



Report No. APR-22-H0293
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RENESAS SEMICONDUCTOR RELIABILITY REPORT

APPLICATION: High Quality

SERIES: NP series(MOSFET)

DEVICE: NP16N06YLL-E1-AY

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 | 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 |
| Autoclave | AC | Ta=121°C, 100%RH, 100h | 1 | 77 | 0 |
| High Humidity High Temperature Reverse Bias | H ³ 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 = 0.8eV •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°Cx10s, 220°Cx60~120s, 3time) | | | | | |