failure rate at $T_a=55^\circ\text{C}$ using 60 % confidence level.

②Temperature term (πT)

$$\pi T = \exp\{11600 \times E_a \times (1/(273+55) - 1/(273+T_a))\}$$

E_a : Activation energy (eV)

T_a : Ambient temperature ($^\circ\text{C}$)

πT simplified chart as $E_a=0.7 \text{ eV}$

T_a ($^\circ\text{C}$)	40	50	55	60	65	70	75	80	85	90	100	110
πT	0.31	0.68	1	1.45	2.08	2.95	4.15	5.77	7.96	10.88	19.82	34.99

•MTTF (Mean Time To Failure)

$$MTTF = 1/\lambda$$

Reference about Renesas package code

Package type		Package code *1
Lead type plastic package	QFP	PxQP
	SOP	PxSP
Non-lead type plastic package	QFN	PxQN
Grid array type plastic package	BGA	PxBG
	LGA	PxLG

*1. First four digit

Table. Product list

No	Group	Product part number	Package code	No	Group	Product part number	Package code
1	RL78/G13	R5F1016AASM	PTSP0020J*	51	RL78/G13	R5F101BGANA	PWQN0032K*
2	RL78/G13	R5F1016AASP	PLSP0020J*	52	RL78/G13	R5F101BGDNA	PWQN0032K*
3	RL78/G13	R5F1016ADSP	PLSP0020J*	53	RL78/G13	R5F101CAALA	PWL0036K*
4	RL78/G13	R5F1016CASM	PTSP0020J*	54	RL78/G13	R5F101CADLA	PWL0036K*
5	RL78/G13	R5F1016CASP	PLSP0020J*	55	RL78/G13	R5F101CCALA	PWL0036K*
6	RL78/G13	R5F1016CDSP	PLSP0020J*	56	RL78/G13	R5F101CCDLA	PWL0036K*
7	RL78/G13	R5F1016DASM	PTSP0020J*	57	RL78/G13	R5F101CDALA	PWL0036K*
8	RL78/G13	R5F1016DASP	PLSP0020J*	58	RL78/G13	R5F101CDDLA	PWL0036K*
9	RL78/G13	R5F1016DDSP	PLSP0020J*	59	RL78/G13	R5F101CEALA	PWL0036K*
10	RL78/G13	R5F1016EASM	PTSP0020J*	60	RL78/G13	R5F101CEDLA	PWL0036K*
11	RL78/G13	R5F1016EASP	PLSP0020J*	61	RL78/G13	R5F101CFALA	PWL0036K*
12	RL78/G13	R5F1016EDSP	PLSP0020J*	62	RL78/G13	R5F101CFDLA	PWL0036K*
13	RL78/G13	R5F1017AANA	PWQN0024K*	63	RL78/G13	R5F101CGALA	PWL0036K*
14	RL78/G13	R5F1017ADNA	PWQN0024K*	64	RL78/G13	R5F101CGDLA	PWL0036K*
15	RL78/G13	R5F1017CANAL	PWQN0024K*	65	RL78/G13	R5F101EAANA	PWQN0040K*
16	RL78/G13	R5F1017CDNAL	PWQN0024K*	66	RL78/G13	R5F101EADNAL	PWQN0040K*
17	RL78/G13	R5F1017DANAL	PWQN0024K*	67	RL78/G13	R5F101ECANAL	PWQN0040K*
18	RL78/G13	R5F1017DDNAL	PWQN0024K*	68	RL78/G13	R5F101ECDNAL	PWQN0040K*
19	RL78/G13	R5F1017EANAL	PWQN0024K*	69	RL78/G13	R5F101EDANAL	PWQN0040K*
20	RL78/G13	R5F1017EDNAL	PWQN0024K*	70	RL78/G13	R5F101EDDNAL	PWQN0040K*
21	RL78/G13	R5F1018AALA	PWL0025K*	71	RL78/G13	R5F101EEANAL	PWQN0040K*
22	RL78/G13	R5F1018ADLA	PWL0025K*	72	RL78/G13	R5F101EEDNAL	PWQN0040K*
23	RL78/G13	R5F1018CALA	PWL0025K*	73	RL78/G13	R5F101EFANAL	PWQN0040K*
24	RL78/G13	R5F1018CDLA	PWL0025K*	74	RL78/G13	R5F101EFDNAL	PWQN0040K*
25	RL78/G13	R5F1018DALA	PWL0025K*	75	RL78/G13	R5F101EGANAL	PWQN0040K*
26	RL78/G13	R5F1018DDLA	PWL0025K*	76	RL78/G13	R5F101EGDNAL	PWQN0040K*
27	RL78/G13	R5F1018EALA	PWL0025K*	77	RL78/G13	R5F101EHANAL	PWQN0040K*
28	RL78/G13	R5F1018EDLA	PWL0025K*	78	RL78/G13	R5F101EHDNAL	PWQN0040K*
29	RL78/G13	R5F101AAASP	PLSP0030J*	79	RL78/G13	R5F101FAAFP	PLQP0044G*
30	RL78/G13	R5F101AADSP	PLSP0030J*	80	RL78/G13	R5F101FADFP	PLQP0044G*
31	RL78/G13	R5F101ACASP	PLSP0030J*	81	RL78/G13	R5F101FCAFP	PLQP0044G*
32	RL78/G13	R5F101ACDSP	PLSP0030J*	82	RL78/G13	R5F101FCDFP	PLQP0044G*
33	RL78/G13	R5F101ADASP	PLSP0030J*	83	RL78/G13	R5F101FDAFP	PLQP0044G*
34	RL78/G13	R5F101ADDSP	PLSP0030J*	84	RL78/G13	R5F101FDDFP	PLQP0044G*
35	RL78/G13	R5F101AEASP	PLSP0030J*	85	RL78/G13	R5F101FEAFP	PLQP0044G*
36	RL78/G13	R5F101AEDSP	PLSP0030J*	86	RL78/G13	R5F101FEDFP	PLQP0044G*
37	RL78/G13	R5F101AFASP	PLSP0030J*	87	RL78/G13	R5F101FFAFP	PLQP0044G*
38	RL78/G13	R5F101AFDSP	PLSP0030J*	88	RL78/G13	R5F101FFDFP	PLQP0044G*
39	RL78/G13	R5F101AGASP	PLSP0030J*	89	RL78/G13	R5F101FGAFP	PLQP0044G*
40	RL78/G13	R5F101AGDSP	PLSP0030J*	90	RL78/G13	R5F101FGDFP	PLQP0044G*
41	RL78/G13	R5F101BAANAL	PWQN0032K*	91	RL78/G13	R5F101FHAFP	PLQP0044G*
42	RL78/G13	R5F101BADNAL	PWQN0032K*	92	RL78/G13	R5F101FHDFP	PLQP0044G*
43	RL78/G13	R5F101BCANAL	PWQN0032K*	93	RL78/G13	R5F101FJAFP	PLQP0044G*
44	RL78/G13	R5F101BCDNAL	PWQN0032K*	94	RL78/G13	R5F101FJDFF	PLQP0044G*
45	RL78/G13	R5F101BDANAL	PWQN0032K*	95	RL78/G13	R5F101FKAFF	PLQP0044G*
46	RL78/G13	R5F101BDDNAL	PWQN0032K*	96	RL78/G13	R5F101FKDFP	PLQP0044G*
47	RL78/G13	R5F101BEANAL	PWQN0032K*	97	RL78/G13	R5F101FLAFP	PLQP0044G*
48	RL78/G13	R5F101BEDNAL	PWQN0032K*	98	RL78/G13	R5F101FLDFP	PLQP0044G*
49	RL78/G13	R5F101BFANAL	PWQN0032K*	99	RL78/G13	R5F101GAFFB	PLQP0048K*
50	RL78/G13	R5F101BFDNAL	PWQN0032K*	100	RL78/G13	R5F101GAANAL	PWQN0048K*

Table. Product list

MCR-22-0499

No	Group	Product part number	Package code	No	Group	Product part number	Package code
101	RL78/G13	R5F101GADFB	PLQP0048K*	161	RL78/G13	R5F101LCDFFA	PLQP0064J*
102	RL78/G13	R5F101GADNA	PWQN0048K*	162	RL78/G13	R5F101LCDFB	PLQP0064K*
103	RL78/G13	R5F101GCAFB	PLQP0048K*	163	RL78/G13	R5F101LDABG	PVBG0064L*
104	RL78/G13	R5F101GCANA	PWQN0048K*	164	RL78/G13	R5F101LDFAFA	PLQP0064J*
105	RL78/G13	R5F101GCDFB	PLQP0048K*	165	RL78/G13	R5F101LDFAFB	PLQP0064K*
106	RL78/G13	R5F101GCDNA	PWQN0048K*	166	RL78/G13	R5F101LDDBG	PVBG0064L*
107	RL78/G13	R5F101GDAFB	PLQP0048K*	167	RL78/G13	R5F101LDDFA	PLQP0064J*
108	RL78/G13	R5F101GDANA	PWQN0048K*	168	RL78/G13	R5F101LDDFB	PLQP0064K*
109	RL78/G13	R5F101GDDFB	PLQP0048K*	169	RL78/G13	R5F101LEABG	PVBG0064L*
110	RL78/G13	R5F101GDDNA	PWQN0048K*	170	RL78/G13	R5F101LEAFA	PLQP0064J*
111	RL78/G13	R5F101GEAFB	PLQP0048K*	171	RL78/G13	R5F101LEAFB	PLQP0064K*
112	RL78/G13	R5F101GEANA	PWQN0048K*	172	RL78/G13	R5F101LEDBG	PVBG0064L*
113	RL78/G13	R5F101GEDFB	PLQP0048K*	173	RL78/G13	R5F101LEDFA	PLQP0064J*
114	RL78/G13	R5F101GEDNA	PWQN0048K*	174	RL78/G13	R5F101LEDFB	PLQP0064K*
115	RL78/G13	R5F101GFAFB	PLQP0048K*	175	RL78/G13	R5F101LFABG	PVBG0064L*
116	RL78/G13	R5F101GFANA	PWQN0048K*	176	RL78/G13	R5F101LFAFA	PLQP0064J*
117	RL78/G13	R5F101GDFB	PLQP0048K*	177	RL78/G13	R5F101LFAFB	PLQP0064K*
118	RL78/G13	R5F101GFDNA	PWQN0048K*	178	RL78/G13	R5F101LFDBG	PVBG0064L*
119	RL78/G13	R5F101GGAFB	PLQP0048K*	179	RL78/G13	R5F101LFDFA	PLQP0064J*
120	RL78/G13	R5F101GGANA	PWQN0048K*	180	RL78/G13	R5F101LDFB	PLQP0064K*
121	RL78/G13	R5F101GGDFB	PLQP0048K*	181	RL78/G13	R5F101LGABG	PVBG0064L*
122	RL78/G13	R5F101GGDNA	PWQN0048K*	182	RL78/G13	R5F101LGAFB	PLQP0064J*
123	RL78/G13	R5F101GHAFB	PLQP0048K*	183	RL78/G13	R5F101LGAFB	PLQP0064K*
124	RL78/G13	R5F101GHANA	PWQN0048K*	184	RL78/G13	R5F101LGDBG	PVBG0064L*
125	RL78/G13	R5F101GHDFB	PLQP0048K*	185	RL78/G13	R5F101LGDFFA	PLQP0064J*
126	RL78/G13	R5F101GHDNA	PWQN0048K*	186	RL78/G13	R5F101LGDFB	PLQP0064K*
127	RL78/G13	R5F101GJAFB	PLQP0048K*	187	RL78/G13	R5F101LHABG	PVBG0064L*
128	RL78/G13	R5F101GJANA	PWQN0048K*	188	RL78/G13	R5F101LHAFB	PLQP0064J*
129	RL78/G13	R5F101GJDFB	PLQP0048K*	189	RL78/G13	R5F101LHAFB	PLQP0064K*
130	RL78/G13	R5F101GJDNA	PWQN0048K*	190	RL78/G13	R5F101LHDBG	PVBG0064L*
131	RL78/G13	R5F101GKAFB	PLQP0048K*	191	RL78/G13	R5F101LHDFB	PLQP0064J*
132	RL78/G13	R5F101GKANA	PWQN0048K*	192	RL78/G13	R5F101LHDFB	PLQP0064K*
133	RL78/G13	R5F101GKDFB	PLQP0048K*	193	RL78/G13	R5F101LJABG	PVBG0064L*
134	RL78/G13	R5F101GKDNA	PWQN0048K*	194	RL78/G13	R5F101LJAFB	PLQP0064J*
135	RL78/G13	R5F101GLAFB	PLQP0048K*	195	RL78/G13	R5F101LJAFB	PLQP0064K*
136	RL78/G13	R5F101GLANA	PWQN0048K*	196	RL78/G13	R5F101LJDBG	PVBG0064L*
137	RL78/G13	R5F101GLDFB	PLQP0048K*	197	RL78/G13	R5F101LJDFA	PLQP0064J*
138	RL78/G13	R5F101GLDNA	PWQN0048K*	198	RL78/G13	R5F101LJDFB	PLQP0064K*
139	RL78/G13	R5F101JCAFA	PLQP0052J*	199	RL78/G13	R5F101LKAFB	PLQP0064J*
140	RL78/G13	R5F101JCDFFA	PLQP0052J*	200	RL78/G13	R5F101LKAFB	PLQP0064K*
141	RL78/G13	R5F101JDAFA	PLQP0052J*	201	RL78/G13	R5F101LKDFB	PLQP0064J*
142	RL78/G13	R5F101JDDFA	PLQP0052J*	202	RL78/G13	R5F101LKDFB	PLQP0064K*
143	RL78/G13	R5F101JEAFB	PLQP0052J*	203	RL78/G13	R5F101LLAFA	PLQP0064J*
144	RL78/G13	R5F101JEDFA	PLQP0052J*	204	RL78/G13	R5F101LLAFB	PLQP0064K*
145	RL78/G13	R5F101JFAFA	PLQP0052J*	205	RL78/G13	R5F101LLDFA	PLQP0064J*
146	RL78/G13	R5F101JFDFA	PLQP0052J*	206	RL78/G13	R5F101LLDFB	PLQP0064K*
147	RL78/G13	R5F101JGAFA	PLQP0052J*	207	RL78/G13	R5F101MFAFA	PLQP0080J*
148	RL78/G13	R5F101JGDFB	PLQP0052J*	208	RL78/G13	R5F101MFAFB	PLQP0080K*
149	RL78/G13	R5F101JHAFA	PLQP0052J*	209	RL78/G13	R5F101MFDFA	PLQP0080J*
150	RL78/G13	R5F101JHDFB	PLQP0052J*	210	RL78/G13	R5F101MFDFA	PLQP0080K*
151	RL78/G13	R5F101JJAFB	PLQP0052J*	211	RL78/G13	R5F101MGAFB	PLQP0080J*
152	RL78/G13	R5F101JJDFB	PLQP0052J*	212	RL78/G13	R5F101MGAFB	PLQP0080K*
153	RL78/G13	R5F101JKAFB	PLQP0052J*	213	RL78/G13	R5F101MGDFB	PLQP0080J*
154	RL78/G13	R5F101JKDFB	PLQP0052J*	214	RL78/G13	R5F101MGDFB	PLQP0080K*
155	RL78/G13	R5F101JLAFA	PLQP0052J*	215	RL78/G13	R5F101MHAFA	PLQP0080J*
156	RL78/G13	R5F101JLDFA	PLQP0052J*	216	RL78/G13	R5F101MHAFA	PLQP0080K*
157	RL78/G13	R5F101LCABG	PVBG0064L*	217	RL78/G13	R5F101MHDFA	PLQP0080J*
158	RL78/G13	R5F101LCAFA	PLQP0064J*	218	RL78/G13	R5F101MHDFA	PLQP0080K*
159	RL78/G13	R5F101LCAFB	PLQP0064K*	219	RL78/G13	R5F101MJAFB	PLQP0080J*
160	RL78/G13	R5F101LCDBG	PVBG0064L*	220	RL78/G13	R5F101MJAFB	PLQP0080K*

Table. Product list

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No	Group	Product part number	Package code	No	Group	Product part number	Package code
221	RL78/G13	R5F101MJDFA	PLQP0080J*	281			
222	RL78/G13	R5F101MJDFA	PLQP0080K*	282			
223	RL78/G13	R5F101MKAFA	PLQP0080J*	283			
224	RL78/G13	R5F101MKAFA	PLQP0080K*	284			
225	RL78/G13	R5F101MKDFA	PLQP0080J*	285			
226	RL78/G13	R5F101MKDFA	PLQP0080K*	286			
227	RL78/G13	R5F101MLAFA	PLQP0080J*	287			
228	RL78/G13	R5F101MLAFA	PLQP0080K*	288			
229	RL78/G13	R5F101MLDFA	PLQP0080J*	289			
230	RL78/G13	R5F101MLDFA	PLQP0080K*	290			
231	RL78/G13	R5F101PFAFA	PLQP0100J*	291			
232	RL78/G13	R5F101PFAFA	PLQP0100K*	292			
233	RL78/G13	R5F101PFDFA	PLQP0100J*	293			
234	RL78/G13	R5F101PFDFA	PLQP0100K*	294			
235	RL78/G13	R5F101PGAFA	PLQP0100J*	295			
236	RL78/G13	R5F101PGAFA	PLQP0100K*	296			
237	RL78/G13	R5F101PGDFA	PLQP0100J*	297			
238	RL78/G13	R5F101PGDFA	PLQP0100K*	298			
239	RL78/G13	R5F101PHAFA	PLQP0100J*	299			
240	RL78/G13	R5F101PHAFA	PLQP0100K*	300			
241	RL78/G13	R5F101PHDFA	PLQP0100J*	301			
242	RL78/G13	R5F101PHDFA	PLQP0100K*	302			
243	RL78/G13	R5F101PJFAFA	PLQP0100J*	303			
244	RL78/G13	R5F101PJFAFA	PLQP0100K*	304			
245	RL78/G13	R5F101PJDFFA	PLQP0100J*	305			
246	RL78/G13	R5F101PJDFFA	PLQP0100K*	306			
247	RL78/G13	R5F101PKAFA	PLQP0100J*	307			
248	RL78/G13	R5F101PKAFA	PLQP0100K*	308			
249	RL78/G13	R5F101PKDFA	PLQP0100J*	309			
250	RL78/G13	R5F101PKDFA	PLQP0100K*	310			
251	RL78/G13	R5F101PLAFA	PLQP0100J*	311			
252	RL78/G13	R5F101PLAFA	PLQP0100K*	312			
253	RL78/G13	R5F101PLDFA	PLQP0100J*	313			
254	RL78/G13	R5F101PLDFA	PLQP0100K*	314			
255	RL78/G13	R5F101SHAFA	PLQP0128K*	315			
256	RL78/G13	R5F101SHDFA	PLQP0128K*	316			
257	RL78/G13	R5F101SJAFA	PLQP0128K*	317			
258	RL78/G13	R5F101SJDFA	PLQP0128K*	318			
259	RL78/G13	R5F101SKAFA	PLQP0128K*	319			
260	RL78/G13	R5F101SKDFA	PLQP0128K*	320			
261	RL78/G13	R5F101SLAFA	PLQP0128K*	321			
262	RL78/G13	R5F101SLDFA	PLQP0128K*	322			
263				323			
264				324			
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