



Report No. APR-22-H0283  
Date: Jun.21 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 <sup>3</sup> 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°Cx10s, 220°Cx60~120s, 3time)					

