



Efficiency Through Technology

**RELIABILITY REPORT
2012**

Power Semiconductor Devices

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QUALITY AND RELIABILITY

IXYS is committed to setting a new standard for excellence in Power Semiconductors. Reflecting our dedication to industry leadership in the manufacture of medium to high power devices, reliability has assumed a primary position in raw material selection, design, and process technology.

Reliability utilizes information derived from applied research, engineering design, analysis of field applications and accelerated stress testing and integrates this knowledge to optimize device design and manufacturing processes.

All areas that impact reliability have received considerable attention in order to achieve our goal to be the # 1 Reliability Supplier of Power Semiconductor products. We believe IXYS products should be the most reliable components in your system.

We have committed significant resources to continuously improve and optimize our device design, wafer fab processes, assembly processes and test capabilities. As a result of this investment, IXYS has realized a dramatic improvement in reliability performance on all standardized tests throughout the product line.

Excellence in product reliability is "built-in", not tested-in. Moreover, it requires a total systems approach, involving all parties: from design to raw materials to manufacturing.

In addition to qualifying new products released to the market, life and environmental tests are periodically performed on standard products to maintain feedback on assembly and fabrication performance to assure product reliability. Further information on reliability of power devices is provided on www.ixys.com.

RELIABILITY TESTS

High Temperature Reverse Bias (HTRB)

Failure Modes: Gradual degradation of break-down characteristics due to presence of foreign materials and polar/ionic contaminants disturbing the electric field termination structure.

Sensitive Parameters: BV_{DSS} , BV_{CES} , V_{DRRM} , V_{RRM} , I_{DSS} , I_{CES} , I_{DRM} , I_{RRM} , V_{TH} .

High Temperature Gate Bias (HTGB)

Failure Modes: Rupture of the gate oxide due to localized thickness variations, structural anomalies, particulates in the oxide, channel inversion due to presence of mobile ions in the gate oxide.

Sensitive Parameters: I_{GSS} , I_{GES} , V_{TH} , I_{DSS} , I_{CES} .

Temperature Cycle

Failure modes: Thermal fatigue of silicon-metal and metal-metal interfaces due to heating and cooling, causing thermal and electrical performance degradation.

Sensitive Parameters: R_{thJC} , $R_{DS(on)}$, $V_{CE(sat)}$, V_T , V_F .

Humidity Test

Failure Modes: Degradation of electrical leakage characteristics due to moisture penetration into plastic packages.

Sensitive Parameters: BV_{DSS} , BV_{CES} , V_{DRRM} , V_{RRM} , I_{DSS} , I_{CES} , I_{DRM} , I_{RRM} , I_{GSS} , I_{GES} , V_{TH} .

Power Cycle

Failure Modes: Thermal fatigue of silicon-metal and metal-metal interfaces due to heating and cooling can cause thermal and electrical performance degradation.

Sensitive Parameters: R_{thJC} , $R_{DS(on)}$, $V_{CE(sat)}$, V_T , V_F , I_{DSS} , I_{CES} , I_{DRM} , I_{RRM} , BV_{DSS} , BV_{CES} , V_{DRRM} , V_{RRM} .

High Accelerated Stress Test (HAST)

Failure Modes: Degradation of electrical leakage characteristics due to moisture penetration into plastic packages.

Sensitive Parameters: BV_{DSS} , BV_{CES} , V_{DRRM} , V_{RRM} , I_{DSS} , I_{CES} , I_{DRM} , I_{RRM} , I_{GSS} , I_{GES} , V_{TH} .

TERMS IN TABLES

SUMMARY TABLES 1 AND 2:

AF: acceleration factor

$$AF = \exp \{ Ea * [(T_2 - T_1) / (T_2 * T_1)] / k \} \quad (1)$$

Ea: activation energy; @ HTRB Ea = 1.0 eV
@ HTGB Ea = 0.4 eV

k: Boltzmann's constant $8.6 \cdot 10^{-5}$ eV/K

T₁: abs. application junction temperature (273+Tj) K

T₂: abs. test junction temperature (273+Tj) K

UCL: upper confidence limit (60%)

Total Failures @ 60% UCL:

$$N = r + dr \quad (2)$$

r: number of failed devices

dr: additional term, depending on both r and UCL

MTTF: Mean Time To Failures = 1/Failure Rate

FIT: 1 FIT = 1 failure / 10⁹ hrs

TABLES 3:

ΔT: max Tj - min Tj during Test

DEFINITION OF FAILURE

Failure criteria are defined according to IEC 60747 standard series

Summary of Tables 1A - 1H: HTRB

	Table 1A MOSFET/IGBT discrete device	Table 1B MOSFET/IGBT Module	Table 1C Thyr./Diode Module	Table 1D Controller/ Rec. Bridge	Table 1E FRED	Table 1F Schottky Diode	Table 1G Thyr./Diode discrete device	Table 1H Breakover Diode	
Failure Rate [FIT] 125°C, 60% UCL	171	14744	15293	10599	7190	7576	4863	30585	
Failure Rate [FIT] 90°C, 60% UCL	10	883	916	635	431	454	291	1831	
Total Lots Tested	394	11	16	13	32	17	19	4	
Total Devices Tested	12285	104	160	170	550	340	330	80	
Total Failures	Actual 60% UCL {eq. (2)}	0 0,92	0 0,92	0 0,92	2 2,10	0 0,92	0 0,92	0 0,92	
Total Equivalent Device Hours @ 125°C {AF eq. (1)}	12270331	62400	60160	86800	292080	121440	189177	30080	
MTTF (Years)	125°C 60% UCL 90°C 60% UCL	667 11139	8 129	7 125	11 180	16 265	15 252	23 392	4 62

Summary of Table 2A - 2B: HTGB

	Table 2A MOSFET/IGBT discrete device	Table 2B MOSFET/IGBT Module	
Failure Rate [FIT] 125°C, 60% UCL	106	21495	
Failure Rate [FIT] 90°C, 60% UCL	34	6934	
Total Lots Tested	286	13	
Total Devices Tested	8960	126	
Total Failures	Actual 60% UCL {eq. (2)}	0 0,92	
Total Equivalent Device Hours @ 125°C {AF eq. (1)}	8715780	42800	
MTTF (Years)	125°C 60% UCL 90°C 60% UCL	1081 3353	5 16

Summary of Tables 3A - 3G: Power Cycle

	Table 3A MOSFET/IGBT discrete device	Table 3B MOSFET/IGBT Module	Table 3C Thyr./Diode Module	Table3D Controller/ Rec. Bridge	Table 3E FRED	Table 3F Schottky Diode	Table 3G Thyr./Diode discrete device
Total Lots Tested	89	4	5	5	15	7	17
Total Devices Tested	2423	36	50	50	280	140	280
Total Failures	0	0	0	0	0	0	0
Total Device Cycles	24496000	620000	500000	220000	660000	1080000	670000

Summary of Tables 4A - 4H: Temperature Cycle

	Table 4A MOSFET/IGBT discrete device	Table 4B MOSFET/IGBT Module	Table 4C** Thyr./Diode Module	Table4D Controller/ Rec. Bridge	Table 4E FRED	Table 4F Schottky Diode	Table 4G Thyr./Diode discrete device	Table 4H Breakover Diode
Total Lots Tested	325	11	15	13	29	19	41	4
Total Devices Tested	22317	116	170	200	590	400	749	80
Total Failures	0	0	1	1	0	0	5	0
Total Device Cycles	8052290	8000	11100	12900	40600	43000	79330	5000

** Max. storage temperature specified = 125°C. For acceleration temperature cycling conditions Tmax = 150°C applied

Summary of Tables 5A - 5H: Humidity Test

	Table 5A MOSFET/IGBT discrete device	Table 5B MOSFET/IGBT Module	Table 5C Thyr./Diode Module	Table5D Controller/ Rec. Bridge	Table 5E FRED	Table 5F Schottky Diode	Table 5G Thyr./Diode discrete device	Table 5H Breakover Diode
Total Lots Tested	9	5	4	3	11	6	7	4
Total Devices Tested	297	46	35	30	240	120	120	80
Total Failures	0	0	0	0	0	2	0	0
Total Device Hours	46592	29360	18360	13360	19680	8640	17680	4800

Summary of Tables 6A: HAST

	Table 6A MOSFET/IGBT discrete device
Total Lots Tested	116
Total Devices Tested	3622
Total Failures	0
Total Device Hours	347712

HTRB (Tables 1A .. 1H)

TABLE 1A: MOSFET/IGBT single device									
#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours	Remark
								[hrs]	
1	GWM100-01X1 SL	3030	80	125	1000	20	0	20000	
2	GWM100-01X1 SL	3031	80	125	1000	20	0	20000	
3	GWM160-0055X1SL	3232	44	150	1000	20	0	20000	
4	GWM160-0055X2SL	3233	44	150	1000	20	0	20000	
5	IEA21PG1200LA	2805	960	125	1000	60	0	60000	
6	IXA271F1200HJ	3376	960	125	1000	20	0	20000	
7	IXA451F1200HB	3023	960	125	168	20	0	3360	
8	IXA41F1200UC	3116	960	150	1000	20	0	20000	
9	IXA551200HJ	2585	960	125	1000	20	0	20000	
10	IXA601F1200NA	2613	960	125	1000	20	0	20000	
11	IXBH9N160G	2446	1280	125	168	20	0	3360	
12	IXBH9N160G	3075	1280	125	168	20	0	3360	
13	IXBX64N250	TP0952	960	85	1000	30	0	30000	
14	IXBX64N250	TP1130	960	125	1000	30	0	30000	
15	IXBX75N170	TP1031	960	125	1000	30	0	30000	
16	IXCH36N250	TP1139	960	80	1000	30	0	30000	
17	IXDH20N120	3356	960	125	168	20	0	3360	
18	IXDH30N120D1	2603	960	125	168	20	0	3360	
19	IXDH35N60BD1	2951	480	125	168	20	0	3360	
20	IXDH35N60BD1	3229	480	125	168	20	0	3360	
21	IXEH25N120D1	2628	960	125	168	20	0	3360	
22	IXFA4N100Q	TS1108	800	125	1000	30	0	30000	
23	IXFB100N50Q3	SP1106	400	125	1000	30	0	30000	
24	IXFB110N60P3	SP1110	480	125	1000	30	0	30000	
25	IXFB120N50P2	SP1015	400	125	1000	30	0	30000	
26	IXFB132N50P3	SP1110	400	125	1000	30	0	30000	
27	IXFB170N30P	SP0842	240	125	1000	30	0	30000	
28	IXFB38N100Q2	TP0924	800	125	1000	30	0	30000	
29	IXFB38N100Q2	TP0933	800	125	1000	30	0	30000	
30	IXFB38N100Q2	TP1115	800	125	1000	30	0	30000	
31	IXFB40N110P	SP0851	800	125	1000	30	0	30000	
32	IXFB40N110P	SP0924	880	125	1000	30	0	30000	
33	IXFB40N110P	TP0934	880	125	1000	25	0	30000	
34	IXFB40N110P	TP0952	880	125	1000	30	0	30000	
35	IXFB40N110P	TP1026	880	125	1000	30	0	30000	
36	IXFB44N100P	TP0930	800	125	1000	30	0	30000	
37	IXFB44N100Q3	SP1106	800	125	1000	30	0	30000	
38	IXFB62N80Q3	SP1118	640	125	1000	30	0	30000	
39	IXFB80N50Q2	SP0908	400	125	1000	30	0	30000	
40	IXFB82N60P	SP0851	480	125	1000	30	0	30000	
41	IXFB82N60P	SP0851	480	125	1000	30	0	30000	
42	IXFB82N60Q3	SP1118	480	125	1000	30	0	30000	
43	IXFC26N50	SF0938	400	125	1000	30	0	30000	
44	IXFH100N25P	SS1049	200	125	1000	30	0	30000	
45	IXFH10N100	SP0848	800	125	1000	30	0	30000	
46	IXFH110N15T2	SP0848	120	125	1000	30	0	30000	
47	IXFH120N25T	SS1115	200	125	1000	30	0	30000	
48	IXFH120N25T	SP1141	200	125	1000	77	0	30000	
49	IXFH12N100	TP0848	800	125	1000	30	0	30000	
50	IXFH12N100F	SS1104	800	125	1000	30	0	30000	
51	IXFH12N100F	SS1052	800	125	1000	30	0	30000	
52	IXFH12N100F	SS1052	800	125	1000	30	0	30000	
53	IXFH12N100Q	TP1043	800	125	1000	30	0	30000	
54	IXFH12N80P	SS1051	640	125	1000	30	0	30000	
55	IXFH12N90	SS0911	720	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
56	IXFH13N80	SK0727	640	125	1000	30	0	30000	
57	IXFH150N17T	SK0841	136	125	1000	30	0	30000	
58	IXFH150N17T	SS1014	136	125	1000	30	0	30000	
59	IXFH150N17T	SS1014	136	125	1000	30	0	30000	
60	IXFH150N17T	SS1020	136	125	1000	30	0	30000	
61	IXFH150N17T	SP1021	136	125	1000	30	0	30000	
62	IXFH150N17T2	SS0952	136	125	1000	30	0	30000	
63	IXFH15N100Q	TP0848	800	125	1000	30	0	30000	
64	IXFH15N100Q3	SP1121	800	125	1000	30	0	30000	
65	IXFH15N60	SS1104	480	125	1000	30	0	30000	
66	IXFH15N80	TP0835	640	125	1000	30	0	30000	
67	IXFH15N80	TP0850	640	125	1000	30	0	30000	
68	IXFH160N15T2	SS0926	120	125	1000	30	0	30000	
69	IXFH18N100Q3	SP1136	800	125	1000	30	0	30000	
70	IXFH20N60	TP0848	480	125	1000	30	0	30000	
71	IXFH20N60	SS0905	480	125	1000	30	0	30000	
72	IXFH20N80P	SS1121	640	125	1000	30	0	30000	
73	IXFH20N80Q	TP0850	640	125	1000	30	0	30000	
74	IXFH22N60P3	SS1108	480	125	1000	30	0	30000	
75	IXFH22N60P3	SS1143	480	125	1000	30	0	30000	
76	IXFH230N075T2	SP0928	60	125	1000	30	0	30000	
77	IXFH23N80Q	SS0945	640	125	1000	30	0	30000	
78	IXFH26N50	SS0846	400	125	1000	30	0	30000	
79	IXFH26N50	TP0835	400	125	1000	30	0	30000	
80	IXFH26N50P	SK0843	400	125	1000	30	0	30000	
81	IXFH26N50Q	SP0850	400	125	1000	30	0	30000	
82	IXFH28N60P3	SS1105	480	125	1000	30	0	30000	
83	IXFH30N50P	SK0842	400	125	1000	30	0	30000	
84	IXFH30N50P	SA0915	400	125	1000	30	0	30000	
85	IXFH30N50Q3	SS1117	400	125	1000	30	0	30000	
86	IXFH400N075T2	SP0948	60	125	1000	30	0	30000	
87	IXFH40N30	TP0848	240	125	1000	30	0	30000	
88	IXFH40N30Q	TP0916	240	125	1000	30	0	30000	
89	IXFH40N30Q	SS1020	240	125	1000	30	0	30000	
90	IXFH42N50P2	SP1009	400	125	1000	30	0	30000	
91	IXFH42N60P3	SP1110	480	125	1000	30	0	30000	
92	IXFH44N50P	SA0915	400	125	1000	30	0	30000	
93	IXFH44N50Q3	SP1133	400	125	1000	30	0	30000	
94	IXFH4N100Q	TP0850	800	125	1000	30	0	30000	
95	IXFH4N100Q	TP0850	800	125	1000	30	0	30000	
96	IXFH50N30Q3	SP1117	240	125	1000	30	0	30000	
97	IXFH50N60P3	SP1109	480	125	1000	30	0	30000	
98	IXFH50N60P3	SP1127	480	125	1000	30	0	30000	
99	IXFH50N60P3	SP1127	480	125	1000	30	0	30000	
100	IXFH50N60P3	SP1127	480	125	1000	30	0	30000	
101	IXFH52N50P2	SP1010	400	125	1000	30	0	30000	
102	IXFH58N20	TK0849	160	125	1000	30	0	30000	
103	IXFH60N50P3	SP1109	400	125	1000	30	0	30000	
104	IXFH66N20Q	TP0917	160	125	1000	30	0	30000	
105	IXFH6N120P	TP0937	960	125	1000	30	0	30000	
106	IXFH70N15	SP0850	120	125	1000	30	0	30000	
107	IXFH70N20Q3	SS1117	160	125	1000	30	0	30000	
108	IXFH70N30Q3	SP1133	240	125	1000	30	0	30000	
109	IXFH74N20P	SS1039	160	125	1000	30	0	30000	
110	IXFH75N10Q	TP0917	80	125	1000	30	0	30000	
111	IXFH88N30P	SP1009	240	125	1000	77	0	30000	
112	IXFH94N30T	SS1115	240	125	1000	30	0	30000	
113	IXFH94N30T	SP1141	250	125	1000	77	0	30000	
114	IXFK230N20T	SP1106	160	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
115	IXFK230N20T	SP1106	160	125	1000	30	0	30000	
116	IXFK26N120P	TP1037	960	125	1000	30	0	30000	
117	IXFK26N120P	TP1102	960	125	1000	30	0	30000	
118	IXFK26N90	SP0936	720	125	1000	30	0	30000	
119	IXFK38N80Q2	TP1105	640	125	1000	30	0	30000	
120	IXFK420N10T	SP1046	80	125	1000	30	0	30000	
121	IXFK80N60P3	SP1142	480	125	1000	25	0	30000	
122	IXFK94N50P2	SP1051	400	125	1000	30	0	30000	
123	IXFK94N50P2	SP1111	400	125	1000	77	0	30000	
124	IXFN170N30P	SP1045	240	125	1000	30	0	30000	
125	IXFN200N10P	SP0918	80	125	1000	30	0	30000	
126	IXFN21N100Q	SF1040	800	125	1000	30	0	30000	
127	IXFN26N90	SF0942	720	125	1000	30	0	30000	
128	IXFN26N90	SF0942	720	125	1000	30	0	30000	
129	IXFN26N90	SF1006	720	125	1000	30	0	30000	
130	IXFN360N10T	SP0830	80	125	1000	30	0	30000	
131	IXFN44N60	SP1103	480	125	1000	30	0	30000	
132	IXFN80N50	SP0836	400	125	1000	30	0	30000	
133	IXFP4N100Q	TS1013	800	125	1000	30	0	30000	
134	IXFP4N100Q	TS1013	800	125	1000	30	0	30000	
135	IXFP4N100Q	TS1018	800	125	1000	30	0	30000	
136	IXFP4N100QM	T0919	800	125	1000	30	0	30000	
137	IXFP76N15T2	SS0920	120	125	1000	30	0	30000	
138	IXFP7N100P	SS0931		125	1000	30	0	30000	
139	IXFP7N100P	SS0933	800	125	1000	30	0	30000	
140	IXFP7N100P	SS0938	800	125	1000	30	0	30000	
141	IXFR140N30P	SS1001	240	125	1000	30	0	30000	
142	IXFR32N100Q3	SP1133	800	125	1000	30	0	30000	
143	IXFR4N100Q	TP0920	800	125	1000	30	0	30000	
144	IXFR4N100Q	TP0920	800	125	1000	30	0	30000	
145	IXFR4N100Q	TP0920	800	125	1000	30	0	30000	
146	IXFR66N50Q2	TP1122	400	125	1000	30	0	30000	
147	IXFT14N80P	SP0731	640	125	1000	30	0	30000	
148	IXFT36N60P	SP0928	480	125	1000	30	0	30000	
149	IXFV30N60PS	SF0929	480	125	1000	30	0	30000	
150	IXFX120N25P	SS0922	200	125	1000	30	0	30000	
151	IXFX120N25P	SF0942	240	125	1000	30	0	30000	
152	IXFX120N25P	2746	200	150	1000	80	0	80000	
153	IXFX120N30T	SP0849	240	125	1000	30	0	30000	
154	IXFX140N25T	SP0917	200	125	1000	30	0	30000	
155	IXFX140N30P	SK0747	240	125	1000	30	0	30000	
156	IXFX160N30T	SP0917	240	125	1000	30	0	30000	
157	IXFX180N07	SP1005	56	125	1000	30	0	30000	
158	IXFX180N10	SK0833	80	125	1000	30	0	30000	
159	IXFX180N10	SF0928	80	125	1000	30	0	30000	
160	IXFX180N25T	SS0908	200	125	1000	30	0	30000	
161	IXFX180N25T	SP0908	200	125	1000	30	0	30000	
162	IXFX210N17T	SS0912	136	125	1000	30	0	30000	
163	IXFX21N100Q	SS0922	800	125	1000	30	0	30000	
164	IXFX21N100Q	SS0922	800	125	1000	30	0	30000	
165	IXFX21N100Q	SS0922	800	125	1000	30	0	30000	
166	IXFX21N100Q	SS0922	800	125	1000	30	0	30000	
167	IXFX21N100Q	SS0922	800	125	1000	30	0	30000	
168	IXFX21N100Q	SS0930	800	125	1000	30	0	30000	
169	IXFX21N100Q	SS0930	800	125	1000	30	0	30000	
170	IXFX21N100Q	SS0930	800	125	1000	30	0	30000	
171	IXFX220N17T2	SP0931	136	125	1000	30	0	30000	
172	IXFX230N20T	SS0911	160	125	1000	30	0	30000	
173	IXFX240N15T2	SS0931	120	125	1000	30	0	30000	
174	IXFX24N100Q3	SP1137	800	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
175	IXFX260N17T	SS0912	136	125	1000	30	0	30000	
176	IXFX26N120P	TP1102	960	125	1000	30	0	30000	
177	IXFX30N110P	SK0837	880	125	1000	30	0	30000	
178	IXFX320N17T2	SP0931	136	125	1000	30	0	30000	
179	IXFX32N80Q3	SS1122	640	125	1000	30	0	30000	
180	IXFX32N90P	TS1122	720	125	1000	30	0	30000	
181	IXFX360N10T	SP0931	80	125	1000	30	0	30000	
182	IXFX44N55Q	SP0944	440	125	1000	30	0	30000	
183	IXFX44N80P	SF1006	640	125	1000	30	0	30000	
184	IXFX44N80P	SF1006	640	125	1000	30	0	30000	
185	IXFX44N80Q3	SP1123	640	125	1000	30	0	30000	
186	IXFX48N50Q	SS0846	400	125	1000	30	0	30000	
187	IXFX48N50Q	TP0849	400	125	1000	30	0	30000	
188	IXFX48N50Q	SF0938	400	125	1000	30	0	30000	
189	IXFX48N60Q3	SS1118	480	125	1000	30	0	30000	
190	IXFX64N50P	SS0921	400	125	1000	30	0	30000	
191	IXFX64N50P	SP0942	400	125	1000	30	0	30000	
192	IXFX64N50P	2924	200	150	1000	80	0	80000	
193	IXFX64N50Q3	SP1118	400	125	1000	30	0	30000	
194	IXFX64N50Q3	SS1118	400	125	1000	30	0	30000	
195	IXFX64N60P3	SP1110	480	125	1000	30	0	30000	
196	IXFX64N60Q3	SS1118	480	125	1000	30	0	30000	
197	IXFX73N30Q	SF0938	240	125	1000	30	0	30000	
198	IXFX78N50P3	SP1109	400	125	1000	30	0	30000	
199	IXFX80N50Q3	SP1106	400	125	1000	30	0	30000	
200	IXFX80N60P3	SP1109	480	125	1000	30	0	30000	
201	IXFX90N20Q	TP0849	160	125	1000	30	0	30000	
202	IXFX98N50P3	SP1110	400	125	1000	30	0	30000	
203	IXGH12N100	TP0907	800	125	1000	30	0	30000	
204	IXGH12N100	TP0907	800	125	1000	30	0	30000	
205	IXGH12N120A3	TP0942	960	125	1000	30	0	30000	
206	IXGH15N160	TP1020	960	125	1000	30	0	30000	
207	IXGH15N160	TP1020	960	125	1000	30	0	30000	
208	IXGH16N170	TP0946	960	125	1000	30	0	30000	
209	IXGH16N170	TP0946	960	125	1000	30	0	30000	
210	IXGH17N100	TP0848	800	125	1000	30	0	30000	
211	IXGH17N100	TP0848	800	125	1000	30	0	30000	
212	IXGH17N100	TP0848	800	125	1000	30	0	30000	
213	IXGH17N100	TP0907	800	125	1000	30	0	30000	
214	IXGH17N100	TP0907	800	125	1000	30	0	30000	
215	IXGH17N100	TP0943	800	125	1000	30	0	30000	
216	IXGH17N100	TP0943	800	125	1000	30	0	30000	
217	IXGH17N100	TP0943	800	125	1000	30	0	30000	
218	IXGH20N100	TP0924	800	125	1000	30	0	30000	
219	IXGH20N100A3	TP1117	800	125	1000	30	0	30000	
220	IXGH24N170A	TP0917	960	125	1000	30	0	30000	
221	IXGH24N60C4D1	SS1006	480	125	1000	30	0	30000	
222	IXGH25N160	SP1001	960	125	1000	30	0	30000	
223	IXGH25N160	TP1016	960	125	1000	30	0	30000	
224	IXGH2N250	TP1010	960	85	1000	30	0	30000	
225	IXGH30N120B3	TP0806	960	125	1000	30	0	30000	
226	IXGH30N60B2	SP1003	480	125	1000	30	0	30000	
227	IXGH30N60C3D1	SK0840	480	125	1000	30	0	30000	
228	IXGH48N60B3	SP0916	480	125	1000	30	0	30000	
229	IXGH48N60C3	SS1006	480	125	1000	30	0	30000	
230	IXGH50N60C4	SP1133	480	125	1000	30	0	30000	
231	IXGH50N60C4	SP1133	480	125	1000	30	0	30000	
232	IXGH56N60B3D1	TK0838	480	125	1000	30	0	30000	
233	IXGH60N60C3D1	SS0931	480	125	1000	30	0	30000	
234	IXGH72N60B3	SS0912	480	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
235	IXGH8N100	TP0944	800	125	1000	30	0	30000	
236	IXGH8N100	TP0944	800	125	1000	30	0	30000	
237	IXGH8N100	TP0944	800	125	1000	30	0	30000	
238	IXGK75N250	TP1110	960	85	1000	30	0	30000	
239	IXGK75N250	TP1047	960	85	1000	77	0	30000	
240	IXGP20N120A3	TS0905	960	125	1000	30	0	30000	
241	IXGQ240N30PB	SS0911	240	125	1000	30	0	30000	
242	IXGQ240N30PB	SS0911	240	125	1000	30	0	30000	
243	IXGQ240N30PB	SS0920	240	125	1000	30	0	30000	
244	IXGR16N170	TP0946	960	125	1000	30	0	30000	
245	IXGR48N60C3D1	SP0948	800	125	1000	30	0	30000	
246	IXGR48N60C3D1	SP0916	480	125	1000	30	0	30000	
247	IXGR48N60C3D1	SP0948	480	125	1000	30	0	30000	
248	IXGR48N60C3D1	SP0931	480	125	1000	30	0	30000	
249	IXGR60N60C2C1	SP0850	480	125	1000	30	0	30000	
250	IXGR60N60C3C1	SP0849	480	125	1000	45	0	30000	
251	IXGR72N60C3D1	SP0952	480	125	1000	30	0	30000	
252	IXGT32N120A3	TP1121	960	125	1000	30	0	30000	
253	IXGT60N60B2	SP0826	480	125	1000	30	0	30000	
254	IXGX120N120A3	TP0848	960	125	1000	30	0	30000	
255	IXGX320N60B3	SS1002	480	125	1000	30	0	30000	
256	IXGX320N60B3	SS1002	480	125	1000	30	0	30000	
257	IXGX64N250	TP1130	960	85	1000	30	0	30000	
258	IXGX72N60A3H1	SP0848	480	125	1000	30	0	30000	
259	IXGX72N60B3H1	SS0904	480	125	1000	77	0	30000	
260	IXGX72N60B3H1	SS0904	480	125	1000	77	0	30000	
261	IXGX72N60B3H1	SS0905	480	125	1000	77	0	30000	
262	IXGX72N60B3H1	SS0924	480	125	1000	18	0	30000	
263	IXGX72N60B3H1	SS0924	480	125	1000	30	0	30000	
264	IXGX72N60B3H1	SS0924	480	125	1000	29	0	30000	
265	IXGX72N60B3H1	SS0924	480	125	1000	30	0	30000	
266	IXGX72N60B3H1	SS0924	480	125	1000	30	0	30000	
267	IXGX72N60B3H1	SS0924	480	125	1000	30	0	30000	
268	IXGX72N60B3H1	SS0924	480	125	1000	10	0	30000	
269	IXGX72N60B3H1	SS0924	480	125	1000	15	0	30000	
270	IXGX72N60B3H1	SS0906	480	125	1000	30	0	30000	
271	IXGX72N60C3D1	SS1002	480	125	1000	30	0	30000	
272	IXGX72N60C3D1	SS1002	480	125	1000	30	0	30000	
273	IXKN75N60C	2955	480	125	168	10	0	1680	
274	IXKR40N60C	3077	480	125	168	20	0	3360	
275	IXLV1861	3061	2300	70	300	20	0	6000	
276	IXSD40N330-8T	3143	2000	150	1000	19	0	19000	
277	IXSD40N330-8T	3143	2000	60	168	20	0	3360	
278	IXSD40N330-8T	3143	2000	125	163	19	0	3097	
279	IXSN55N120AU1	TP1017	960	125	1000	30	0	30000	
280	IXTA1N100	TS1047	800	125	1000	30	0	30000	
281	IXTA2N100	K815	800	125	1000	30	0	30000	
282	IXTA2N100P	K736	800	125	1000	30	0	30000	
283	IXTA2R4N120P	TP0829	960	125	1000	30	0	30000	
284	IXTA36N30P	SS0905	240	125	1000	30	0	30000	
285	IXTA3N120	TS1115	960	125	1000	30	0	30000	
286	IXTA62N15P	SS1047	120	125	1000	30	0	30000	
287	IXTH03N100P	TP0844	800	125	1000	70	0	30000	
288	IXTH05N100	TP0943	800	125	1000	30	0	30000	
289	IXTH05N100	TP0943	800	125	1000	30	0	30000	
290	IXTH05N100	TP0943	800	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
291	IXTH05N100	TP1046	800	125	1000	80	0	30000	
292	IXTH05N100	TP1046	800	125	1000	30	0	30000	
293	IXTH05N100	TP1046	800	125	1000	30	0	30000	
294	IXTH08N100P	TP0848	800	125	1000	100	0	30000	
295	IXTH12N140	TP1119	960	85	1000	30	0	30000	
296	IXTH140P10T	SP1130	-80	125	1000	30	0	30000	
297	IXTH15N50L2	TK0837	400	125	1000	30	0	30000	
298	IXTH1N80P	TP0905	640	125	1000	30	0	30000	
299	IXTH20N60	SP0848	480	125	1000	30	0	30000	
300	IXTH21N50	SS1008	400	125	1000	30	0	30000	
301	IXTH24N60K	SP1017	480	125	1000	30	0	30000	
302	IXTH24N60K	SP1017	480	125	1000	30	0	30000	
303	IXTH24P20	TP1003	-160	125	1000	30	0	30000	
304	IXTH250N075T	SP0801	60	125	1000	30	0	30000	
305	IXTH260N055T2	SP0830	44	125	1000	30	0	30000	
306	IXTH260N055T2	SS0937	44	125	1000	30	0	30000	
307	IXTH30N60L2	TP0835	480	125	1000	30	0	30000	
308	IXTH32P20T	SP1035	-160	125	1000	30	0	30000	
309	IXTH360N055T2	SP0926	44	125	1000	30	0	30000	
310	IXTH360N055T2	SS0926	44	125	1000	30	0	30000	
311	IXTH3N120	SS0922	960	125	1000	30	0	30000	
312	IXTH3N120	SS0922	960	125	1000	30	0	30000	
313	IXTH3N120	SS0922	960	125	1000	30	0	30000	
314	IXTH3N120	SS0922	960	125	1000	30	0	30000	
315	IXTH3N120	SS0922	960	125	1000	30	0	30000	
316	IXTH440N055T2	SP0948	44	125	1000	30	0	30000	
317	IXTH48P20P	S1040	-160	125	1000	30	0	30000	
318	IXTH48P20P	SS1050	-160	125	1000	30	0	30000	
319	IXTH48P20P	SS1105	-160	125	1000	30	0	30000	
320	IXTH48P20P	SP1049	-160	125	1000	30	0	30000	
321	IXTH500N04T2	SP0945	32	125	1000	30	0	30000	
322	IXTH50P10	SS1033	-80	125	1000	30	0	30000	
323	IXTH50P10	TP1002	-80	125	1000	30	0	30000	
324	IXTH68P20T	SP1130	-160	125	1000	30	0	30000	
325	IXTH75N10	TP0848	80	125	1000	30	0	30000	
326	IXTH76P10T	SS1052	-80	125	1000	30	0	30000	
327	IXTH96N20P	SS0938	160	125	1000	30	0	30000	
328	IXTH96P085T	SP0926	-68	125	1000	30	0	30000	
329	IXTK40P50P	SP0747	-400	125	1000	30	0	30000	
330	IXTM21N50	SP1023	400	125	1000	30	0	30000	
331	IXTP100N04T2	SS0917	32	125	1000	30	0	30000	
332	IXTP102N15T	K834	120	125	1000	30	0	30000	
333	IXTP10P15T	SS1038	-120	125	1000	30	0	30000	
334	IXTP120P065T	SS1013	-52	125	1000	30	0	30000	
335	IXTP15P15T	SS1036	-120	125	1000	30	0	30000	
336	IXTP182N055T	SS1003	44	125	1000	30	0	30000	
337	IXTP1N80P	SS0908	640	125	1000	30	0	30000	
338	IXTP200N055T2	SS0847	44	125	1000	30	0	30000	
339	IXTP200N055T2	SS0951	44	125	1000	30	0	30000	
340	IXTP200N055T2	SS0951	44	125	1000	30	0	30000	
341	IXTP220N04T2	SS0927	32	125	1000	30	0	30000	
342	IXTP220N04T2	SS1001	44	125	1000	30	0	30000	
343	IXTP220N04T2	SS1051	32	125	1000	30	0	30000	
344	IXTP22N50PM	SS0924	800	125	1000	30	0	30000	
345	IXTP260N055T2	SS908	44	125	1000	30	0	30000	
346	IXTP26P10T	SS1040	-80	125	1000	30	0	30000	
347	IXTP2N100	SS0914	800	125	1000	30	0	30000	
348	IXTP32N20T	SS1051	160	125	1000	30	0	30000	
349	IXTP36N30P	SS0842	240	125	1000	30	0	30000	
350	IXTP3N120	SS0922	960	125	1000	30	0	30000	

TABLE 1A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
351	IOTP3N120	SS0922	960	125	1000	30	0	30000	
352	IOTP3N120	SS0922	960	125	1000	30	0	30000	
353	IOTP3N120	SS0930	960	125	1000	30	0	30000	
354	IOTP3N120	SS0930	960	125	1000	30	0	30000	
355	IOTP3N120	SS0930	960	125	1000	30	0	30000	
356	IOTP3N50P	SS1048	400	125	1000	30	0	30000	
357	IOTP450P2	SS1047	400	125	1000	30	0	30000	
358	IOTP48P05T	SS1040	-40	125	1000	30	0	30000	
359	IOTP60N10T	S1038	80	125	1000	30	0	30000	
360	IOTP80N12T2	SS1009	96	125	1000	30	0	30000	
361	IOTP80N12T2	SS1043	96	125	1000	30	0	30000	
362	IOTP8N50P	SS1050	400	125	1000	30	0	30000	
363	IOTQ100N25P	SS0846	200	125	1000	30	0	30000	
364	IOTQ110N10P	SS1045	80	125	1000	30	0	30000	
365	IOTQ130N15T	SK0715	120	125	1000	30	0	30000	
366	IOTQ170N10P	SS1041	80	125	1000	30	0	30000	
367	IOTQ22N60P	SK1040	480	125	1000	30	0	30000	
368	IOTQ22N60P	SS1104	480	125	1000	30	0	30000	
369	IOTQ36N30P	SS1029	240	125	1000	30	0	30000	
370	IOTQ40N50L2	SS0849	400	125	1000	30	0	30000	
371	IOTQ48N20T	SS1004	160	125	1000	30	0	30000	
372	IOTQ75N10P	SK0838	80	125	1000	30	0	30000	
373	IOTQ88N28T	SK0842	224	125	1000	30	0	30000	
374	IOTQ88N30P	SS0939	240	125	1000	77	0	30000	
375	IOTQ96N20P	SK0836	160	125	1000	30	0	30000	
376	IOTR170P10P	SP1106	-80	125	1000	30	0	30000	
377	IOTT140P10T	SP1142	-80	125	1000	77	0	30000	
378	IOTT60N20L2	TP1005	160	125	1000	30	0	30000	
379	IOTT80N20L	TP1046	160	125	1000	30	0	30000	
380	IOTX20N140	TP1126	960	125	1000	30	0	30000	
381	IOTX210P10T	SP1130	-80	125	1000	30	0	30000	
382	IOTX24N100	SP0837	800	125	1000	30	0	30000	
383	IOTX550N055T2	SS1002	44	125	1000	30	0	30000	
384	IOTX550N055T2	SS1002	44	125	1000	30	0	30000	
385	IOTX600N04T2	SP0945	32	125	1000	30	0	30000	
386	IXXH100N60C3	TP1101	480	125	1000	30	0	30000	
387	IXXH50N60B3	SS1105	480	125	1000	30	0	30000	
388	IXXH50N60C3	SS1105	480	125	1000	30	0	30000	
389	IXXH75N60B3	TP1115	480	125	1000	30	0	30000	
390	IXYH30N120C3	TP1137	960	125	1000	30	0	30000	
391	IXYH50N120C3	TP1137	960	125	1000	30	0	30000	
392	IXYH82N120C3	TP1115	960	125	1000	30	0	30000	
393	IYYP8N90C3	TS1144	720	125	1000	30	0	30000	
394	MKE39A600LA	3038	480	125	1000	10	0	10000	

TABLE 1B: MOSFET/IGBT Module

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MID200-12A4	3326	960	125	168	10	0	1680	
2	MID200-12A4	3326	960	125	168	10	0	1680	
3	MITA15WB1200TMH	2502	960	125	1000	10	0	10000	
4	MITB15WB1200TMH	2502	960	125	1000	10	0	10000	
5	MIXA100W1200TEH	3248	960	125	1000	10	0	10000	
6	MKI450-12E9	2636	960	125	1000	6	0	6000	
7	MUBW36-12E7	2487	960	125	168	10	0	1680	
8	MUBW50-06A7	3128	1120	125	1000	8	0	8000	
9	VMM90-09F	2467	720	125	168	10	0	1680	
10	VMM90-09F	3214	720	125	168	10	0	1680	
11	VWM270-0075X2	2825	60	125	1000	10	0	10000	

TABLE 1C: Thyristor/Diode Module

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MCC26-16io1	2616	1120	125	168	10	0	1680	
2	MCC310-16	2537	1120	125	168	10	0	1680	
3	MCC312	2820	1120	125	1000	10	0	10000	
4	MCC312-16	3028	1120	125	1000	10	0	10000	
5	MCC312-16	3511	1120	125	168	10	0	1680	
6	MCC312-16io1	3099	1120	125	168	10	0	1680	
7	MCC56-16io1	3127	1120	125	168	10	0	1680	
8	MCC56-18	3129	1260	125	1000	10	0	10000	
9	MCC95-16io1	2450	1120	125	168	10	0	1680	
10	MCC95-16io1B	3276	1120	125	168	10	0	1680	
11	MCO150-16io1	3339	1120	125	168	10	0	1680	
12	MDD172	3465	1260	125	1000	10	0	10000	
13	MDD172-12	3331	1260	125	168	10	0	1680	
14	MDD312-16N1	3301	1120	125	168	10	0	1680	
15	MDD312-18N1	2959	1260	125	168	10	0	1680	
16	UGE0421AY4	2464	2240	125	168	10	0	1680	

TABLE 1D: Controller/Rectifier Bridge

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MMO230-14io7	2459	980	125	168	10	0	1680	
2	MMO74-16io6	2469	1120	125	168	20	0	3360	
3	MMO75-16io1	2457	1120	125	168	10	0	1680	
4	VUC36-16go2	3320	1120	125	168	10	0	1680	
5	VUC36-16go2	3320	1120	125	168	10	0	1680	
6	VUO 192-16NO7	2615	1260	125	1000	10	0	10000	
7	VUO155-16	3101	1120	125	168	10	0	1680	
8	VUO52	2824	1120	125	1000	20	0	20000	
9	VUO52	3118	1400	125	1000	20	0	20000	
10	VUO52-16	2563	1120	125	168	10	0	1680	
11	VUO52-16	2563	1120	125	168	10	0	1680	
12	VUO52-22	3240	1540	125	1000	20	0	20000	
13	VUO82-16NO7	3087	1120	125	168	10	0	1680	

TABLE 1E: FRED

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	DH2x60-18A	2609	1440	125	1000	10	0	10000	
2	DHG30I1200HA	2608	960	125	168	20	0	3360	
3	DHG30IM600PC	3393	480	125	1000	20	0	20000	
4	DHG50X1200NA	2624	960	125	1000	20	0	20000	
5	DPG30P300PJ	2715	240	125	1000	20	0	20000	
6	DPG60IM400QB	3280	320	125	1000	20	0	20000	
7	DSEC240-06A	2479	480	125	168	10	0	1680	
8	DSEE55-24N1F	2627	960	125	168	20	0	3360	
9	DSEE55-24N1F	2627	840	125	168	20	0	3360	
10	DSEI12-06A	2604	480	125	1000	20	0	20000	
11	DSEI12-06A	2881	480	125	168	20	0	3360	
12	DSEI2x101-12A	2509	960	125	1000	10	0	10000	
13	DSEI2x101-12A	2773	960	125	1000	10	0	10000	
14	DSEI2x101-12A	3325	960	125	1000	10	0	10000	
15	DSEI2x31-06P	3461	480	125	168	10	0	1680	
16	DSEI2x61-04C	2565	320	125	168	10	0	1680	
17	DSEI2x61-12B	3091	960	125	168	10	1	1680	
18	DSEI30-06A	2602	480	125	168	20	0	3360	
19	DSEI30-06A	2833	480	125	1000	20	0	20000	
20	DSEI30-10A	3069	800	125	168	20	0	3360	
21	DSEP15-06A	3002	480	125	1000	20	0	20000	
22	DSEP15-12CR	2600	960	125	168	20	0	3360	
23	DSEP29-12A	3183	960	125	168	20	0	3360	
24	DSEP2x31-12A	3226	960	125	168	10	0	1680	
25	DSEP30-06A	2440	480	125	168	20	0	3360	
26	DSEP30-06BR	2879	480	125	168	20	0	3360	
27	DSEP60-06A	2830	480	125	1000	40	0	40000	
28	DSEP60-06A	2974	480	125	168	20	0	3360	
29	DSEP60-12A	2672	960	125	1000	20	0	20000	
30	DSEP75-06AR	3343	480	125	168	20	0	3360	
31	MEA75-12DA	2958	960	125	168	10	1	1680	
32	MEK95-06DA	3212	480	125	168	10	0	1680	

TABLE 1F: Schottky Diode

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	DSA10C150PB	2956	150	125	1000	20	0	20000	
2	DSA50C100QB	2532	100	125	168	20	0	3360	
3	DSA50C100QB	3451	100	125	168	20	0	3360	
4	DSA60C150PB	2577	150	125	1000	20	0	20000	
5	DSA70C150HB	3350	150	125	168	20	0	3360	
6	DSA90C200HR	2622	200	125	1000	20	0	20000	
7	DSSK38-0025B	2953	20	100	1000	20	0	20000	
8	DSSK60-015A	3181	150	125	168	20	0	3360	
9	DSSK60-015AR	2478	150	125	168	20	0	3360	
10	DSSK60-015AR	2772	150	125	1000	20	0	20000	
11	DSSK60-02A	2981	200	125	168	20	0	3360	
12	DSSK70-008AR	2982	80	125	168	20	0	3360	
13	DSSK70-008AR	2982	80	125	168	20	0	3360	
14	DSSK80-0025B	3199	20	100	1000	20	0	20000	
15	DSSK80-003B	3072	24	100	1000	20	0	20000	
16	DSSK80-006B	2878	48	100	1000	20	0	20000	
17	DSSS35-008AR	3446	80	125	168	20	0	3360	

TABLE 1G: Thyristor/Diode single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	CLA30E1200PC	2657	840	125	1000	20	0	20000	
2	CS20-25MoT1	2485	2100	85	311	20	0	6220	
3	CS22-12io1M	3187	840	125	168	20	0	3360	
4	CS30-12io1	3344	840	125	168	20	0	3360	
5	CS30-16io1	2980	1120	125	168	20	0	3360	
6	CS35-14io4	3090	980	125	168	10	0	1680	
7	CS45-16io1	2438	1120	125	168	20	0	3360	
8	CS45-16io1	3180	1120	125	168	20	0	3360	
9	CS60-12io1	2581	840	125	1000	20	0	20000	
10	CS60-16io1	2960	1120	125	1000	20	0	20000	
11	CS60-16io1	2960	1120	125	1000	20	0	20000	
12	CS8-12io2	2458	1280	125	168	10	0	1680	
13	CSM401B	3377	2000	85	1000	10	0	10000	
14	DSA17-18A	2954	1260	150	168	10	0	1680	
15	DSA9-18	3337	1260	150	168	10	0	1680	
16	DSI45-16A	3443	1120	150	168	20	0	3360	
17	DSP25-12A	2876	1120	150	168	20	0	3360	
18	DSP25-16A	2601	1120	150	168	20	0	3360	
19	DSP45-16A	3068	1120	150	168	20	0	3360	

TABLE 1H: Breakover Diode

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	IXBOD1-06	3458	480	125	168	20	0	3360	
2	IXBOD1-08	3079	640	125	168	20	0	3360	
3	IXBOD1-10	2436	800	125	168	20	0	3360	
4	IXBOD2-14EPI	2905	1120	125	1000	20	0	20000	

HTGB (Tables 2A .. 2B)

TABLE 2A: MOSFET/IGBT single device									
#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	IXTQ75N10P	SK0838	16	125	1000	30	0	30000	
2	IXDR30N120D1	2541	16	150	168	10	0	1680	
3	IXBH5N160G	2983	16	150	168	20	0	3360	
4	IXBP5N160G	2454	16	150	168	20	0	3360	
5	IXDN75N120	2566	16	150	168	20	0	3360	
6	IXKH70N60C5	3361	16	150	168	20	0	3360	
7	IXKN75N60C	3094	16	150	168	20	0	3360	
8	IXKR40N60C	3360	16	150	168	20	0	3360	
9	GWM160-0055X1SL	2786	16	150	1000	10	0	10000	
10	GWM100-01X1 SL	3030	16	150	1000	20	0	20000	
11	GWM100-01X1 SL	3031	16	150	1000	20	0	20000	
12	IEA21PG1200LA	2598	16	125	1000	20	0	20000	
13	IXA40PG1200DHGLA	3211	16	150	1000	20	0	20000	
14	IXA55I1200HJ	2585	16	150	1000	20	0	20000	
15	IXA55I200HJ	2511	16	150	1000	20	0	20000	
16	IXFH26N50	SS0846	16	125	1000	30	0	30000	
17	IXFX48N50Q	SS0846	16	125	1000	30	0	30000	
18	IXGR48N60C3D1	SP0948	16	125	1000	30	0	30000	
19	IXFH150N17T	SK0841	16	125	1000	30	0	30000	
20	IXTP36N30P	SS0842	16	125	1000	30	0	30000	
21	IXFH26N50	TP0835	16	125	1000	30	0	30000	
22	IXFH15N80	TP0835	16	125	1000	30	0	30000	
23	IXFH26N50Q	SP0850	16	125	1000	30	0	30000	
24	IXFH10N100	SP0848	16	125	1000	30	0	30000	
25	IXFH30N50P	SK0842	16	125	1000	30	0	30000	
26	IXTH260N055T2	SP0830	16	125	1000	30	0	30000	
27	IXFX180N10	SK0833	16	125	1000	30	0	30000	
28	IXFH12N100	TP0848	16	125	1000	30	0	30000	
29	IXGX72N60B3H1	SS0904	16	125	1000	77	0	30000	
30	IXGX72N60B3H1	SS0904	16	125	1000	77	0	30000	
31	IXGX72N60B3H1	SS0905	16	125	1000	77	0	30000	
32	IXGH17N100	TP0907	16	125	1000	30	0	30000	
33	IXTH30N60L2	TP0835	16	125	1000	30	0	30000	
34	IXFX48N50Q	TP0849	16	125	1000	30	0	30000	
35	IXTQ40N50L2	SS0849	16	125	1000	30	0	30000	
36	IXFH20N80Q	TP0850	16	125	1000	30	0	30000	
37	IXTH15N50L2	TK0837	16	125	1000	30	0	30000	
38	IXFH15N100Q	TP0848	16	125	1000	30	0	30000	
39	IXTP260N055T2	SS908	16	125	1000	30	0	30000	
40	IXGQ150N33TCD1	SS0908	16	125	1000	30	0	30000	
41	IXTA36N30P	SS0905	16	125	1000	30	0	30000	
42	IXFH20N60	SS0905	16	125	1000	30	0	30000	
43	IXFB80N50Q2	SP0908	16	125	1000	30	0	30000	
44	IXGQ240N30PB	SS0911	16	125	1000	30	0	30000	
45	IXFH13N80	SK0727	16	125	1000	30	0	30000	
46	IXGR60N60C3C1	SP0849	16	125	1000	45	0	30000	
47	IXTX24N100	SP0837	16	125	1000	30	0	30000	
48	IXGP20N120A3	TS0905	16	125	1000	30	0	30000	
49	IXGH40N120C3D1	TK0840	16	125	1000	30	0	30000	
50	IXGH72N60B3	SS0912	16	125	1000	30	0	30000	
51	IXFH44N50P	SA0915	16	125	1000	30	0	30000	
52	IXFH30N50P	SA0915	16	125	1000	30	0	30000	
53	IXFX260N17T	SS0912	16	125	1000	30	0	30000	
54	IXFX210N17T	SS0912	16	125	1000	30	0	30000	
55	IXFX230N20T	SS0911	16	125	1000	30	0	30000	
56	IXFX180N25T	SS0908	16	125	1000	30	0	30000	
57	IXGX72N60A3H1	SP0848	16	125	1000	30	0	30000	
58	IXGH30N60C3D1	SK0840	16	125	1000	30	0	30000	
59	IXFX140N30P	SK0747	16	125	1000	30	0	30000	
60	IXFX120N30T	SP0849	16	125	1000	30	0	30000	

TABLE 2A (cont d): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
61	IXFX140N25T	SP0917	16	125	1000	30	0	30000	
62	IXFX160N30T	SP0917	16	125	1000	30	0	30000	
63	IXGR48N60C3D1	SP0916	16	125	1000	30	0	30000	
64	IXTK40P50P	SP0747	-16	125	1000	30	0	30000	
65	IXTQ100N25P	SS0846	16	125	1000	30	0	30000	
66	IXFX64N50P	SS0921	16	125	1000	30	0	30000	
67	IXFH70N15	SP0850	16	125	1000	30	0	30000	
68	IXFH110N15T2	SP0848	16	125	1000	30	0	30000	
69	IXFX120N25P	SS0922	16	125	1000	30	0	30000	
70	IXFN200N10P	SP0918	16	125	1000	30	0	30000	
71	IXFX180N25T	SP0908	16	125	1000	30	0	30000	
72	IXGH48N60B3	SP0916	16	125	1000	30	0	30000	
73	IXGQ240N30PB	SS0920	16	125	1000	30	0	30000	
74	IXFR4N100Q	TP0920	16	125	1000	30	0	30000	
75	IXTP2N100	SS0914	16	125	1000	30	0	30000	
76	IXFB38N100Q2	TP0924	16	125	1000	30	0	30000	
77	IXGH56N60B3D1	TK0838	16	125	1000	30	0	30000	
78	IXTA2N100	K815	16	125	1000	30	0	30000	
79	IXFV30N60PS	SF0929	16	125	1000	30	0	30000	
80	IXFP4N100QM	T0919	16	125	1000	30	0	30000	
81	IXF36N60P	SP0928	16	125	1000	30	0	30000	
82	IXFH40N30Q	TP0916	16	125	1000	30	0	30000	
83	IXTH250N075T	SP0801	16	125	1000	30	0	30000	
84	IXFB44N100P	TP0930	16	125	1000	30	0	30000	
85	IXFB170N30P	SP0842	16	125	1000	30	0	30000	
86	IXFH12N90	SS0911	16	125	1000	30	0	30000	
87	IXTH75N10	TP0848	16	125	1000	30	0	30000	
88	IXFP7N100P	SS0931	16	125	1000	30	0	30000	
89	IXFB82N60P	SP0851	16	125	1000	30	0	30000	
90	IXFB82N60P	SP0851	16	125	1000	30	0	30000	
91	IXTA2N100P	K736	16	125	1000	30	0	30000	
92	IXTP22N50PM	SS0924	16	125	1000	30	0	30000	
93	IXFB38N100Q2	TP0933	16	125	1000	30	0	30000	
94	IXFB40N110P	SP0924	16	125	1000	30	0	30000	
95	IXFP7N100P	SS0933	16	125	1000	30	0	30000	
96	IXFK26N90	SP0936	16	125	1000	30	0	30000	
97	IXTP100N04T2	SS0917	16	125	1000	30	0	30000	
98	IXFX90N20Q	TP0849	16	125	1000	30	0	30000	
99	IXFH66N20Q	TP0917	16	125	1000	30	0	30000	
100	IXTP220N04T2	SS0927	16	125	1000	30	0	30000	
101	IXFP76N15T2	SS0920	16	125	1000	30	0	30000	
102	IXFX240N15T2	SS0931	16	125	1000	30	0	30000	
103	IXGH30N120B3	TP0806	16	125	1000	30	0	30000	
104	IXTQ130N15T	SK0715	16	125	1000	30	0	30000	
105	IXFX64N50P	SP0942	16	125	1000	30	0	30000	
106	IXTQ88N28T	SK0842	16	125	1000	30	0	30000	
107	IXGH8N100	TP0944	16	125	1000	30	0	30000	
108	IXGH8N100	TP0944	16	125	1000	30	0	30000	
109	IXGH8N100	TP0944	16	125	1000	30	0	30000	
110	IXTH05N100	TP0943	16	125	1000	30	0	30000	
111	IXFX48N50Q	SF0938	16	125	1000	30	0	30000	
112	IXFH6N120P	TP0937	16	125	1000	30	0	30000	
113	IXFH12N100Q	TP1043	16	125	1000	30	0	30000	
114	IXFH74N20P	SS1039	16	125	1000	30	0	30000	
115	IXTH96N20P	SS0938	16	125	1000	30	0	30000	
116	IXTH96P085T	SP0926	16	125	1000	30	0	30000	
117	IXFX360N10T	SP0931	16	125	1000	30	0	30000	
118	IXTX600N04T2	SP0945	16	125	1000	30	0	30000	
119	IXTH260N055T2	SS0937	16	125	1000	30	0	30000	
120	IXFH75N10Q	TP0917	16	125	1000	30	0	30000	
121	IXGH20N100	TP0924	16	125	1000	30	0	30000	
122	IXTQ88N30P	SS0939	16	125	1000	77	0	30000	

TABLE 2A (cont d): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
123	IXFX73N30Q	SF0938	16	125	1000	30	0	30000	
124	IXFX120N25P	SF0942	16	125	1000	30	0	30000	
125	IXFH230N075T2	SP0928	16	125	1000	30	0	30000	
126	IXTH500N04T2	SP0945	16	125	1000	30	0	30000	
127	IXTH440N055T2	SP0948	16	125	1000	30	0	30000	
128	IXFH400N075T2	SP0948	16	125	1000	30	0	30000	
129	IXFN26N90	SF0942	16	125	1000	30	0	30000	
130	IXGR48N60C3D1	SP0948	16	125	1000	30	0	30000	
131	IXGR48N60C3D1	SP0931	16	125	1000	30	0	30000	
132	IXGH25N160	SP1001	16	125	1000	30	0	30000	
133	IXGR72N60C3D1	SP0952	16	125	1000	30	0	30000	
134	IXGH60N60C3D1	SS0931	16	125	1000	30	0	30000	
135	IXGH30N60B2	SP1003	16	125	1000	30	0	30000	
136	IXFX220N17T2	SP0931	16	125	1000	30	0	30000	
137	IXFH160N15T2	SS0926	16	125	1000	30	0	30000	
138	IXFH150N17T2	SS0952	16	125	1000	30	0	30000	
139	IXTP182N055T	SS1003	16	125	1000	30	0	30000	
140	IXTH50P10	TP1002	16	125	1000	30	0	30000	
141	IXTH24P20	TP1003	16	125	1000	30	0	30000	
142	IXTQ48N20T	SS1004	16	125	1000	30	0	30000	
143	IXTQ96N20P	SK0836	16	125	1000	30	0	30000	
144	IXFR140N30P	SS1001	16	125	1000	30	0	30000	
145	IXTP80N12T2	SS1009	16	125	1000	30	0	30000	
146	IXFX180N07	SP1005	16	125	1000	30	0	30000	
147	IXFH58N20	TK0849	16	125	1000	30	0	30000	
148	IXTH21N50	SS1008	16	125	1000	30	0	30000	
149	IXGH24N60C4D1	SS1006	16	125	1000	30	0	30000	
150	IXFC26N50	SF0938	16	125	1000	30	0	30000	
151	IXFX44N55Q	SP0944	16	125	1000	30	0	30000	
152	IXFX44N80P	SF1006	16	125	1000	30	0	30000	
153	IXFN80N50	SF0836	16	125	1000	30	0	30000	
154	IXFN26N90	SF1006	16	125	1000	30	0	30000	
155	IXGT60N60B2	SP0826	16	125	1000	30	0	30000	
156	IXFH26N50P	SK0843	16	125	1000	30	0	30000	
157	IXFH52N50P2	SP1010	16	125	1000	30	0	30000	
158	IXFH42N50P2	SP1009	16	125	1000	30	0	30000	
159	IXFB120N50P2	SP1015	16	125	1000	30	0	30000	
160	IXFH150N17T	SS1014	16	125	1000	30	0	30000	
161	IXFH150N17T	SS1014	16	125	1000	30	0	30000	
162	IXFH150N17T	SS1020	16	125	1000	30	0	30000	
163	IXGH25N160	TP1016	16	125	1000	30	0	30000	
164	IXFH150N17T	SP1021	16	125	1000	30	0	30000	
165	IXFB40N110P	TP1026	16	125	1000	30	0	30000	
166	IXFH88N30P	SP1009	16	125	1000	77	0	30000	
167	IXFH40N30Q	TP0916	16	125	1000	30	0	30000	
168	IXGH48N60C3	SS1006	16	125	1000	30	0	30000	
169	IXTP60N10T	S1038	16	125	1000	30	0	30000	
170	IXFK26N120P	TP1037	16	125	1000	30	0	30000	
171	IXTH48P20P	S1040	-16	125	1000	30	0	30000	
172	IXTA2R4N120P	TP0829	16	125	1000	30	0	30000	
173	IXTP10P15T	SS1038	-16	125	1000	30	0	30000	
174	IXTP15P15T	SS1036	-16	125	1000	30	0	30000	
175	IXTH32P20T	SP1035	-16	125	1000	30	0	30000	
176	IXTP48P05T	SS1040	-16	125	1000	30	0	30000	
177	IXTP26P10T	SS1040	-16	125	1000	30	0	30000	
178	IXFN21N100Q	SF1040	16	125	1000	30	0	30000	
179	IXTH50P10	SS1033	-16	125	1000	30	0	30000	
180	IXTQ22N60P	SK1040	16	125	1000	30	0	30000	
181	IXTH48P20P	SS1050	-16	125	1000	30	0	30000	
182	IXSN55N120AU1	TP1017	16	125	1000	30	0	30000	
183	IXBX75N170	TP1031	16	125	1000	30	0	30000	

TABLE 2A (cont d): MOSFET/GBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
184	IXFX26N120P	TP1102	16	125	1000	30	0	30000	
185	IXFK26N120P	TP1102	16	125	1000	30	0	30000	
186	IXXH100N60C3	TP1101	16	125	1000	30	0	30000	
187	IXTQ36N30P	SS1029	16	125	1000	30	0	30000	
188	IXFH12N100F	SS1104	16	125	1000	30	0	30000	
189	IXTA1N100	TS1047	16	125	1000	30	0	30000	
190	IXTQ110N10P	SS1045	16	125	1000	30	0	30000	
191	IXTQ170N10P	SS1041	16	125	1000	30	0	30000	
192	IXTQ22N60P	ss1104	16	125	1000	30	0	30000	
193	IXFH15N60	SS1104	16	125	1000	30	0	30000	
194	IXTP3N50P	SS1048	16	125	1000	30	0	30000	
195	IXTP8N50P	SS1050	16	125	1000	30	0	30000	
196	IXFK94N50P2	SP1051	16	125	1000	30	0	30000	
197	IXTP450P2	SS1047	16	125	1000	30	0	30000	
198	IXTP80N12T2	SS1043	16	125	1000	30	0	30000	
199	IXFH12N80P	SS1051	16	125	1000	30	0	30000	
200	IXTA62N15P	SS1047	16	125	1000	30	0	30000	
201	IXTP32N20T	SS1051	16	125	1000	30	0	30000	
202	IXFH100N25P	SS1049	16	125	1000	30	0	30000	
203	IXGH24N170A	TP0917	16	125	1000	30	0	30000	
204	IXTP120P065T	SS1013	-16	125	1000	30	0	30000	
205	IXFN170N30P	SP1045	16	125	1000	30	0	30000	
206	IXTP220N04T2	SS1051	16	125	1000	30	0	30000	
207	IXTH48P20P	SS1105	-16	125	1000	30	0	30000	
208	IXTH48P20P	SP1049	-16	125	1000	30	0	30000	
209	IXFK230N20T	SP1106	16	125	1000	30	0	30000	
210	IXFX98N50P3	SP1110	24	125	1000	30	0	30000	
211	IXTH76P10T	SS1052	-16	125	1000	30	0	30000	
212	IXFH12N100F	SS1052	16	125	1000	30	0	30000	
213	IXFH12N100F	SS1052	16	125	1000	30	0	30000	
214	IXXH50N60C3	SS1105	16	125	1000	30	0	30000	
215	IXFN44N60	SP1103	16	125	1000	30	0	30000	
216	IXXH50N60B3	SS1105	16	125	1000	30	0	30000	
217	IXGH50N60C4	SS1052	16	125	1000	30	0	30000	
218	IXFH40N30Q	SS1020	16	125	1000	30	0	30000	
219	IXGK75N250	TP1110	16	125	1000	30	0	30000	
220	IXGH2N250	TP1010	16	125	1000	30	0	30000	
221	IXFA4N100Q	TS1108	16	125	1000	30	0	30000	
222	IXFK420N10T	SP1046	16	125	1000	30	0	30000	
223	IXFX80N50Q3	SP1106	24	125	1000	30	0	30000	
224	IXFX78N50P3	SP1109	24	125	1000	30	0	30000	
225	IXTR170P10P	SP1106	-16	125	1000	30	0	30000	
226	IXFH50N60P3	SP1109	24	125	1000	30	0	30000	
227	IXFX80N60P3	SP1109	24	125	1000	30	0	30000	
228	IXFH60N50P3	SP1109	24	125	1000	30	0	30000	
229	IXFX64N60P3	SP1110	24	125	1000	30	0	30000	
230	IXFT14N80P	SP0731	16	125	1000	30	0	30000	
231	IXTT16N20D2	TP1019	16	125	1000	30	0	30000	
232	IXFH42N60P3	SP1110	24	125	1000	30	0	30000	
233	IXTT80N20L	TP1046	16	125	1000	30	0	30000	
234	IXFH22N60P3	SS1108	24	125	1000	30	0	30000	
235	IXFB38N100Q2	TP1115	16	125	1000	30	0	30000	
236	IXFB44N100Q3	SP1106	24	125	1000	30	0	30000	
237	IXFB100N50Q3	SP1106	24	125	1000	30	0	30000	
238	IXFB110N60P3	SP1110	24	125	1000	30	0	30000	
239	IXTM21N50	SP1023	16	125	1000	30	0	30000	
240	IXTT60N20L2	TP1005	16	125	1000	30	0	30000	
241	IXTA3N120	TS1115	16	125	1000	30	0	30000	
242	IXFK230N20T	SP1106	16	125	1000	30	0	30000	
243	IXFH50N30Q3	SP1117	16	125	1000	30	0	30000	
244	IXFB132N50P3	SP1110	24	125	1000	30	0	30000	
245	IXFH28N60P3	SS1105	24	125	1000	30	0	30000	

TABLE 2A (cont d): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
246	IXFH70N20Q3	SS1117	16	125	1000	30	0	30000	
247	IXTP102N15T	K834	16	125	1000	30	0	30000	
248	IXFK94N50P2	SP1111	30	125	1000	77	0	30000	
249	IXYH82N120C3	TP1115	16	125	1000	30	0	30000	
250	IXFH30N50Q3	SS1117	16	125	1000	30	0	30000	
251	IXTH12N140	TP1119	16	125	1000	30	0	30000	
252	IXFX64N50Q3	SP1118	24	125	1000	30	0	30000	
253	IXFB62N80Q3	SP1118	24	125	1000	30	0	30000	
254	IXFB82N60Q3	SP1118	24	125	1000	30	0	30000	
255	IXFR66N50Q2	TP1122	24	125	1000	30	0	30000	
256	IXGK75N250	TP1047	16	85	1000	77	0	30000	
257	IXFX48N60Q3	SS1118	24	125	1000	30	0	30000	
258	IXFX64N60Q3	SS1118	24	125	1000	30	0	30000	
259	IXFH15N100Q3	SP1121	24	125	1000	30	0	30000	
260	IXFX44N80Q3	SP1123	24	125	1000	30	0	30000	
261	IXFX32N80Q3	SS1122	24	125	1000	30	0	30000	
262	IXFH20N80P	SS1121	24	125	1000	30	0	30000	
263	IXFK38N80Q2	TP1105	24	125	1000	30	0	30000	
264	IXGT32N120A3	TP1121	16	125	1000	30	0	30000	
265	IXBX64N250	TP1130	16	125	1000	30	0	30000	
266	IXTH68P20T	SP1130	-12	125	1000	30	0	30000	
267	IXTH140P10T	SP1130	-12	125	1000	30	0	30000	
268	IXTX20N140	TP1126	24	125	1000	30	0	30000	
269	IXFR32N100Q3	SP1133	16	125	1000	30	0	30000	
270	IXFH44N50Q3	SP1133	24	125	1000	30	0	30000	
271	IXFH70N30Q3	SP1133	24	125	1000	30	0	30000	
272	IXFH120N25T	SS1115	16	125	1000	30	0	30000	
273	IXFH94N30T	SS1115	16	125	1000	30	0	30000	
274	IXYH50N120C3	TP1137	16	125	1000	30	0	30000	
275	IXYH30N120C3	TP1137	16	125	1000	30	0	30000	
276	IXFX32N90P	TS1122	24	125	1000	30	0	30000	
277	IXTH1N80P	TP0905	16	125	1000	30	0	30000	
278	IXTP1N80P	SS0908	16	125	1000	30	0	30000	
279	IXFX24N100Q3	SP1137	24	125	1000	30	0	30000	
280	IXFH18N100Q3	SP1136	24	125	1000	30	0	30000	
281	IXFH120N25T	SP1141	16	125	1000	77	0	30000	
282	IXFH94N30T	SP1141	16	125	1000	77	0	30000	
283	IXYP8N90C3	TS1144	16	125	1000	30	0	30000	
284	IXA551200HJ	2511	20	150	1000	32	0	32000	
285	IXFX120N25P	2746	20	150	1000	80	0	80000	
286	IXFX64N50P	2924	20	150	1000	80	0	80000	

TABLE 2B: MOSFET/IGBT Module

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MID200-12A4	3328	16	125	168	10	0	1680	
2	MII300-12E4	2432	16	125	168	10	0	1680	
3	MIXA20W1200MC	3089	16	125	168	10	0	1680	
4	MKI450-12E9	2636	16	125	1000	6	0	6000	
5	MUBW20-06A6K	3007	16	125	168	10	0	1680	
6	MWI452-17E9	2904	16	125	1000	10	0	10000	
7	VMM90-09F	3217	16	125	168	10	0	1680	
8	VMO1200-01	2480	16	125	168	10	0	1680	
9	VUB145-16NOXT	3281	16	125	168	10	0	1680	
10	VUM33-06PH	3302	16	125	168	10	0	1680	
11	VVZB170-16IOXT	3282	16	125	168	10	0	1680	
12	VWI20-06P1	2462	16	125	168	10	0	1680	
13	VWM270-0075X2	2825	16	125	1000	10	0	10000	

POWER CYCLE (Tables 3A ..3G)

TABLE 3A: MOSFET/IGBT single device									
#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	IXBH40N160	3243	125	80	2000	20	0	40000	
2	IXBH9N160G	3357	125	80	2000	20	0	40000	
3	IXKH35N60C5	3160	125	80	2000	20	0	40000	
4	IXKR47N60C5	3188	145	100	2000	20	0	40000	
5	IXA20PG1200DHGLA	3211	125	80	8000	10	0	80000	
6	IXGX72N60B3H1	SP0809		125	3000	77	0	231000	
7	IXFX48N50Q	SS0846		100	10000	24	0	240000	
8	IXFK26N90	SP0936		100	10000	24	0	240000	
9	IXFB80N50Q2	SP0908		100	10000	24	0	240000	
10	IXGH72N60B3	SS0912		100	10000	24	0	240000	
11	IXGX72N60A3H1	SP0848		100	10000	24	0	240000	
12	IXGR48N60C3D1	SP0916		100	10000	24	0	240000	
13	IXFX64N50P	TP0907		100	10000	24	0	240000	
14	IXFX210N17T	SS0912		100	10000	24	0	240000	
15	IXGH32N170	TP0907		100	10000	24	0	240000	
16	IXGQ240N30PB	SS0912		100	10000	24	0	240000	
17	IXFT36N60P	SF0929		100	10000	24	0	240000	
18	IXTA2N100P	K736		100	10000	24	0	240000	
19	IXTP220N04T2	SS0927		100	10000	24	0	240000	
20	IXTP2N100	SS0914		100	10000	24	0	240000	
21	IXFP7N100P	SP0924		100	10000	24	0	240000	
22	IXFK140N30P	SP0940		100	10000	24	0	240000	
23	IXFX240N15T2	SS0920		100	10000	24	0	240000	
24	IXGH24N60C4D1	SS1006		100	10000	24	0	240000	
25	IXFC26N50	SF0938		100	10000	24	0	240000	
26	IXFB38N100Q2	TP0933		100	10000	24	0	240000	
27	IXFX64N50P	SP0942		100	10000	24	0	240000	
28	IXFB40N110P	SP0924		100	10000	24	0	240000	
29	IXFB40N110P	TP1026		100	10000	24	0	240000	
30	IXTP60N10T	S1038		100	10000	24	0	240000	
31	IXFH12N100Q	TP1043		100	10000	24	0	240000	
32	IXTH32P20T	SP1035		100	10000	24	0	240000	
33	IXTH48P20P	SP0931		100	10000	24	0	240000	
34	IXTH96N20P	SS0938		100	10000	24	0	240000	
35	IXTH48P20P	SS1050		100	10000	24	0	240000	
36	IXTQ22N60P	SK1040		100	10000	24	0	240000	
37	IXBX75N170	TP1031		100	10000	24	0	240000	
38	IXTH50P10	SS1033		100	10000	24	0	240000	
39	IXFK26N120P	TP1102		100	10000	24	0	240000	
40	IXTP120P065T	SS1013		100	10000	24	0	240000	
41	IXTH76P10T	SS1052		100	10000	24	0	240000	
42	IXFK230N20T	SP1106		100	10000	24	0	240000	
43	IXTR170P10P	SP1106		100	10000	24	0	240000	
44	IXGH30N120B3	SS0920		100	10000	24	0	240000	
45	IXFB110N60P3	SP1110		100	10000	24	0	240000	
46	IXFK94N50P2	SP1051		100	10000	24	0	240000	

TABLE 3A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
47	IXFH42N60P3	SP1110		100	10000	24	0	240000	
48	IXFH12N100F	SS1052		100	10000	24	0	240000	
49	IXFH50N30Q3	SP1117		100	10000	24	0	240000	
50	IXFH50N60P3	SP1109		100	10000	24	0	240000	
51	IXTM21N50	SP1023		100	10000	24	0	240000	
52	IXTA3N120	TS1115		100	10000	24	0	240000	
53	IXFA4N100Q	TS1108		100	10000	24	0	240000	
54	IXFR66N50Q2	TP1122		100	10000	24	0	240000	
55	IXFX64N50Q3	SP1118		100	10000	24	0	240000	
56	IXTT80N20L	TP1046		100	10000	24	0	240000	
57	IXFB170N30P	SP0842		100	10000	24	0	240000	
58	IXBX64N250	TP0952		100	10000	24	0	240000	
59	IXFK420N10T	SP1046		100	10000	24	0	240000	
60	IXGK75N250	TP1046		100	10000	24	0	240000	
61	IXBX64N250	TP1130		100	10000	24	0	240000	
62	IXFB44N100Q3	SP1106		100	10000	24	0	240000	
63	IXTT16N20D2	TP1019		100	10000	24	0	240000	
64	IXFX44N80Q3	SP1123		100	10000	24	0	240000	
65	IXGT32N120A3	TP1121		100	10000	24	0	240000	
66	IXTH140P10T	SP1130		100	10000	24	0	240000	
67	IXTH68P20T	SP1130		100	10000	24	0	240000	
68	IXTH96P085T	SP0926		100	10000	24	0	240000	
69	IXFH40N30Q	SS1020		100	10000	24	0	240000	
70	IXGH2N250	TP1010		100	10000	24	0	240000	
71	IXFH28N60P3	SS1115		100	10000	24	0	240000	
72	IXTP26P10T	SS1040		100	10000	24	0	240000	
73	IXTP10P15T	SS1038		100	10000	24	0	240000	
74	IXFH120N25T	SS1115		100	10000	24	0	240000	
75	IXTP1N80P	SS0908		100	10000	24	0	240000	
76	IXYH30N120C3	TP1137		100	10000	24	0	240000	
77	IXFH94N30T	SS1115		100	10000	24	0	240000	
78	IXFH52N50P2	SP1010		100	10000	24	0	240000	
79	IXXH100N60C3	TP1101		100	10000	24	0	240000	
80	IXFH40N30Q	TP0916		100	10000	24	0	240000	
81	IXTX20N140	TP1126		100	10000	24	0	240000	
82	IXFX48N50Q	SF0938		100	10000	24	0	240000	
83	IXGH50N60C4	SP1133		100	10000	24	0	240000	
84	IXFX120N25P	2746	150	100	6000	80	0	480000	
85	IXFH88N30P	SP1009		100	10000	77	0	770000	
86	IXFH120N25T	SP1141		100	10000	77	0	770000	
87	IXTT140P10T	SP1142		100	10000	77	0	770000	
88	IXFK94N50P2	SP1111		100	15000	77	0	1155000	
89	IEA21PG1200LA	2598	125	80	80000	20	0	1600000	

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MIXA60WB1200TEH	2513	125	80	20000	10	0	200000	
2	MKI450-12E9	2636	125	80	20000	6	0	120000	
3	MKI65A7T	2728	125	80	20000	10	0	200000	
4	VWM270-0075X2	2825	125	80	10000	10	0	100000	

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MCC162-14io1	2555	125	80	10000	10	0	100000	
2	MCC44-16io1B	2989	125	80	10000	10	0	100000	
3	MDD172-16	3202	125	80	10000	10	0	100000	
4	MDD26-16	3205	125	80	10000	10	0	100000	
5	MDD95-16	3330	125	80	10000	10	0	100000	

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	VUO 192-16NO7	2615	125	80	5000	10	0	50000	
2	VUO52-16NO1	3001	125	80	5000	10	0	50000	
3	VUO52-16NO1	3234	125	80	5000	10	0	50000	
4	VUO82-16NO7	3463	125	80	2000	10	0	20000	
5	VVZ40-14	3103	125	80	5000	10	0	50000	

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	DPG15I300PA	3354	145	100	2000	20	0	40000	
2	DPG30P300PJ	2715	145	100	4000	20	0	80000	
3	DPG60C300HB	2477	145	100	2000	20	0	40000	
4	DSEI12-06A	2604	145	100	4000	20	0	80000	
5	DSEI12-06A	2875	145	100	2000	20	0	40000	
6	DSEI2x121-02A	3093	125	80	2000	10	0	20000	
7	DSEI30-06A	2833	145	100	4000	20	0	80000	
8	DSEK60-02A	3448	145	100	2000	20	0	40000	
9	DSEP15-06A	3002	145	100	4000	20	0	80000	
10	DSEP15-12CR	2883	145	100	2000	20	0	40000	
11	DSEP30-06BR	2984	145	100	2000	20	0	40000	
12	DSEP60-06A	3071	145	100	2000	20	0	40000	
13	DSEP60-12A	3179	145	100	2000	20	0	40000	
14	DSEP60-12AR	3444	145	100	2000	20	0	40000	
15	MEE300-06	2992	125	80	5000	10	0	50000	

TABLE 3F: Schottky Diode

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	DSA70C150HB	2985	145	100	2000	20	0	40000	
2	DSA90C200HR	2993	145	100	4000	20	0	80000	
3	DSA90C200HR	2993	145	100	40000	20	0	800000	
4	DSSK30-018A	3074	145	100	2000	20	0	40000	
5	DSSK40-008B	3450	145	100	2000	20	0	40000	
6	DSSK50-01A	3349	145	100	2000	20	0	40000	
9	DSSK60-015A	2947	145	100	2000	20	0	40000	

TABLE 3G: Thyristor/Diode single device

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	CLA30E1200PC	2657	125	80	4000	20	0	80000	
2	CLA80E1200HF	2670	125	80	4000	10	0	40000	
3	CLA80E1200HF	2670	125	80	4000	10	0	40000	
4	CS20-12io1	2957	125	80	2000	20	0	40000	
5	CS30-16io1	2986	125	80	2000	20	0	40000	
6	CS35-14io4	3090	125	80	2000	10	0	20000	
7	CS45-12io1	3162	125	80	2000	20	0	40000	
8	DSA1-16D	2471	150	100	2000	20	0	40000	
9	DSA1-18D	3200	150	100	2000	20	0	40000	
10	DSA17-18A	2954	130	100	2000	10	0	20000	
11	DSA30I150PA	3185	145	100	2000	20	0	40000	
12	DSA9-18F	3338	115	85	2000	10	0	20000	
13	DSI2x55-16A	3340	125	80	5000	10	0	50000	
14	DSI30-12A	3490	145	100	2000	20	0	40000	
15	DSI45-12A	3227	145	100	2000	20	0	40000	
16	DSI45-16AR	3348	145	100	2000	20	0	40000	
17	DSP25-12A	3355	145	100	2000	20	0	40000	

TEMPERATURE CYCLE (Tables 4A ..4H)

TABLE 4A: MOSFET/IGBT single device									
#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	IXFB80N50Q2	SP0908	-55	125	10	30	0	300	
2	IXGH40N120C3D1	TK0840	-55	125	10	30	0	300	
3	IXTQ40N50L2	SS0849	-55	125	10	77	0	770	
4	IXTH15N50L2	TK0837	-55	125	10	77	0	770	
5	IXTP260N055T2	SJ136F	-55	125	10	77	0	770	
6	IXFH15N100Q	TP0848	-55	125	10	77	0	770	
7	IXFH20N80Q	TP0850	-55	125	10	77	0	770	
8	IXFX48N50Q	TP0849	-55	125	10	77	0	770	
9	IXTA36N30P	SS0905	-55	125	10	77	0	770	
10	IXGQ150N33TCD1	SS0908	-55	125	10	77	0	770	
11	IXFH20N60	SS0905	-55	125	10	77	0	770	
12	IEA21/36PG1200	3041	-55	150	50	20	0	1000	
13	IXBH40N160	3497	-55	150	50	20	0	1000	
14	IXBH40N160	3242	-55	150	50	20	0	1000	
15	IXBH5N160G	3076	-55	150	50	20	0	1000	
16	IXBH9N160G	2446	-55	150	50	20	0	1000	
17	IXBH9N160G	2952	-55	150	50	20	0	1000	
18	IXDR30N120D1	2442	-55	150	50	20	0	1000	
19	IXEH25N120D1	2542	-55	150	50	20	0	1000	
20	IXKH70N60C5	3358	-55	150	50	20	0	1000	
21	IXKR47N60C5	2979	-55	150	50	20	0	1000	
22	IXFB40N110P	TP1129	-55	125	50	30	0	1500	
23	FDM47-06KC5	2642	-55	150	100	20	0	2000	
24	IXA27F1200HJ	3376	-55	150	100	20	0	2000	
25	IXA60IF1200NA	2613	-55	150	100	20	0	2000	
26	IXLV1861	3061	-40	150	100	20	0	2000	
27	IXRH25N120	2500	-55	150	100	20	0	2000	
28	IXBH9N160G	TP0920	-55	125	250	10	0	2500	
29	IXFB38N100Q2	TP0914	-55	125	250	10	0	2500	
30	IXTP100N04T2	SS0917	-55	125	250	10	0	2500	
31	IXGH72N60B3	SS0912	-55	125	100	30	0	3000	
32	IXGQ240N30PB	SS0911	-55	125	100	30	0	3000	
33	IXGH40N120C3D1	TK0840	-55	125	100	30	0	3000	
34	IXTX8N150L	TP0912	-55	125	100	30	0	3000	
35	IXSN55N120AU1	TP1017	-55	125	100	30	0	3000	
36	IXFK38N80Q2	TP1105	-55	125	100	30	0	3000	
37	IXBX64N250	TP1130	-55	125	100	30	0	3000	
38	IXBH40N160	2761	-55	150	100	40	0	4000	
39	IXFR90N30	SP1017	-55	125	192	30	0	5760	
40	IXA60IF1200NA	2710	-55	150	300	20	0	6000	
41	IXGR60N60C3C1	SP0849	-55	125	250	30	0	7500	
42	IXGH56N60B3D1	TK0838	-55	125	250	30	0	7500	
43	IXGH60N60C3D1	SS0931	-55	125	250	30	0	7500	
44	IXFH52N50P2	SP1010	-55	125	250	30	0	7500	
45	IXXH100N60C3	TP1101	-55	125	250	30	0	7500	
46	IXTQ110N10P	SS1045	-55	125	250	30	0	7500	
47	IXTR170P10P	SP1106	-55	125	250	30	0	7500	
48	IXXH50N60B3	SS1105	-55	125	250	30	0	7500	
49	IXFK420N10T	SP1046	-55	125	250	30	0	7500	
50	IXGH2N250	TP1010	-55	125	250	30	0	7500	
51	IXFK64N50P	SP0916	-55	125	1000	10	0	10000	
52	IXFK120N25P	SP0824	-55	125	1000	10	0	10000	
53	IXFX120N25P	SP0847	-55	125	1000	10	0	10000	
54	IXFX120N30T	SP0847	-55	125	1000	10	0	10000	
55	IXFX210N17T	SS0912	-55	125	1000	10	0	10000	
56	IXFX140N25T	SP0917	-55	125	1000	10	0	10000	

TABLE 4A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
57	IXFX210N17T	SS0912	-55	125	1000	10	0	10000	
58	IXFX64N50P	SS0921	-55	125	1000	10	0	10000	
59	IXFH44N50P	SA0915	-55	125	1000	10	0	10000	
60	IXFH30N50P	SA0915	-55	125	1000	10	0	10000	
61	IXFX160N30T	SP0917	-55	125	1000	10	0	10000	
62	IXFX260N17T	SS0912	-55	125	1000	10	0	10000	
63	IXGH30N60C3D1	SK0840	-55	125	1000	10	0	10000	
64	IXFX140N30P	SK0747	-55	125	1000	10	0	10000	
65	IXGR48N60C3D1	SP0916	-55	125	1000	10	0	10000	
66	IXTK40P50P	SP0747	-55	125	1000	10	0	10000	
67	IXFB170N30P	SP0842	-55	125	1000	10	0	10000	
68	IXFH66N20Q	TP0917	-55	125	1000	10	0	10000	
69	IXTH75N10	TP0848	-55	125	1000	10	0	10000	
70	IXGH24N170A	TP0917	-55	125	1000	10	0	10000	
71	IXA20SV1200DHGLA	3211	-40	150	1000	10	0	10000	
72	IXA40PG1200DHGLA	3211	-40	150	1000	10	0	10000	
73	IXFN44N50Q	TP0919	-55	125	500	30	0	15000	
74	IXTQ170N10P	SS1041	-55	125	500	30	0	15000	
75	IXFN170N30P	SP1045	-55	125	500	30	0	15000	
76	IXTA62N15P	SS1047	-55	125	500	30	0	15000	
77	IXFB110N60P3	SP1110	-55	125	500	30	0	15000	
78	IXGH50N60C4	SS1052	-55	125	500	30	0	15000	
79	IEA21PG1200LA	2598	-40	150	1000	20	0	20000	
80	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
81	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
82	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
83	IXFX21N100Q	SS0922	-55	125	1000	30	0	30000	
84	IXFX21N100Q	SS0922	-55	125	1000	30	0	30000	
85	IXGQ240N30PB	SS0920	-55	125	1000	30	0	30000	
86	IXGP20N120A3	TS0905	-55	125	1000	30	0	30000	
87	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
88	IXFX21N100Q	SS0922	-55	125	1000	30	0	30000	
89	IXTP2N100	SS0914	-55	125	1000	30	0	30000	
90	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
91	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
92	IXTH3N120	SS0922	-55	125	1000	30	0	30000	
93	IXTQ100N25P	SS0846	-55	125	1000	30	0	30000	
94	IXFX21N100Q	SS0922	-55	125	1000	30	0	30000	
95	IXFX21N100Q	SS0922	-55	125	1000	30	0	30000	
96	IXFN200N10P	SS0918	-55	125	1000	30	0	30000	
97	IXFX180N25T	SP0908	-55	125	1000	30	0	30000	
98	IXFX180N10	SF0928	-55	125	1000	30	0	30000	
99	IXFH70N15	SP0850	-55	125	1000	30	0	30000	
100	IXFH110N15T2	SP0848	-55	125	1000	30	0	30000	
101	IXFV30N60PS	SF0929	-55	125	1000	30	0	30000	
102	IXFP4N100QM	TP0919	-55	125	1000	30	0	30000	
103	IXFX21N100Q	SS0930	-55	125	1000	30	0	30000	
104	IXFX21N100Q	SS0930	-55	125	1000	30	0	30000	
105	IXFX21N100Q	SS0930	-55	125	1000	30	0	30000	
106	IXTP3N120	SS0930	-55	125	1000	30	0	30000	
107	IXTP3N120	SS0930	-55	125	1000	30	0	30000	
108	IXTP3N120	SS0930	-55	125	1000	30	0	30000	
109	IXFT36N60P	SF0928	-55	125	1000	30	0	30000	
110	IXFB44N100P	TP0930	-55	125	1000	30	0	30000	
111	IXTH250N075T	SP0801	-55	125	1000	30	0	30000	
112	IXTX24N100	SP0837	-55	125	1000	30	0	30000	
113	IXGH48N60B3	SP0916	-55	125	1000	30	0	30000	

TABLE 4A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
114	IXTA2N100	K815	-55	125	1000	30	0	30000	
115	IXTH360N055T2	SP0926	-55	125	1000	30	0	30000	
116	IXTH360N055T2	SS0926	-55	125	1000	30	0	30000	
117	IXFB100N50P	SP0929	-55	125	1000	30	0	30000	
118	IXTP22N50PM	SS0924	-55	125	1000	30	0	30000	
119	IXGH32N170	TP0907	-55	125	1000	30	0	30000	
120	IXFH12N90	SS0911	-55	125	1000	30	0	30000	
121	IXFP7N100P	SS0931	-55	125	1000	30	0	30000	
122	IXTA2N100P	K736	-55	125	1000	30	0	30000	
123	IXFB38N100Q2	TP0933	-55	125	1000	30	0	30000	
124	IXFB40N110P	SP0924	-55	125	1000	30	0	30000	
125	IXFK26N90	SP0936	-55	125	1000	30	0	30000	
126	IXFP7N100P	SS0933	-55	125	1000	30	0	30000	
127	IXFX420N10T	SP0931	-55	125	1000	30	0	30000	
128	IXFX320N17T2	SP0931	-55	125	1000	30	0	30000	
129	IXTP220N04T2	SS0927	-55	125	1000	30	0	30000	
130	IXFP76N15T2	SS0920	-55	125	1000	30	0	30000	
131	IXTP200N055T2	SS0847	-55	125	1000	30	0	30000	
132	IXFX240N15T2	SS0931	-55	125	1000	30	0	30000	
133	IXGH30N120B3	TP0806	-55	125	1000	30	0	30000	
134	IXTQ130N15T	TP0806	-55	125	1000	30	0	30000	
135	IXFH40N30Q	SS0933	-55	125	1000	30	0	30000	
136	IXFX64N50P	SP0942	-55	125	1000	30	0	30000	
137	IXFX48N50Q	SF0938	-55	125	1000	30	0	30000	
138	IXTQ88N28T	SK0842	-55	125	1000	30	0	30000	
139	IXFX64N50P	SS0939	-55	125	1000	30	0	30000	
140	IXFH6N120P	TP0937	-55	125	1000	30	0	30000	
141	IXFX360N10T	SP0931	-55	125	1000	30	0	30000	
142	IXTX600N04T2	SP0945	-55	125	1000	30	0	30000	
143	IXFK140N30P	SP0940	-55	125	1000	30	0	30000	
144	IXFR140N30P	SP0923	-55	125	1000	30	0	30000	
145	IXFH75N10Q	TP0917	-55	125	1000	30	0	30000	
146	IXTH260N055T2	SS0937	-55	125	1000	30	0	30000	
147	IXFH230N075T2	SP0928	-55	125	1000	30	0	30000	
148	IXGH20N100	TP0917	-55	125	1000	30	0	30000	
149	IXGR48N60C3D1	SP0948	-55	125	1000	30	0	30000	
150	IXFX73N30Q	SF0938	-55	125	1000	30	0	30000	
151	IXFX120N25P	SF0942	-55	125	1000	30	0	30000	
152	IXFH23N80Q	SS0945	-55	125	1000	30	0	30000	
153	IXGR48N60C3D1	SP0945	-55	125	1000	30	0	30000	
154	IXGR48N60C3D1	SP0945	-55	125	1000	30	0	30000	
155	IXGR72N60C3D1	SP0952	-55	125	1000	30	0	30000	
156	IXGX320N60B3	SS1002	-55	125	1000	30	0	30000	
157	IXGX320N60B3	SS1002	-55	125	1000	30	0	30000	
158	IXTX550N055T2	SS1002	-55	125	1000	30	0	30000	
159	IXTX550N055T2	SS1002	-55	125	1000	30	0	30000	
160	IXTH500N04T2	SP0945	-55	125	1000	30	0	30000	
161	IXTH440N055T2	SP0948	-55	125	1000	30	0	30000	
162	IXFH400N075T2	SP0948	-55	125	1000	30	0	30000	
163	IXFR140N30P	SP1001	-55	125	1000	30	0	30000	
164	IXFH160N15T2	SS0926	-55	125	1000	30	0	30000	
165	IXFH150N17T2	SS0952	-55	125	1000	30	0	30000	
166	IXGH30N60B2	SP1003	-55	125	1000	30	0	30000	
167	IXFX220N17T2	SP0931	-55	125	1000	30	0	30000	
168	IXTP182N055T	SS1003	-55	125	1000	30	0	30000	
169	IXTH50P10	TP1002	-55	125	1000	30	0	30000	
170	IXTH24P20	TP1002	-55	125	1000	30	0	30000	

TABLE 4A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
171	IXTQ48N20T	SS1004	-55	125	1000	30	0	30000	
172	IXTQ96N20P	SK0836	-55	125	1000	30	0	30000	
173	IXFN80N50	SF0936	-55	125	1000	30	0	30000	
174	IXFX180N07	SP1005	-55	125	1000	30	0	30000	
175	IXFH58N20	TK0849	-55	125	1000	30	0	30000	
176	IXGH24N60C4D1	SS1006	-55	125	1000	30	0	30000	
177	IXFX44N55Q	SP0944	-55	125	1000	30	0	30000	
178	IXFX44N80P	SF1006	-55	125	1000	30	0	30000	
179	IXFC26N50	SF0938	-55	125	1000	30	0	30000	
180	IXFN230N20T	SP1011	-55	125	1000	30	0	30000	
181	IXFN320N17T2	SP0929	-55	125	1000	30	0	30000	
182	IXGN60N60	SP0841	-55	125	1000	30	0	30000	
183	IXFN180N07	SP0643	-55	125	1000	30	0	30000	
184	IXFN34N80	SP0919	-55	125	1000	30	0	30000	
185	IXGN200N60B3	SP1008	-55	125	1000	30	0	30000	
186	IXFN150N10	SP1009	-55	125	1000	30	0	30000	
187	IXFN82N60P	SP1004	-55	125	1000	30	0	30000	
188	IXFN48N60P	SP0949	-55	125	1000	30	0	30000	
189	IXGT60N60B2	SP0826	-55	125	1000	30	0	30000	
190	IXFH26N50P	SK0843	-55	125	1000	30	0	30000	
191	IXFH42N50P2	SP1009	-55	125	1000	30	0	30000	
192	IXFP44N100Q	TS1013	-55	125	1000	30	0	30000	
193	IXFP44N100Q	TS1013	-55	125	1000	30	0	30000	
194	IXFB120N50P2	SP1015	-55	125	1000	30	0	30000	
195	IXFP44N100Q	TS1018	-55	125	1000	30	0	30000	
196	IXFH150N17T	SS1020	-55	125	1000	30	0	30000	
197	IXGH25N160	TP1016	-55	125	1000	30	0	30000	
198	IXFH150N17T	SP1021	-55	125	1000	30	0	30000	
199	IXFB40N110P	TP1026	-55	125	1000	30	0	30000	
200	IXFH88N30P	SP1009	-55	125	1000	30	0	30000	
201	IXGH48N60C3	SS1006	-55	125	1000	30	0	30000	
202	IXTP60N10T	S1038	-55	125	1000	30	0	30000	
203	IXFK26N120P	TP1037	-55	125	1000	30	0	30000	
204	IXFX44N80P	SF1006	-55	125	1000	30	0	30000	
205	IXTA2R4N120P	K636	-55	125	1000	30	0	30000	
206	IXTH48P20P	S1040	-55	125	1000	30	0	30000	
207	IXTP10P15T	SS1038	-55	125	1000	30	0	30000	
208	IXTP15P15T	SS1036	-55	125	1000	30	0	30000	
209	IXTH32P20T	SP1035	-55	125	1000	30	0	30000	
210	IXTP48P05T	SS1040	-55	125	1000	30	0	30000	
211	IXTP26P10T	SS1040	-55	125	1000	30	0	30000	
212	IXFN21N100Q	SF1040	-55	125	1000	30	0	30000	
213	IXTQ88N30P	SS0939	-55	125	1000	30	0	30000	
214	IXFH12N100Q	TP1043	-55	125	1000	30	0	30000	
215	IXFH74N20P	SS1039	-55	125	1000	30	0	30000	
216	IXTH96N20P	SS0938	-55	125	1000	30	0	30000	
217	IXTH50P10	SS1033	-55	125	1000	30	0	30000	
218	IXTH96P085T	SP0926	-55	125	1000	30	0	30000	
219	IXTX600N055T	SS0940	-55	125	1000	30	0	30000	
220	IXTX600N055T	SS0940	-55	125	1000	30	0	30000	
221	IXTX600N055T	SS0940	-55	125	1000	30	0	30000	
222	IXTH48P20P	SS1050	-55	125	1000	30	0	30000	
223	IXBX75N170	TP1031	-55	125	1000	30	0	30000	
224	IXFX26N120P	TP1102	-55	125	1000	30	0	30000	
225	IXFK26N120P	TP1102	-55	125	1000	30	0	30000	
226	IXTQ22N60P	SS1104	-55	125	1000	30	0	30000	
227	IXFK94N50P2	SP1051	-55	125	1000	30	0	30000	

TABLE 4A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
228	IOTP450P2	SS1047	-55	125	1000	30	0	30000	
229	IQTQ36N30P	SS1029	-55	125	1000	30	0	30000	
230	IOTP3N50P	SS1048	-55	125	1000	30	0	30000	
231	IOTP8N50P	SS1050	-55	125	1000	30	0	30000	
232	IOTP120P065T	SS1013	-55	125	1000	30	0	30000	
233	IOTP80N12T2	SS1043	-55	125	1000	30	0	30000	
234	IXTA1N100	TS1047	-55	125	1000	30	0	30000	
235	IXFH15N60	SS1104	-55	125	1000	30	0	30000	
236	IXTH48P20P	SS1105	-55	125	1000	30	0	30000	
237	IXFN44N60	SP1103	-55	125	1000	30	0	30000	
238	IOTP220N04T2	SS1051	-55	125	1000	30	0	30000	
239	IOTP32N20T	SS1051	-55	125	1000	30	0	30000	
240	IXFH12N80P	SS1051	-55	125	1000	30	0	30000	
241	IXFH100N25P	SS1049	-55	125	1000	30	0	30000	
242	IXFN340N07	SF1105	-55	125	1000	30	0	30000	
243	IXTN21N100	SF1105	-55	125	1000	30	0	30000	
244	IXFN90N30	SF1105	-55	125	1000	30	0	30000	
245	IXFN34N80	SF1105	-55	125	1000	30	0	30000	
246	IXFK230N20T	SP1106	-55	125	1000	30	0	30000	
247	IXTH48P20P	SP1049	-55	125	1000	30	0	30000	
248	IXTH76P10T	SS1052	-55	125	1000	30	0	30000	
249	IXFH12N100F	SS1052	-55	125	1000	30	0	30000	
250	IXXH50N60C3	SS1105	-55	125	1000	30	0	30000	
251	IXFB44N100Q3	SP1106	-55	125	1000	30	0	30000	
252	IXFB100N50Q3	SP1106	-55	125	1000	30	0	30000	
253	IXFH50N60P3	SP1109	-55	125	1000	30	0	30000	
254	IXFX80N60P3	SP1109	-55	125	1000	30	0	30000	
255	IXFH40N30Q	SS1020	-55	125	1000	30	0	30000	
256	IXGK75N250	TP1110	-55	125	1000	30	0	30000	
257	IXFX78N50P3	SS1108	-55	125	1000	30	0	30000	
258	IXFX78N50P3	SP1109	-55	125	1000	30	0	30000	
259	IXFX98N50P3	SP1110	-55	125	1000	30	0	30000	
260	IXFA4N100Q	TS1108	-55	125	1000	30	0	30000	
261	IXFT14N80P	SP0731	-55	125	1000	30	0	30000	
262	IXTT16N20D2	TP1019	-55	125	1000	30	0	30000	
263	IXFH60N50P3	SP1109	-55	125	1000	30	0	30000	
264	IXFB132N50P3	SP1110	-55	125	1000	30	0	30000	
265	IXFX80N50Q3	SP1106	-55	125	1000	30	0	30000	
266	IXTM21N50	SP1023	-55	125	1000	30	0	30000	
267	IXFX64N60P3	SP1110	-55	125	1000	30	0	30000	
268	IXFH42N60P3	SP1110	-55	125	1000	30	0	30000	
269	IXTT80N20L	TP1046	-55	125	1000	30	0	30000	
270	IXFH22N60P3	SS1108	-55	125	1000	30	0	30000	
271	IXFB38N100Q2	TP1115	-55	125	1000	30	0	30000	
272	IXTT60N20L2	TP1005	-55	125	1000	30	0	30000	
273	IXFH28N60P3	SS1115	-55	125	1000	30	0	30000	
274	IXTA3N120	TS1115	-55	125	1000	30	0	30000	
275	IXFK230N20T	SP1116	-55	125	1000	30	0	30000	
276	IXFH50N30Q3	SP1117	-55	125	1000	30	0	30000	
277	IXFK94N50P2	SP1111	-55	125	1000	30	0	30000	
278	IXFH70N20Q3	SS1117	-55	125	1000	30	0	30000	
279	IXFH30N50Q3	SS1117	-55	125	1000	30	0	30000	
280	IOTP102N15T	K834	-55	125	1000	30	0	30000	
281	IXYH82N120C3	TP1115	-55	125	1000	30	0	30000	
282	IXFB62N80Q3	SP1118	-55	125	1000	30	0	30000	
283	IXFB82N60Q3	SP1118	-55	125	1000	30	0	30000	
284	IXTH12N140	TP1119	-55	125	1000	30	0	30000	

TABLE 4A (cont'd): MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
285	IXFR66N50Q2	TP1122	-55	125	1000	30	0	30000	
286	IXFX64N50Q3	SP1118	-55	125	1000	30	0	30000	
287	IXFX48N60Q3	SS1118	-55	125	1000	30	0	30000	
288	IXFX64N60Q3	SS1118	-55	125	1000	30	0	30000	
289	IXFH15N100Q3	SP1121	-55	125	1000	30	0	30000	
290	IXGK75N250	TP1047	-55	125	1000	30	0	30000	
291	IXFX32N80Q3	SS1122	-55	125	1000	30	0	30000	
292	IXFX44N80Q3	SP1123	-55	125	1000	30	0	30000	
293	IXFH20N80P	SS1121	-55	125	1000	30	0	30000	
294	IXGT32N120A3	TP1121	-55	125	1000	30	0	30000	
295	IXTH68P20T	SP1130	-55	125	1000	30	0	30000	
296	IXTH140P10T	SP1130	-55	125	1000	30	0	30000	
297	IXTX20N140	TP1126	-55	125	1000	30	0	30000	
298	IXFR32N100Q3	SP1133	-55	125	1000	30	0	30000	
299	IXFH70N30Q3	SP1133	-55	125	1000	30	0	30000	
300	IXFH44N50Q3	SP1133	-55	125	1000	30	0	30000	
301	IXGH50N60C4	SP1133	-55	125	1000	30	0	30000	
302	IXYH50N120C3	TP1137	-55	125	1000	30	0	30000	
303	IXYH30N120C3	TP1137	-55	125	1000	30	0	30000	
304	IXFH120N25T	SS1115	-55	125	1000	30	0	30000	
305	IXFH94N30T	SS1115	-55	125	1000	30	0	30000	
306	IXCH36N250	TP1139	-55	125	1000	30	0	30000	
307	IXFX160N30T	SS1140	-55	125	1000	30	0	30000	
308	IXFH120N25T	SP1141	-55	125	1000	30	0	30000	
309	IXFH94N30T	SP1141	-55	125	1000	30	0	30000	
310	IXTT140P10T	SP1142	-55	125	1000	30	0	30000	
311	IXTH1N80P	TP0905	-55	125	1000	30	0	30000	
312	IXTP1N80P	SS0908	-55	125	1000	30	0	30000	
313	IXFX24N100Q3	SP1137	-55	125	1000	30	0	30000	
314	IXFH18N100Q3	SP1136	-55	125	1000	30	0	30000	
315	IXFK32N90P	TP1123	-55	125	1000	30	0	30000	
316	IXTX120P20T	SP1133	-55	125	1000	30	0	30000	
317	IXTX210P10T	SP1130	-55	125	1000	30	0	30000	
318	IXYX100N120C3	TP1137	-55	125	1000	30	0	30000	
319	IXYH24N90C3	TS1144	-55	125	1000	30	0	30000	
320	IXYP8N90C3	TS1144	-55	125	1000	30	0	30000	
321	IXGK120N120B3	TP1143	-55	125	1000	30	0	30000	
322	GWM160-0055X2SL	2575	-40	150	1000	77	0	77000	
323	IXFX120N25P	2746	-55	150	1000	80	0	80000	
324	GWM160-0055X2SL	2575	-40	150	1000	77	0	77000	
325	IXFX120N25P	2746	-55	150	1000	80	0	80000	

TABLE 4B: MOSFET/IGBT Module

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MID75-12A3	3050	-40	150	50	10	0	500	
2	MII300-12E4	2432	-40	150	50	10	0	500	
3	MITA10WB1200TMH	2519	-40	150	50	10	0	500	
4	MITA15WB1200TMH	2502	-40	150	100	10	0	1000	
5	MITB15WB1200TMH	2502	-40	150	100	10	0	1000	
6	MIXA20W1200TML	3207	-40	150	50	20	0	1000	
7	MKI450-12E9	2636	-40	150	250	6	0	1500	
8	MUBW15-12A7	3146	-40	150	50	10	0	500	
9	MUBW50-12A8	2521	-40	150	50	10	0	500	
10	VMM90-09F	3215	-40	150	50	10	0	500	
11	VWM270-0075X2	2825	-40	150	50	10	0	500	

TABLE 4C: Thyristor/Diode Module

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MCC162-16	2451	-40	150	50	10	0	500	
2	MCC21-14io8	2617	-40	150	50	10	0	500	
3	MCC225-14	3102	-40	150	50	10	0	500	
4	MCC26-14	3104	-40	150	50	10	0	500	
5	MCC312	2690	-40	150	100	20	1	2000	
6	MCC312	2865	-40	150	100	10	0	1000	
7	MCC312-16	3028	-40	150	100	10	0	1000	
8	MCC312-16	3470	-40	150	50	10	0	500	
9	MCC44-16io1	2770	-40	150	100	20	0	2000	
10	MCC56-16io1B	3275	-40	150	50	10	0	500	
11	MCC95-14	2902	-40	150	50	10	0	500	
12	MCC95-16	3510	-40	150	50	10	0	500	
13	MCC95-16io1	2450	-40	150	50	10	0	500	
14	MDD312-16N1	3274	-40	150	50	10	0	500	
15	UGE0421AY4	2464	-40	150	10	10	0	100	

TABLE 4D: Controller, Rectifier Bridge

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MMO62-16	2516	-40	150	20	20	0	400	
2	MMO62-16io6	3223	-40	150	20	20	0	400	
3	MMO90-16io6	2994	-40	150	20	20	1	400	
4	VUB116-16NO1	2914	-40	150	50	10	0	500	
5	VUB120-16NOXT	3297	-40	150	100	10	0	1000	
6	VUB72-16	3086	-40	150	25	10	0	250	
7	VUM33-05N	2534	-40	150	25	10	0	250	
8	VUO 192-16NO7	2615	-40	150	100	10	0	1000	
9	VUO35-16NO7	2790	-40	150	100	20	0	2000	
10	VUO36-16NO8	3088	-40	150	10	10	0	100	
11	VUO52	3118	-40	150	150	40	0	6000	
12	VUO68-08NO7	2461	-40	150	10	10	0	100	
13	VVY50-16	3235	-40	150	50	10	0	500	

TABLE 4E: FRED

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	DHG50X1200NA	2624	-55	150	50	20	0	1000	
2	DPG120C300QB	2546	-55	150	100	20	0	2000	
3	DPG15I300PA	3353	-55	150	50	20	0	1000	
4	DPG20C300PB	2540	-55	150	50	20	0	1000	
5	DPG30C400HB	2831	-55	150	100	20	0	2000	
6	DPG30P300PJ	2715	-55	150	100	20	0	2000	
7	DSEC60-04A	2441	-55	150	50	20	0	1000	
8	DSEC60-06A	2874	-55	150	50	20	0	1000	
9	DSEC60-06A	2619	-55	150	50	20	0	1000	
10	DSEC60-06A	3449	-55	150	50	20	0	1000	
11	DSEE55-24N1	2627	-55	150	50	20	0	1000	
12	DSEI12-06A	2604	-40	150	100	20	0	2000	
13	DSEI2x31-06P	3462	-40	150	10	10	0	100	
14	DSEI2x61-06AL	2775	-40	150	50	20	0	1000	
15	DSEI2x61-12B	3456	-40	150	50	20	0	1000	
16	DSEI30-06A	2833	-40	150	100	20	0	2000	
17	DSEI30-06A	2978	-40	150	50	20	0	1000	
18	DSEI30-10A	3070	-40	150	50	20	0	1000	
19	DSEI60-06A	2895	-55	150	100	20	0	2000	
20	DSEP12-12AR	2877	-55	140	50	20	0	1000	
21	DSEP15-06A	3002	-55	150	100	20	0	2000	
22	DSEP15-12CR	3096	-55	150	50	20	0	1000	
23	DSEP29-12A	3184	-55	150	50	20	0	1000	
24	DSEP2x25C12C	2832	-40	150	100	50	0	5000	
25	DSEP30-12AR	3345	-55	150	50	20	0	1000	
26	DSEP60-06A	2830	-55	150	100	40	0	4000	
27	MEE300-06DA	2536	-40	150	50	10	0	500	
28	MEK95-06DA €	3213	-40	150	50	10	0	500	
29	MEO450-12	2890	-40	150	50	10	0	500	

TABLE 4F: Schottky Diode

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	DSA10C150PB	2956	-55	150	100	20	0	2000	
2	DSA50C100HB	2448	-55	150	100	20	0	2000	
3	DSA60C100PB	2456	-55	150	50	20	0	1000	
4	DSA60C150PB	2577	-55	150	100	20	0	2000	
5	DSA90C200HB	3347	-55	150	50	20	0	1000	
6	DSA90C200HB	2530	-55	150	100	40	0	4000	
7	DSA90C200HB	2803	-55	150	100	20	0	2000	
8	DSA90C200HR	2622	-55	150	100	20	0	2000	
9	DSA90C200HR	2993	-55	150	300	20	0	6000	
10	DSA90C200HR	2993	-55	150	500	20	0	10000	
11	DSB60C30PB	2495	-55	150	100	20	0	2000	
12	DSS2x101-015A	2774	-40	150	50	20	0	1000	
13	DSSK20-015A	2539	-55	150	50	20	0	1000	
14	DSSK30-18A	2880	-55	150	50	20	0	1000	
15	DSSK60-015A	2975	-55	150	50	20	0	1000	
16	DSSK60-015AR	2772	-55	150	100	20	0	2000	
17	DSSK60-02A	3452	-55	150	50	20	0	1000	
18	DSSK70-008A	3073	-55	150	50	20	0	1000	
19	DSSS35-008AR	3445	-55	150	50	20	0	1000	

TABLE 4G: Thyristor/Diode single device

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	CLA30E1200PC	2657	-55	150	100	20	0	2000	
2	CLA50E1200HB	3346	-55	150	50	20	0	1000	
3	CLA50E1200HB	2543	-40	150	50	20	0	1000	
4	CLA80E1200HF	2670	-55	150	100	20	0	2000	
5	CS19-12H01	2849	-40	150	100	20	0	2000	
6	CS19-12ho1	3484	-40	150	50	20	0	1000	
7	CS19-12ho1	3119	-40	150	100	20	0	2000	
8	CS20-25MoT1	2485	-40	150	100	20	0	2000	
9	CS20-25moT1	2735	-40	150	100	20	0	2000	
10	CS20-25MoT1	2582	-40	150	100	20	0	2000	
11	CS22-12io1M	3186	-40	150	50	20	5	1000	
12	CS23-16	3336	-40	150	20	10	0	200	
13	CS30-12io1	3300	-40	150	100	20	0	2000	
14	CS30-16io1	2437	-40	125	50	20	0	1000	
15	CS35-14io4	3090	-40	150	20	10	0	200	
16	CS45-08io1	2884	-40	150	50	20	0	1000	
17	CS45-12io1	3098	-40	150	50	20	0	1000	
18	CS60-16io1	2960	-40	150	100	20	0	2000	
19	CS60-16io1	2960	-40	150	100	20	0	2000	
20	CS8-12io2	2458	-40	150	20	10	0	200	
21	CSM400A	2847	-25	85	1000	10	0	10000	
22	CSM400A	2501	-40	150	100	10	0	1000	
23	CSM400A	3333	-40	150	25	10	0	250	
24	DMA30E1800HA	3273	-55	150	100	20	0	2000	
25	DSA17-16A	2954	-40	150	20	10	0	200	
26	DSA17-16A	2564	-40	150	20	10	0	200	
27	DSA300i100NA	2848	-40	150	50	10	0	500	
28	DSA30i150PA	3182	-55	150	50	20	0	1000	
29	DSA35-18A	3442	-40	150	20	10	0	200	
30	DSA9-12F	3178	-40	150	20	10	0	200	
31	DSAI75-18	2531	-40	150	20	10	0	200	
32	DSAI75-18	2995	-40	150	20	10	0	200	
33	DSDI60-18A	3228	-40	150	50	20	0	1000	
34	DSI2x55-12A	2538	-40	150	20	20	0	400	
35	DSI2x55-16A	3341	-40	150	20	19	0	380	
36	DSI45-16AR	2599	-40	150	50	20	0	1000	
37	DSP25-16A	2716	-40	150	1000	20	0	20000	
38	DSP25-16A	2976	-40	150	50	20	0	1000	
39	DSP45-16A	2661	-55	150	100	20	0	2000	
40	DSP45-16A	3193	-55	150	100	80	0	8000	
41	DSP45-16A	3021	-55	150	100	20	0	2000	

TABLE 4H: Breakover Diode

#	Part Number	Date Code or Test #	Low Temp. [°C]	High Temp. [°C]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	IXBOD1-06	3459	-40	150	50	20	0	1000	
2	IXBOD1-08	3079	-40	150	50	20	0	1000	
3	IXBOD1-10	2436	-40	150	50	20	0	1000	
4	IXBOD2-14EPI	2905	-40	150	100	20	0	2000	

HUMIDITY TEST (Tables 5A - 5H)

TABLE 5A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	GWM160-0055X1SL	2786	121	100	96	20	0	1920	
2	GWM160-0055X2 S	3455	121	100	96	77	0	7392	
3	IEA21PG1200LA	2598	85	85	1000	20	0	20000	
4	IXBP5N160G	2454	121	100	48	20	0	960	
5	IXDH35N60BD1	3161	121	100	48	20	0	960	
6	IXDN75N120	2566	121	100	168	20	0	3360	
7	IXFX120N25P	2746	121	100	96	80	0	7680	
8	IXKN75N60C	2955	121	100	48	20	0	960	
9	IXLV1861	3061	85	85	168	20	0	3360	

TABLE 5B: MOSFET/IGBT Module

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MIXA60WB12TEH	2514	85	85	1000	10	0	10000	
2	MKI450-12E9	2636	85	85	1000	6	0	6000	
3	VMM90-09F	3216	85	85	168	10	0	1680	
4	VMO1200-01	2480	85	85	168	10	0	1680	
5	VWM270-0075X2	2825	85	85	1000	10	0	10000	

TABLE 5C: Thyristor/Diode Module

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	MCC312-16	3028	85	85	1000	10	0	10000	
2	MCD162	3465	85	85	1000	5	0	5000	
3	MCD162-16	3471	85	85	168	10	0	1680	
4	MCD162-16io1	2482	85	85	168	10	0	1680	

TABLE 5D: Controller, Rectifier Bridge

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	VGO36-14io7	2460	85	85	168	10	0	1680	
2	VUO 192-16NO7	2615	85	85	1000	10	0	10000	
3	VUO52-16	2563	85	85	168	10	0	1680	

TABLE 5E: FRED

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	DHG6011200HA	2518	121	100	96	20	0	1920	
2	DPG30C400HB	2831	121	100	96	20	0	1920	
3	DSEC60-06B	3095	121	100	48	20	0	960	
4	DSEE55-24N1F	2627	121	100	48	20	0	960	
5	DSEI2x101-12A	3325	121	100	96	20	0	1920	
6	DSEI2x101-12A	3222	121	100	48	20	0	960	
7	DSEI30-06A	2949	121	100	48	20	0	960	
8	DSEI60-10A	2439	121	100	168	20	0	3360	
9	DSEP15-06A	3002	121	100	96	20	0	1920	
10	DSEP15-12CR	3097	121	100	48	20	0	960	
11	DSEP60-06A	2830	121	100	96	40	0	3840	

TABLE 5F: Schottky Diode

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	DSA30C100PB	3192	121	100	96	20	0	1920	
2	DSA60C100PB	2456	121	100	48	20	0	960	
3	DSA90C200HB	2948	121	100	48	20	2	960	
4	DSS6-015AS	3177	121	100	96	20	0	1920	
5	DSSK60-015AR	2772	121	100	96	20	0	1920	
6	DSSK80-006B	3351	121	100	48	20	0	960	

TABLE 5G: Thyristor/Diode single device

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	DSP45-12A	2455	121	100	48	20	0	960	
2	CLA30E1200PC	2657	121	100	96	20	0	1920	
3	CLA80E1200HF	2670	121	100	96	10	0	960	
4	CSM400A	2847	85	85	1000	10	0	10000	
5	DSP25-16A	2950	121	100	48	20	0	960	
6	CS60-16io1	2960	121	100	96	20	0	1920	
7	DSDI60-16A	3342	121	100	48	20	0	960	

TABLE 5H: Breakover diode

#	Part Number	Date Code or Test #	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	IXBOD1-06	3460	121	100	48	20	0	960	
2	IXBOD1-08	3079	121	100	48	20	0	960	
3	IXBOD1-10	2436	121	100	48	20	0	960	
4	IXBOD2-14EPI	2905	121	100	96	20	0	1920	

HAST TEST (Table 6A)

TABLE 6A: MOSFET/IGBT single device										
#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
1	IXBX64N250	TP0952	130	42	85	96	30	0	2880	
2	IXFX80N50Q3	SP1106	130	42	85	96	30	0	2880	
3	IXFK32N80Q3	SP1119	130	42	85	96	30	0	2880	
4	IXFK64N60Q3	SP1119	130	42	85	96	30	0	2880	
5	IXFP12N80P3	SS1120	130	42	85	96	30	0	2880	
6	IXFK120N27P3	SP1119	130	42	85	96	30	0	2880	
7	IXFX120N27P3	SS1120	130	42	85	96	30	0	2880	
8	IXFB62N80Q3	SP1118	130	42	85	96	30	0	2880	
9	IXFB82N60Q3	SP1118	130	42	85	96	30	0	2880	
10	IXFR66N50Q2	TP1122	130	42	85	96	30	0	2880	
11	IXFX64N50Q3	SP1118	130	42	85	96	30	0	2880	
12	IXFX64N50Q3	SS1118	130	42	85	96	30	0	2880	
13	IXFR64N50Q3	SP1123	130	42	85	96	30	0	2880	
14	IXFK64N50Q3	SP1121	130	42	85	96	30	0	2880	
15	IXFA4N100Q	TS1108	130	42	85	96	30	0	2880	
16	IXTT16N20D2	TP1019	130	42	85	96	30	0	2880	
17	IXFB38N100Q2	TP1115	130	42	85	96	30	0	2880	
18	IXTA3N120	TS1115	130	42	85	96	30	0	2880	
19	IXTP102N15T	K834	130	42	85	96	30	0	2880	
20	IXGH2N250	TP1010	130	42	85	96	27	0	2592	
21	IXGH50N60C4	SP1052	130	42	85	96	28	0	2688	
22	IXFH22N60P3	SS1108	130	42	85	96	30	0	2880	
23	IXFH28N60P3	SS1115	130	42	85	96	30	0	2880	
24	IXFX48N60Q3	SS1118	130	42	85	96	30	0	2880	
25	IXFX64N60Q3	SS1118	130	42	85	96	30	0	2880	
26	IXFH15N100Q3	SP1121	130	42	85	96	30	0	2880	
27	IXFH70N20Q3	SS1117	130	42	85	96	30	0	2880	
28	IXFK38N80Q2	TP1105	130	42	85	96	30	0	2880	
29	IXFX44N80Q3	SP1123	130	42	85	96	30	0	2880	
30	IXFX32N80Q3	SS1122	130	42	85	96	30	0	2880	
31	IXFK94N50P2	SP1111	130	0	85	96	30	0	2880	
32	IXFK160N30T	SP1120	130	42	85	96	30	0	2880	
33	IXFK180N25T	SP1120	130	42	85	96	30	0	2880	
34	IXFX230N20T	SP0947	130	0	85	96	30	0	2880	
35	IXYH82N120C3	TP1115	130	42	85	96	30	0	2880	
36	IXFT14N80P	SP0731	130	42	85	96	30	0	2880	
37	IXFK26N120P	TP1037	130	42	85	96	30	0	2880	
38	IXFK230N20T	SP1116	130	42	85	96	30	0	2880	
39	IXGT32N120A3	TP1121	130	42	85	96	30	0	2880	
40	IXTT60N20L2	TP1005	130	42	85	96	30	0	2880	
41	IXXH50N60C3	SS1105	130	42	85	96	30	0	2880	
42	IXBX64N250	TP1130	130	42	85	96	30	0	2880	
43	IXTP220N04T2	SS1051	130	42	85	96	30	0	2880	
44	IXFX64N50P	SS0939	130	42	85	96	30	0	2880	
45	IXTQ130N15T	SK0715	130	42	85	96	30	0	2880	
46	IXFX48N50Q	SF0938	130	42	85	96	30	0	2880	
47	IXFH70N15	SP0850	130	42	85	96	30	0	2880	
48	IXFH42N50P2	SP1009	130	42	85	96	30	0	2880	
49	IXTH68P20T	SP1130	130	-42	85	96	30	0	2880	
50	IXTH140P10T	SP1130	130	-42	85	96	30	0	2880	
51	IXTH96P085T	SP0926	130	-42	85	96	30	0	2880	
52	IXGH32N170	TP0907	130	42	85	96	30	0	2880	
53	IXTH75N10	TP0848	130	42	85	96	30	0	2880	
54	IXFB44N100Q3	SP1106	130	42	85	96	30	0	2880	
55	IXFB44N100P	TP0930	130	42	85	96	30	0	2880	
56	IXFR32N100Q3	SP1133	130	42	85	96	30	0	2880	
57	IXFH120N25T	SS1115	130	42	85	96	30	0	2880	
58	IXFH94N30T	SS1115	130	42	85	96	30	0	2880	
59	IXFH44N50Q3	SP1133	130	42	85	96	30	0	2880	
60	IXFH70N30Q3	SP1133	130	42	85	96	30	0	2880	

TABLE 6A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	Voltage [V]	Temp. [°C]	Rel. H. [%]	Time [hrs]	Sample Size	Failures	Device Hours [hrs]	Remark
61	IXFB100N50Q3	SP1106	130	42	85	96	30	0	2880	
62	IXTH48P20P	SS1105	130	-42	85	96	30	0	2880	
63	IXFB40N110P	TP1026	130	42	85	96	30	0	2880	
64	IXTP182N055T	SS1003	130	42	85	96	30	0	2880	
65	IXTP120P065T	SS1013	130	-42	85	96	30	0	2880	
66	IXGH50N60C4	SP1133	130	42	85	96	30	0	2880	
67	IXYH50N120C3	TP1137	130	42	85	96	30	0	2880	
68	IXYH30N120C3	TP1137	130	42	85	96	30	0	2880	
69	IXTP10P15T	SS1038	130	-42	85	96	30	0	2880	
70	IXTP26P10T	SS1040	130	-42	85	96	30	0	2880	
71	IXTP220N04T2	SS0927	130	42	85	96	30	0	2880	
72	IXFK32N90P	TP1123	130	42	85	96	30	0	2880	
73	IXTP48P05T	SS1040	130	-42	85	96	30	0	2880	
74	IXTP8N50P	SS1050	130	42	85	96	30	0	2880	
75	IXTP3N50P	S1048	130	42	85	96	30	0	2880	
76	IXFH26N50P	SK0843	130	42	85	96	30	0	2880	
77	IXTH1N80P	TP0905	130	42	85	96	10	0	960	
78	IXTP1N80P	SS0908	130	42	85	96	30	0	2880	
79	IXFX24N100Q3	SP1137	130	42	85	96	30	0	2880	
80	IXFH18N100Q3	SP1136	130	42	85	96	30	0	2880	
81	IXFH6N120P	TP0937	130	42	85	96	30	0	2880	
82	IXFH120N25T	SP1141	130	42	85	96	77	0	7392	
83	IXFH94N30T	SP1141	130	42	85	96	77	0	7392	
84	IXTH48P20P	SS1040	130	-42	85	96	30	0	2880	
85	IXTT140P10T	SP1142	130	-42	85	96	77	0	7392	
86	IXFK94N50P2	SP1111	130	0	85	96	30	0	2880	
87	IXFK98N50P3	SP1142	130	42	85	96	25	0	2400	
88	IXFK80N60P3	SP1142	130	42	85	96	25	0	2400	
89	IXFK80N60P3	SP1142	130	42	85	96	25	0	2400	
90	IXTX120P20T	SP1133	130	-42	85	96	30	0	2880	
91	IXTX210P10T	SP1130	130	-42	85	96	30	0	2880	
92	IXTP15P15T	SS1036	130	-42	85	96	30	0	2880	
93	IXFH22N60P3	SS1143	130	42	85	96	30	0	2880	
94	IXGK120N120B3	TP1143	130	42	85	96	30	0	2880	
95	IXTP2N100	SS0914	130	42	85	96	24	0	2304	
96	IXFH28N60P3	SS1144	130	42	85	96	30	0	2880	
97	IXYH24N90C3	TS1144	130	42	85	96	30	0	2880	
98	IXYP8N90C3	TS1144	130	42	85	96	30	0	2880	
99	IXFK94N50P2	SP1146	130	42	50	96	30	0	2880	
100	IXFH20N50P3	SP1141	130	42	85	96	30	0	2880	
101	IXGK120N60B3	SP1146	130	42	85	96	30	0	2880	
102	IXGH48N60C3D1	TP1148	130	42	85	96	30	0	2880	
103	IXFH16N60P3	SS1142	130	42	85	96	30	0	2880	
104	IXFN32N100Q3	SP1132	130	42	85	96	30	0	2880	
105	IXTV03N400S	TP1134	130	42	85	96	30	0	2880	
106	IXGH40N120B2D1	TP0940	130	42	85	96	30	0	2880	
107	IXTP80N10T	SS1150	130	42	85	96	30	0	2880	
108	IXFH150N20T	SP1147	130	42	85	96	30	0	2880	
109	IXFT20N100P	TP1147	130	42	85	96	30	0	2880	
110	IXXH50N60B3D1	TP1150	130	42	85	96	30	0	2880	
111	IXTH3N120	TS1136	130	42	85	96	30	0	2880	
112	IXFP14N60P3	SS1144	130	42	85	96	30	0	2880	
113	IXTA80N10T	SS1150	130	42	85	96	77	0	7392	
114	IXFP4N60P3	SS1143	130	42	85	96	30	0	2880	
115	IXBT24N170	TP1202	130	42	85	96	30	0	2880	
116	IXSH45N120	TP1204	130	42	85	96	30	0	2880	