



Report No. APR-22-H0287
Date: Jun.28 2022

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

The reliability evaluation of this product conforms to AEC-Q101, and the results of representative evaluation items are reported below.

TEST ITEM	Abrv	TEST CONDITION	Test Results		
			Lot	Sample Size	Failure
High Temperature Reverse Bias	HTRB	Tch=175°C, VDSS=Maximum rating, 1,000h	3	231	0
High Temperature Gate Bias	HTGB	Tch=175°C, VGSS=+20V, 1,000h	3	231	0
Temperature Cycling	TC	Ta=-55°C～+150°C, 1,000cycles	3	231	0
Autoclave	AC	Ta=121°C, 100%RH, 100h	3	231	0
High Humidity High Temperature Reverse Bias	H ³ TRB	Ta=85°C, 85%RH, VDSS=Maximum rating, 1,000h	3	231	0
Intermittent operating Life	IOL	ΔTc=100°C, 10kcycles	3	231	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 & AC & 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°C×10s, 220°C×60～120s, 3time)					

Product List

No.	DEVICE
1	NP45N06VDK-E1-AY
2	NP45N06VDK-E2-AY
3	NP45N06VUK-E1-AY
4	NP45N06VUK-E2-AY
5	NP60N04VDK-E1-AY
6	NP60N04VDK-E2-AY
7	NP60N04VLK-E1-AY
8	NP60N04VLK-E2-AY
9	NP60N04VUK-E1-AY
10	NP60N04VUK-E2-AY
11	NP60N055VUK-E1-AY
12	NP60N06VDK-E1-AY
13	NP60N06VDK-E2-AY
14	NP60N06VLK-E1-AY
15	NP60N06VLK-E2-AY
16	NP75N04VDK-E1-AY
17	NP75N04VDK-E2-AY
18	NP75N04VUK-E1-AY
19	NP75N04VUK-E2-AY
20	NP90N04VDK-E1-AY
21	NP90N04VDK-E2-AY
22	NP90N04VLK-E1-AY
23	NP90N04VLK-E2-AY
24	NP90N04VUK-E1-AY
25	NP90N055VUK-E1-AY
26	NP90N06VDK-E1-AY
27	NP90N06VDK-E2-AY
28	NP90N06VLK-E1-AY
29	NP90N06VLK-E2-AY