



Report No. APR-22-H0294  
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# RENESAS SEMICONDUCTOR RELIABILITY REPORT

APPLICATION: High Quality

SERIES: NP series(MOSFET)

DEVICE: Refer to Product List

Quality Assurance Div.  
Renesas Electronics Corporation

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## Reliability Test Results

TEST ITEM	Abrv	TEST CONDITION	Test Results		
			Lot	Sample Size	Failure
High Temperature Reverse Bias	HTRB	Tch=175°C, VDSS=Maximum rating, 1,000h	1	77	0
High Temperature Gate Bias	HTGB	Tch=175°C, VGSS=+20V, 1,000h	1	77	0
Temperature Cycling	TC	Ta=-55°C~ +150°C, 1,000cycles	1	77	0
High Humidity High Temperature Reverse Bias	H <sup>3</sup> TRB	Ta=85°C, 85%RH, VDSS=Maximum rating, 1,000h	1	77	0
Intermittent operating Life	IOL	ΔTc=100°C, 10kcycles	1	77	0
ESD Characterization (HBM)	HBM	C=100pF, R=1.5KΩ, ±1,000V	1	30	0
ESD Characterization (CDM)	CDM	±1000V	1	30	0
Solderability	SD	245°C, 5s. , 95% solder coverage minimum	3	30	0
Estimated failure rate	Estimated failure rate : 5Fit or less •Tch= 55°C •Ea = 0.7eV •C.L. = 60%				
Reliability test results may include data from family representative products. MSL Preconditioning was performed prior to TC & H3TRB & IOL.  <Judgement criteria> Electrical characteristics described in the delivery specification. (Solderability test is excluded.)  <Preconditioning Details> 125°C, 24h →85°C 85%RH, 168h(JEDEC MSL1) → Reflow(260°Cx10s, 220°Cx60~120s, 3time)					

## Product List

No.	DEVICE
1	NP109N04PUG-E1-AY
2	NP109N04PUG-E2-AY
3	NP110N03PUG-E1-AY
4	NP110N03PUG-E1-AZ
5	NP110N03PUG-E2-AY
6	NP110N04PDG-E1-AY
7	NP110N04PDG-E1-AZ
8	NP110N04PUG-E1-AY
9	NP110N04PUG-E1-AZ
10	NP110N04PUG-E2-AY
11	NP110N055PUG-E1-AY
12	NP110N055PUG-E2-AY
13	NP110N055PUG-E1-AZ
14	NP60N03KUG-E1-AY
15	NP60N03KUG-E2-AY
16	NP60N04KUG-E1-AY
17	NP60N04KUG-E1-AZ
18	NP60N04KUG-E2-AY
19	NP60N04KUG-E2-AZ
20	NP60N055KUG-E1-AY
21	NP60N055KUG-E2-AY
22	NP82N03PUG-E1-AY
23	NP82N03PUG-E1-AZ
24	NP82N03PUG-E2-AY
25	NP82N03PUG-E2-AZ
26	NP82N04PDG-E1-AY
27	NP82N04PDG-E2-AY
28	NP82N04PUG-E1-AY
29	NP82N04PUG-E1-AZ
30	NP82N04PUG-E1B-AY
31	NP82N04PUG-E2-AZ
32	NP82N055PUG-E1-AY
33	NP82N055PUG-E2-AY
34	NP82N055PUG-E2-AZ
35	NP82N06PDG-E2-AY
36	NP82N06PLG-E1-AY
37	NP88N03KDG-E1-AY
38	NP88N03KDG-E1-AZ
39	NP88N04KUG-E1-AY
40	NP88N04KUG-E1-AZ
41	NP88N04KUG-E2-AY
42	NP88N04NUG-S18-AZ