



Efficiency Through Technology

**RELIABILITY REPORT
2015**

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 (TC)

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 (PC)

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} .

Steady State Temperature Humidity Bias Life Test (H³TRB)

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} .

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

$$AF = \exp \left\{ Ea \cdot \left[\frac{T_2 - T_1}{T_2 \cdot T_1} \right] / k \right\} \quad (1)$$

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+T_j) K

T₂: abs. test junction temperature (273+T_j) 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 / 10^9 hrs

TABLES 3:

ΔT: max T_j - min T_j 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	123	4527	10580	4408	1656	4547	918	15293
Failure Rate [FIT] 90°C, 60% UCL	7	271	634	264	99	272	55	916
Total Lots Tested	235	21	27	24	24	31	27	8
Total Devices Tested	7107	226	280	340	477	640	567	160
Total Actual Failures	1	0	0	1	0	0	0	0
60% UCL {eq. (2)}	1,00	0,92	0,92	1,00	0,92	0,92	0,92	0,92
Total Equivalent Device Hours @ 125°C {AF eq. (1)}	8101460	203230	86960	226880	555420	202320	1002556	60160
MTTF 125°C 60% UCL	925	25	11	26	69	25	124	7
(Years) 90°C 60% UCL	15445	421	180	433	1151	419	2077	125

Summary of Table 2A - 2B: HTGB

	Table 2A MOSFET/IGBT discrete device	Table 2B MOSFET/IGBT Module
Failure Rate [FIT] 125°C, 60% UCL	143	9244
Failure Rate [FIT] 90°C, 60% UCL	46	2982
Total Lots Tested	207	22
Total Devices Tested	6439	216
Total Actual Failures	0	0
60% UCL {eq. (2)}	0,92	0,92
Total Equivalent Device Hours @ 125°C {AF eq. (1)}	6419520	99520
MTTF 125°C 60% UCL	797	12
(Years) 90°C 60% UCL	2469	38

Summary of Tables 3A - 3G: Power Cycle

	Table 3A MOSFET/IGBT discrete device	Table 3B MOSFET/IGBT Module	Table 3C Thyr./Diode Module	Table 3D Controller/ Rec. Bridge	Table 3E FRED	Table 3F Schottky Diode	Table 3G Thyr./Diode discrete device
Total Lots Tested	275	7	13	11	18	20	24
Total Devices Tested	7053	76	130	102	397	400	400
Total Failures	0	0	0	0	0	0	0
Total Device Cycles	102316000	1620000	2300000	590000	1252000	840000	960000

Summary of Tables 4A - 4H: Temperature Cycle

	Table 4A MOSFET/IGBT discrete device	Table 4B MOSFET/IGBT Module	Table 4C** Thyr./Diode Module	Table 4D Controller/ Rec. Bridge	Table 4E FRED	Table 4F Schottky Diode	Table 4G Thyr./Diode discrete device	Table 4H Breakover Diode
Total Lots Tested	268	20	29	19	37	31	37	7
Total Devices Tested	7627	232	305	211	721	610	830	140
Total Failures	1	0	0	0	0	0	0	0
Total Device Cycles	6729800	17300	27100	11200	44550	37400	202800	8000

** 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	Table 5D Controller/ Rec. Bridge	Table 5E FRED	Table 5F Schottky Diode	Table 5G Thyr./Diode discrete device	Table 5H Breakover Diode
Total Lots Tested	157	16	8	12	31	10	13	7
Total Devices Tested	5209	155	78	120	717	200	280	140
Total Failures	1	0	0	0	0	0	0	0
Total Device Hours	494784	105192	28080	61760	79232	12480	20160	7680

Summary of Tables 6A - 6G: H³TRB

	Table 6A MOSFET/IGBT discrete device	Table 6B MOSFET/IGBT Module	Table 6C Thyr./Diode Module	Table 6D Controller/ Rec. Bridge	Table 6E FRED	Table 6F Schottky Diode	Table 6G Thyr./Diode discrete device
Total Lots Tested	6	2	2	0	2	0	1
Total Devices Tested	294	20	20	0	97	0	77
Total Failures	0	0	0	0	0	0	0
Total Device Hours	294000	20000	20000	0	97000	0	77000

*no data

* no data

Summary of Tables 7A: HAST

	Table 7A MOSFET/IGBT discrete device
Total Lots Tested	163
Total Devices Tested	5248
Total Failures	0
Total Device Hours	503808

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	GWM160-0055X2 SL	3580	44	150	1000	77	0	77000	
2	IEA21PG1200LA	2805	960	125	1000	60	0	60000	
3	IRA37IH1200HJ	4571	960	150	1000	20	1	20000	I_CES increased
4	IXA12IF1200TC	3543	960	125	1000	20	0	20000	
5	IXA20I200PB	4849	960	125	168	20	0	3360	
6	IXA20IF1200HB	3927	960	125	168	20	0	3360	
7	IXA20PG1200DHG LA	4228	960	125	1000	20	0	20000	
8	IXA20PG1200DHG LB	3581	960	125	1000	20	0	20000	
9	IXA20PT1200LB	4363	840	125	1000	20	0	20000	
10	IXA20PT1200LB	4363	960	125	1000	20	0	20000	
11	IXA20RG1200DHG LA	3211	960	125	1000	20	0	20000	
12	IXA27IF1200HJ	3376	960	125	1000	20	0	20000	
13	IXA45IF1200HB	3023	960	125	168	20	0	3360	
14	IXA4IF1200UC	3116	960	150	1000	20	0	20000	
15	IXA55I1200HJ	2585	960	125	1000	20	0	20000	
16	IXA55I200HJ	2389	960	125	1000	20	0	20000	
17	IXBF55N300	TP1243	2400	90	1000	30	0	30000	
18	IXBF55N300	TP1332	2400	90	1000	30	0	30000	
19	IXBF55N300	TP1337	2400	90	1000	30	0	30000	
20	IXBF55N300	TP1339	2400	90	1000	30	0	30000	
21	IXBH16N170A	TP1221	960	125	1000	30	0	30000	
22	IXBH40N160	3795	1260	125	168	20	0	3360	
23	IXBH9N160G	2446	1280	125	168	20	0	3360	
24	IXBH9N160G	3075	1280	125	168	20	0	3360	
25	IXBT24N170	TP1202	960	125	1000	30	0	30000	
26	IXCH36N250	TP1139	960	90	1000	30	0	30000	
27	IXDH20N120	3356	960	125	168	20	0	3360	
28	IXDH30N120D1	2603	960	125	168	20	0	3360	
29	IXDH30N120D1	4058	960	125	168	20	0	3360	
30	IXDH35N60BD1	2951	480	125	168	20	0	3360	
31	IXDH35N60BD1	3229	480	125	168	20	0	3360	
32	IXDH35N60BD1	4715	480	125	168	20	0	3360	
33	IXDN55N120D1	4404	960	125	168	10	0	1680	
34	IXEH25N120D1	2628	960	125	168	20	0	3360	
35	IXER35N120D1	3607	960	125	168	20	0	3360	
36	IXER60N120	2306	960	125	168	20	0	3360	
37	IXFB100N50P	TP1110	400	125	1000	30	0	30000	
38	IXFB110N60P3	TP1412	480	125	1000	25	0	30000	
39	IXFB132N50P3	TP1415	400	125	1000	25	0	30000	
40	IXFB132N50P3	TP1415	400	125	1000	25	0	30000	
41	IXFB210N30P3	SP1224	240	125	1000	30	0	30000	
42	IXFB40N110Q3	TP1405	880	125	1000	25	0	30000	
43	IXFB40N110Q3	TP1403	880	125	1000	25	0	30000	
44	IXFB40N110Q3	TP1420	880	125	1000	30	0	30000	
45	IXFB60N80PK	TS1349	800	125	1000	30	0	30000	
46	IXFB62N80Q3	TS1422	640	125	1000	30	0	30000	
47	IXFB62N80Q3K	TS1349	800	125	1000	30	0	30000	
48	IXFB62N80Q3K	TS1349	640	125	1000	25	0	30000	
49	IXFH12N90	TS1344	720	125	1000	30	0	30000	
50	IXFH12N90	TS1350	720	125	1000	30	0	30000	
51	IXFH12N90	TS1350	720	125	1000	30	0	30000	
52	IXFH12N90	TP1310	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
53	IXFH150N17T	US1401	136	125	1000	30	0	30000	
54	IXFH150N17T2	SS1341	136	125	1000	30	0	30000	
55	IXFH150N20T	SP1147	160	125	1000	30	0	30000	
56	IXFH15N100P	TP1202	800	125	1000	30	0	30000	
57	IXFH160N15T	US1401	120	125	1000	30	0	30000	
58	IXFH160N15T2	SS1319	120	125	1000	30	0	30000	
59	IXFH16N50P3	SP1207	400	125	1000	30	0	30000	
60	IXFH16N60P3	SS1142	480	125	1000	30	0	30000	
61	IXFH18N90P	TP1202	720	125	1000	77	0	77000	
62	IXFH20N50P3	SP1141	400	125	1000	30	0	30000	
63	IXFH22N60P3	SP1318	400	125	1000	30	0	30000	
64	IXFH26N50	TS1331	500	125	1000	30	0	30000	
65	IXFH26N50	TS1331	500	125	1000	30	0	30000	
66	IXFH26N50P3	SS1206	400	125	1000	30	0	30000	
67	IXFH26N50P3	TP1325	400	125	1000	23	0	23000	
68	IXFH26N50Q	TS1343	500	125	1000	30	0	30000	
69	IXFH26N50Q	TS1343	500	125	1000	30	0	30000	
70	IXFH26N60P	TP1439	480	125	1000	30	0	30000	
71	IXFH30N50P	SS1413	400	125	1000	30	0	30000	
72	IXFH46N30T	US1408	240	125	1000	30	0	30000	
73	IXFH50N50P3	SS1407	400	125	1000	30	0	30000	
74	IXFH50N60P3	SP1201	480	125	1000	30	0	30000	
75	IXFH50N60P3	TS1414	480	125	1000	30	0	30000	
76	IXFH52N50P2	GS1422	400	125	1000	30	0	30000	
77	IXFH60N50P3	TP1326	400	125	1000	30	0	30000	
78	IXFH60N50P3	GS1408	400	125	1000	30	0	30000	
79	IXFH76N15T2	US1406	120	125	1000	30	0	30000	
80	IXFH7N100P	TP1143	800	125	1000	30	0	30000	
81	IXFH88N30P	TP1237	240	125	1000	30	0	30000	
82	IXFK120N25P	TP1239	200	125	1000	30	0	30000	
83	IXFK140N30P	TP1242	240	125	1000	30	0	30000	
84	IXFK420N10T	SP1347	100	125	1000	22	0	22000	
85	IXFK420N10T	SP1347	100	125	1000	22	0	30000	
86	IXFK44N80P	TP1219	640	125	1000	30	0	30000	
87	IXFK64N50P	TP1242	400	125	1000	30	0	30000	
88	IXFK64N60P3	GP1444	480	125	1000	29	0	30000	
89	IXFK80N60P3	SP1150	480	125	1000	30	0	30000	
90	IXFK80N60P3	TP1415	480	125	1000	30	0	30000	
91	IXFK80N60P3	TP1418	480	125	1000	30	0	30000	
92	IXFK90N50P2	TP1333	400	125	1000	77	0	77000	
93	IXFK90N50P2	TP1337	500	125	1000	77	0	77000	
94	IXFK90N50P2	TP1406	500	125	1000	77	0	30000	
95	IXFK94N50P2	SF1211	480	125	1000	30	0	30000	
96	IXFN100N25	SS1309	200	125	1000	30	0	30000	
97	IXFN150N15	SS1309	120	125	1000	30	0	30000	
98	IXFN32N120P	TP1230	960	125	1000	30	0	30000	
99	IXFN360N10T	US1422	80	125	1000	30	0	30000	
100	IXFN38N100P	TP1230	800	125	1000	30	0	30000	
101	IXFN64N50P	TS1347	500	125	1000	30	0	30000	
102	IXFN90N30	TS1309	240	125	1000	30	0	30000	
103	IXFP110N15T2	SS1332	120	125	1000	30	0	30000	
104	IXFP110N15T2	US1351	120	125	1000	30	0	30000	
105	IXFP110N15T2	US1351	150	125	1000	30	0	30000	
106	IXFP14N60P3	SS1144	480	125	1000	30	0	30000	
107	IXFP16N50P3	GS1419	400	125	1000	30	0	30000	
108	IXFP170N075T2	US1310	60	125	1000	30	0	30000	
109	IXFP180N10T2	SS1305	80	125	1000	30	0	30000	
110	IXFP22N60P3	TS1324	480	125	1000	30	0	30000	
111	IXFP230N075T2	US1309	60	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
112	IXFP36N30P3	GS1419	240	125	1000	30	0	30000	
113	IXFP4N60P3	SS1143	480	125	1000	30	0	30000	
114	IXFP5N50P3	SS1206	400	125	1000	30	0	30000	
115	IXFP7N60P3	SS1143	480	125	1000	30	0	30000	
116	IXFQ94N30P3	SS1321	240	125	1000	30	0	30000	
117	IXFT20N100P	TP1147	800	125	1000	30	0	30000	
118	IXFX120N25P	2746	200	150	1000	80	0	80000	
119	IXFX140N25T	US1410	200	125	1000	30	0	30000	
120	IXFX20N120P	TS1337	960	125	1000	30	0	30000	
121	IXFX230N20T	US1408	160	125	1000	30	0	30000	
122	IXFX32N100Q3	TP1229	800	125	1000	30	0	30000	
123	IXFX44N80Q3	TP1226	640	125	1000	30	0	30000	
124	IXFX64N50P	2924	200	150	1000	80	0	80000	
125	IXFX64N60P3	TP1429	480	125	1000	30	0	30000	
126	IXFX64N60P3	TS1444	480	125	1000	29	0	30000	
127	IXFX80N60P3	HP1449	480	125	1000	30	0	30000	
128	IXGA20N250HV	TS1222	960	125	1000	10	0	10000	
129	IXGA24N170A	TS1215	960	125	1000	30	0	30000	
130	IXGD1972	TP1336	960	50	1000	22	0	30000	
131	IXGD1972	TP1336	960	50	1000	22	0	30000	
132	IXGH100N30C3	SS1250	240	125	1000	30	0	30000	
133	IXGH32N60B	TP1205	480	125	1000	30	0	30000	
134	IXGH40N120B2D1	TP0940	960	125	1000	30	0	30000	
135	IXGH48N60C3D1	TP1148	480	125	1000	30	0	30000	
136	IXGH50N60C4	SP1133	480	125	1000	30	0	30000	
137	IXGK120N120B3	TP1143	960	125	1000	30	0	30000	
138	IXGK120N60B3	SP1146	480	125	1000	30	0	30000	
139	IXKH70N60C5	3639	480	125	168	20	0	3360	
140	IXKN75N60C	2955	480	125	168	10	0	1680	
141	IXKR40N60C	3077	480	125	168	20	0	3360	
142	IXLT2025	3914	2300	70	300	20	0	6000	
143	IXLV1861	3061	2300	70	300	20	0	6000	
144	IXSH45N120	TP1204	960	125	1000	30	0	30000	
145	IXTA80N10T	SS1150	80	125	1000	77	0	77000	
146	IXTF02N450	TP1329	3000	90	1000	22	0	22000	
147	IXTH02N450HV	TS1414	3000	90	1001	30	0	30000	
148	IXTH12N150	TP1206	960	125	1000	30	0	30000	
149	IXTH140N10P	TS1406	80	125	1000	30	0	30000	
150	IXTH16P60P	TS1316	-480	125	1000	30	0	30000	
151	IXTH1N200P3	TP1338	960	125	1000	30	0	30000	
152	IXTH1N200P3HV	TS1404	1600	125	1000	30	0	30000	
153	IXTH1N300P3HV	TS1404	2400	125	1000	30	0	30000	
154	IXTH1N450HV	TS1404	3000	125	1000	30	0	30000	
155	IXTH200N10T	SP1319	80	125	1000	30	0	30000	
156	IXTH20N60X	HS1440	480	125	1000	30	0	30000	
157	IXTH20N65X	SS1344	520	125	1000	30	0	30000	
158	IXTH20N65X	SS1344	520	125	1000	30	0	30000	
159	IXTH20N65X	HS1440	520	125	1000	30	0	30000	
160	IXTH20P50P	TP1309	-400	125	1000	30	0	30000	
161	IXTH32N60X	HS1440	480	125	1000	30	0	30000	
162	IXTH32N65X	SS1346	520	125	1000	30	0	30000	
163	IXTH32N65X	HS1440	520	125	1000	30	0	30000	
164	IXTH3N120	TS1136	960	125	1000	30	0	30000	
165	IXTH4N150	TS1151	960	125	1000	30	0	30000	
166	IXTH4N150	TP1149	960	125	1000	30	0	30000	
167	IXTH64N65X	HS1417	520	125	1001	30	0	30000	
168	IXTH6N100D2	TP1202	800	125	1000	30	0	30000	
169	IXTH6N150	TP1201	960	125	1000	30	0	30000	
170	IXTH80N075L2	TS1419	60	125	1000	30	0	30000	
171	IXTH86N25T	UP1408	200	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
172	IXTH96P085T	SS1302	-68	125	1000	30	0	30000	
173	IXTK550N055T2	SP1239	44	125	1000	30	0	30000	
174	IXTK550N055T2	UP1242	44	125	1000	30	0	30000	
175	IXTK550N055T2	UP1250	44	125	1000	30	0	30000	
176	IXTK550N055T2	UP1251	44	125	1000	30	0	30000	
177	IXTL2N450	TP1239	3000	90	1000	30	0	30000	
178	IXTN15N100	2819	800	150	1000	80	0	80000	
179	IXTP02N120P	TS1307	960	125	1000	30	0	30000	
180	IXTP02N120P	TS1307	960	125	1000	30	0	30000	
181	IXTP100N04T2	SS1341	40	125	1000	30	0	30000	
182	IXTP110N055T2	SS1332	55	125	1000	30	0	30000	
183	IXTP130N10T	SS1318	80	125	1000	30	0	30000	
184	IXTP200N055T2	US1310	44	125	1000	30	0	30000	
185	IXTP200N055T2	US1414	55	125	1000	77	0	30000	
186	IXTP20N65X	HS1332	520	125	1000	30	0	30000	
187	IXTP260N055T2	SS1338	55	125	1000	30	0	30000	
188	IXTP2N100P	TS1332	800	125	1000	30	0	30000	
189	IXTP2N100P	TS1332	800	125	1000	30	0	30000	
190	IXTP450P2	GS1352	500	125	1000	30	0	30000	
191	IXTP450P2	GS1411	400	125	1000	30	0	30000	
192	IXTP460P2	TS1332	400	125	1000	30	0	30000	
193	IXTP460P2	GS1421	400	125	1000	30	0	30000	
194	IXTP460P2	GS1421	400	125	1000	30	0	30000	
195	IXTP50N28T	US1426	224	125	1000	30	0	30000	
196	IXTP76P10T	TS1332	-80	125	1000	30	0	30000	
197	IXTP80N10T	SS1150	80	125	1000	30	0	30000	
198	IXTP80N10T	SS1318	80	125	1000	30	0	30000	
199	IXTQ200N10T	SS1125	80	125	1000	30	0	30000	
200	IXTQ200N10T	SS1125	80	125	1000	30	0	30000	
201	IXTQ44N50P	GS1408	400	125	1000	30	0	30000	
202	IXTQ460P2	SS1236	400	125	1000	30	0	30000	
203	IXTQ82N25P	TS1348	200	125	1000	30	0	30000	
204	IXTT140P10T	SP1142	-80	125	1000	77	0	77000	
205	IXTT6N150	TP1203	960	125	1000	30	0	30000	
206	IXTV03N400S	TP1134	960	125	1000	30	0	30000	
207	IXTX120P20T	SP1133	-160	125	1000	30	0	30000	
208	IXTX200N10L2	TP1137	80	125	1000	30	0	30000	
209	IXTX210P10T	SP1130	-80	125	1000	30	0	30000	
210	IXXH110N65B4	TS1448	520	125	1000	30	0	30000	
211	IXXH110N65B4	TS1448	520	125	1000	30	0	30000	
212	IXXH50N60B3D1	TP1150	480	125	1000	30	0	30000	
213	IXXH60N65B4	SP1235	520	125	1000	30	0	30000	
214	IXXH60N65C4	SP1236	520	125	1000	30	0	30000	
215	IXXH80N65B4H1	SP1319	520	125	1000	30	0	30000	
216	IXYH24N90C3	TS1144	720	125	1000	30	0	30000	
217	IXYH40N120C3	TP1137	960	125	1000	30	0	30000	
218	IXYH40N65C3D1	TS1427	520	125	1000	30	0	30000	
219	IXYH40N65C3H1	TP1324	520	125	1000	30	0	30000	
220	IXYH40N90C3	TS1205	720	125	1000	30	0	30000	
221	IXYH50N65C3D1	TS1424	520	125	1000	30	0	30000	
222	IXYH60N90C3	SS1205	720	125	1000	30	0	30000	
223	IXYH75N65C3	TS1341	650	125	1000	30	0	30000	
224	IXYH75N65C3D1	TS1429	520	125	1000	30	0	30000	
225	IXYH80N90C3	TP1205	720	125	1000	30	0	30000	
226	IXYN100N65C3H1	TS1346	650	125	1000	30	0	30000	
227	IXYN100N65C3H1	TS1346	650	125	1000	30	0	30000	
228	IXYP10N65C3	TS1319	520	125	1000	30	0	30000	
229	IXYP10N65C3	TS1319	520	125	1000	30	0	30000	
230	IXYP10N65C3D1	TS1401	520	125	1000	30	0	30000	
231	IXYT20N120C3D1HV	TS1247	960	125	1000	30	0	30000	
232	IXYX100N120C3	TP1137	960	125	1000	30	0	30000	
233	MKE39A600LA	3038	480	125	1000	10	0	10000	
234	MPA22R600DHGFC	3919	480	125	1000	20	0	20000	

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	336	20	0	3360	
2	MITA15WB1200TMH	2502	960	125	1000	10	0	10000	
3	MITB15WB1200TMH	2502	960	125	1000	10	0	10000	
4	MIXA100W1200TEH	3248	960	125	1000	10	0	10000	
5	MIXA40WB1200TED	4543	960	125	1000	10	0	10000	
6	MIXA40WB1200TED	4732	960	125	1000	20	0	20000	
7	MIXA50WB600TED	4090	520	150	1000	10	0	10000	
8	MIXA60WB1200TEH	4155	960	125	1000	10	0	10000	
9	MIXA60WB1200TEH	4155	1120	125	1000	10	0	10000	
10	MIXA80WB1200TEH	4800	960	125	287	10	0	2870	
11	MIXA81WB1200TEH	4012	1120	125	1000	10	0	10000	
12	MIXD200W650TEH	4421	520	125	1000	10	0	10000	
13	MIXD80PM650TMI	4249	520	125	1000	10	0	10000	
14	MKI450-12E9	2636	960	125	1000	6	0	6000	
15	MUBW36-12E7	2487	960	125	168	10	0	1680	
16	MWI35-12T7T	2420	960	125	1000	10	0	10000	
17	VKM60-01P1	4029	80	125	168	10	0	1680	
18	VMM300-03FP	4201	240	125	168	10	0	1680	
19	VMM90-09F	2467	720	125	168	10	0	1680	
20	VMM90-09F	3214	720	125	168	10	0	1680	
21	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	CSM401B	3377	2000	60	350	10	0	3500	
2	CSM401B	3377	2000	80	650	10	0	6500	
3	MCC21-16	3584	1120	125	168	10	0	1680	
4	MCC26-16	3854	1120	125	168	10	0	1680	
5	MCC26-16io1	2616	1120	125	168	10	0	1680	
6	MCC26-16io1	4925	1120	125	168	10	0	1680	
7	MCC26-16io1B	4169	1120	125	168	10	0	1680	
8	MCC310-16	2537	1120	125	168	10	0	1680	
9	MCC312	2820	1120	125	1000	10	0	10000	
10	MCC312	4064	1120	125	168	10	0	1680	
11	MCC312-16	3511	1120	125	168	10	0	1680	
12	MCC312-16io1	3099	1120	125	168	10	0	1680	
13	MCC44-16	3969	1120	125	168	10	0	1680	
14	MCC56-16io1	3127	1120	125	168	10	0	1680	
15	MCC56-16io1	3733	1120	125	168	10	0	1680	
16	MCC95-14io1B	4075	980	125	168	10	0	1680	
17	MCC95-16io1	2450	1120	125	168	10	0	1680	
18	MCC95-16io1B	3276	1120	125	168	10	0	1680	
19	MDD172	3465	1260	125	1000	10	0	10000	
20	MDD172-12	3331	1260	125	168	10	0	1680	
21	MDD175-34N1	4595	2380	125	168	10	0	1680	
22	MDD312-16N1	3301	1120	125	168	10	0	1680	
23	MDD312-18N1	2959	1260	125	168	10	0	1680	
24	MDD56	2323	1260	125	1000	20	0	20000	
25	MDD95-22	4395	1540	125	168	10	0	1680	
26	MDD95-22N1B	4589	1540	125	168	10	0	1680	
27	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	MDNA210UB2200PTED	4859	1360	125	1000	10	0	10000	
2	MDNA660U2200TEH	4861	1540	125	1000	10	0	10000	
3	MMO230-14io7	2459	980	125	168	10	0	1680	
4	VBO21-12NO7	3587	840	125	168	10	0	1680	
5	VUB116-16NOXT	4927	960	125	2000	20	1	40000	L_CES increased
6	VUB116-16NOXT	4927	1120	125	1000	10	0	10000	
7	VUB145-16NOXT	4154	960	125	1000	10	0	10000	
8	VUB145-16NOXT	4154	1120	125	1000	10	0	10000	
9	VUC36-16go2	3320	1120	125	336	20	0	3360	
10	VUI72NOXT	3955	960	125	168	10	0	1680	
11	VUI72NOXT	3955	1120	125	168	10	0	1680	
12	VUO155-16	3101	1120	125	168	10	0	1680	
13	VUO192-16NO7	2615	1260	125	1000	10	0	10000	
14	VUO34-18NO1	4362	1260	125	1168	40	0	23360	
15	VUO36-16NO8	3806	1120	125	168	10	0	1680	
16	VUO52-16NO1	2563	1120	125	336	20	0	3360	
17	VUO52-16NO1	2824	1120	125	1000	20	0	20000	
18	VUO52-16NO1	3118	1400	125	1000	20	0	20000	
19	VUO52-16NO1	3655	1120	125	168	10	0	1680	
20	VUO52-16NO1	3822	1120	125	1000	20	0	20000	
21	VUO52-16NO1	3887	1120	125	2000	20	0	20000	
22	VUO55-16NO7	4745	1120	125	168	10	0	1680	
23	VUO60-16NO3	2326	1120	125	168	10	0	1680	
24	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	DFE10I600PM	4766	480	125	168	20	0	3360	
2	DFE30I600QM	4819	480	125	1000	20	0	20000	
3	DH2x61-18A	4847	1440	125	168	10	0	1680	
4	DHG60I600HA	4513	480	125	1000	20	0	20000	
5	DPG30C200HB	3925	160	125	168	20	0	3360	
6	DPG60B600LB	4409	480	150	1000	77	0	77000	
7	DPG80C300HB	3796	240	125	168	20	0	3360	
8	DPG80C300HB	4623	240	125	168	20	0	3360	
9	DSEC120-12AK	4438	960	125	1000	20	0	20000	
10	DSEC29-06AC	4429	480	125	1000	40	0	40000	
11	DSEC60-12A	4456	960	125	168	20	0	3360	
12	DSEI2x121-02A	4063	160	125	168	10	0	1680	
13	DSEI2x31-06C	3738	480	125	168	10	0	1680	
14	DSEI2x31-06P	3461	480	125	168	10	0	1680	
15	DSEI2x61-12B	4146	960	125	168	10	0	1680	
16	DSEI2x61-12B	4317	480	125	168	10	0	1680	
17	DSEI60-06A	4037	480	125	168	20	0	3360	
18	DSEP15-06B	4328	480	125	168	20	0	3360	
19	DSEP15-12CR	4034	960	125	168	20	0	3360	
20	DSEP2x61-06A	3954	480	125	168	10	0	1680	
21	DSEP30-06BR	3715	480	125	168	20	0	3360	
22	DSEP30-12AR	4618	960	125	168	20	0	3360	
23	DSEP60-06A	3595	480	125	168	20	0	3360	
24	MEE250-12DA	3644	960	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	DSA20C100PN	3801	100	125	168	20	0	3360	
3	DSA20C150PB	4209	120	125	1000	20	0	20000	
4	DSA20C45PB	4621	45	125	168	20	0	3360	
5	DSA30C45PB	4295	45	125	168	20	0	3360	
6	DSA50C100QB	2316	100	125	168	20	0	3360	
7	DSA50C100QB	2532	100	125	168	20	0	3360	
8	DSA50C100QB	3451	100	125	168	20	0	3360	
9	DSA60C150PB	2577	150	125	1000	20	0	20000	
10	DSA70C150HB	3350	150	125	168	20	0	3360	
11	DSA90C200HR	2404	200	125	1000	20	0	20000	
12	DSA90C200HR	2622	200	125	1000	20	0	20000	
13	DSA90C200HR	3794	200	125	168	20	0	3360	
14	DSB80C45HB	4036	36	100	1000	20	0	20000	
15	DSSK30-018A	4785	180	125	168	20	0	3360	
16	DSSK38-0025B	2953	20	100	1000	20	0	20000	
17	DSSK60-002A	4494	200	125	168	20	0	3360	
18	DSSK60-0045A	3608	45	125	168	20	0	3360	
19	DSSK60-015A	3181	150	125	168	20	0	3360	
20	DSSK60-015AR	2478	150	125	168	20	0	3360	
21	DSSK60-015AR	2772	150	125	1000	20	0	20000	
22	DSSK60-02A	2981	200	125	168	20	0	3360	
23	DSSK70-008AR	2982	80	125	336	40	0	6720	
24	DSSK80-0025B	3199	20	100	1000	20	0	20000	
25	DSSK80-0025B	3699	20	100	1000	20	0	20000	
26	DSSK80-003B	3072	24	100	1000	20	0	20000	
27	DSSK80-0045B	4101	36	100	1000	20	0	20000	
28	DSSK80-006B	2878	48	100	1000	20	0	20000	
29	DSSK80-006B	4130	48	100	1000	20	0	20000	
30	DSSK80-006BR	3928	48	100	1000	20	0	20000	
31	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	CLA50E1200HB	4140	840	125	168	20	0	3360	
2	CLB30I1200HB	4104	840	125	1000	20	0	20000	
3	CLF20E1200PB	4038	840	125	168	20	0	3360	
4	CMA50E1600TZ	4331	1120	125	1000	20	0	20000	
5	CS19-12ho1	3736	840	125	168	20	0	3360	
6	CS45-12io1	4615	840	125	168	20	0	3360	
7	CS45-16io1R	4459	1120	125	168	20	0	3360	
8	CSM410LB	4152	1680	125	1000	20	0	20000	
9	DAA10P1800PZ	4742	1260	25	1000	20	0	20000	
10	DLA100B1200LB	4351	960	150	1000	77	0	77000	
11	DMA10I1600PA	3799	1120	150	168	20	0	3360	
12	DMA10I1600PA	4324	1120	150	168	20	0	3360	
13	DMA30E1600HA	4451	1260	150	1000	20	0	20000	
14	DNA30E2200PZ	4454	1540	150	168	20	0	3360	
15	DS2-08A	4015	560	150	168	10	0	1680	
16	DSA1-16D	4440	1120	150	1000	40	0	40000	
17	DSA17-18A	3856	1260	150	168	20	0	3360	
18	DSA17-18A	4734	1260	150	168	10	0	1680	
19	DSA9-18F	4292	1260	150	168	10	0	1680	
20	DSAI35-16A	3708	1120	150	168	10	0	1680	
21	DSDI60-14A	3929	1120	125	168	20	0	3360	
22	DSI30-12A	3610	840	150	168	20	0	3360	
23	DSI45-16A	4968	1120	150	168	20	0	3360	
24	DSI45-16AR	4161	1120	150	168	20	0	3360	
25	DSP25-16AR	4320	1120	150	168	20	0	3360	
26	DSP25-16AR	4765	1120	125	168	20	0	3360	
27	MCO100-16io1	4656	1120	125	168	10	0	1680	

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	IXBOD1-08	4212	640	125	1000	20	0	20000	
4	IXBOD1-08	4749	640	125	168	20	0	3360	
5	IXBOD1-09	4041	720	125	168	20	0	3360	
6	IXBOD1-10	2436	800	125	168	20	0	3360	
7	IXBOD1-10	3721	800	125	168	20	0	3360	
8	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	GWM160-0055X1SL	2786	16	150	1000	10	0	10000	
2	GWM160-0055X2 SL	3580	15	150	1000	77	0	77000	
3	IEA21PG1200LA	2598	16	125	1000	20	0	20000	
4	IXA171F1200HJ	4674	16	150	168	20	0	3360	
5	IXA20PG1200DHG LB	3581	16	150	100	20	0	2000	
6	IXA20PT1200LB	4363	16	150	1000	20	0	20000	
7	IXA40PG1200DHGLA	3211	16	150	1000	20	0	20000	
8	IXA41F1200UC	4871	16	150	168	20	0	3360	
9	IXA55I1200HJ	2585	16	150	1000	20	0	20000	
10	IXA55I200HJ	2511	20	150	1000	32	0	32000	
11	IXA55I200HJ	2511	16	150	1000	20	0	20000	
12	IXBF1958	TP1332	25	125	1000	30	0	30000	
13	IXBF1958	TP1337	25	125	1000	30	0	30000	
14	IXBF1958	TP1339	25	125	1000	30	0	30000	
15	IXBF55N300	TP1243	25	125	1000	30	0	30000	
16	IXBH10N300HV	TS1413	20	125	1000	30	0	30000	
17	IXBH14N300HV	TS1414	20	125	1000	30	0	30000	
18	IXBH16N170A	TP1221	20	125	1000	30	0	30000	
19	IXBH20N360HV	TS1404	20	125	1000	30	0	30000	
20	IXBH22N300HV	TS1421	20	125	1000	30	0	30000	
21	IXBH40N160	3739	16	150	168	20	0	3360	
22	IXBH5N160G	2983	16	150	168	20	0	3360	
23	IXBP5N160G	2454	16	150	168	20	0	3360	
24	IXBT24N170	TP1202	20	125	1000	30	0	30000	
25	IXBX28N300HV	TS1414	20	125	1000	30	0	30000	
26	IXBX50N360HV	TS1414	20	125	1000	30	0	30000	
27	IXCH36N250	TP1139	20	125	1000	30	0	30000	
28	IXDH35N60BD1	4974	16	150	168	20	0	3360	
29	IXDN75N120	2566	16	150	168	20	0	3360	
30	IXDN75N120	3952	16	150	168	20	0	3360	
31	IXDR30N120D1	2541	16	150	168	10	0	1680	
32	IXER35N120D1	3802	16	150	168	20	0	3360	
33	IXFB100N50P	TP1110	24	125	1000	30	0	30000	
34	IXFB110N60P3	TS1412	30	125	1000	25	0	30000	
35	IXFB132N50P3	TP1415	30	125	1000	25	0	30000	
36	IXFB210N30P3	SP1224	16	125	1000	30	0	30000	
37	IXFB40N110Q3	TP1405	30	125	1000	25	0	30000	
38	IXFB40N110Q3	TP1403	25	125	1000	25	0	30000	
39	IXFB60N80PK	TS1349	30	125	1000	30	0	30000	
40	IXFB62N80Q3K	TS1349	30	125	1000	30	0	30000	
41	IXFH12N90	TS1344	20	125	1000	30	0	30000	
42	IXFH12N90	TS1344	20	125	1000	30	0	30000	
43	IXFH150N17T	US1401	30	125	1000	30	0	30000	
44	IXFH150N20T	SP1147	16	125	1000	30	0	30000	
45	IXFH15N100P	TP1202	24	125	1000	30	0	30000	
46	IXFH160N15T	US1401	30	125	1000	30	0	30000	
47	IXFH160N15T2	SS1319	16	125	1000	30	0	30000	
48	IXFH16N50P3	SP1207	24	125	1000	30	0	30000	
49	IXFH16N60P3	SS1142	24	125	1000	30	0	30000	
50	IXFH18N90P	TP1202	16	125	1000	77	0	77000	
51	IXFH20N50P3	SP1141	16	125	1000	30	0	30000	
52	IXFH22N60P3	SP1318	30	125	1000	30	0	30000	
53	IXFH22N60P3	GS1429	30	125	1000	30	0	30000	
54	IXFH26N50	TS1331	20	125	1000	30	0	30000	
55	IXFH26N50	TS1331	20	125	1000	30	0	30000	
56	IXFH26N50P3	SS1206	24	125	1000	30	0	30000	
57	IXFH26N50P3	TP1325	30	125	1000	23	0	23000	
58	IXFH26N50Q	TS1343	20	125	1000	30	0	30000	
59	IXFH26N50Q	TS1343	20	125	1000	30	0	30000	
60	IXFH30N50P	SS1413	30	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	IXFH46N30T	US1408	20	125	1000	30	0	30000	
62	IXFH50N50P3	SS1407	30	125	1000	30	0	30000	
63	IXFH50N60P3	SP1201	16	125	1000	30	0	30000	
64	IXFH50N60P3	TS1414	30	125	1000	30	0	30000	
65	IXFH52N50P2	GS1422	30	125	1000	30	0	30000	
66	IXFH60N50P3	TP1326	30	125	1000	30	0	30000	
67	IXFH60N50P3	GS1408	30	125	1000	20	0	30000	
68	IXFH76N15T2	US1406	20	125	1000	30	0	30000	
69	IXFH7N100P	TP1143	24	125	1000	30	0	30000	
70	IXFH88N30P	TP1237	16	125	1000	30	0	30000	
71	IXFK120N25P	TP1239	16	125	1000	30	0	30000	
72	IXFK140N30P	TP1242	16	125	1000	30	0	30000	
73	IXFK40N90P	TP1434	30	125	1000	77	0	30000	
74	IXFK40N90P	TP1444	30	125	1000	77	0	30000	
75	IXFK420N10T	SP1347	20	125	1000	22	0	22000	
76	IXFK420N10T	SP1347	20	125	1000	22	0	30000	
77	IXFK44N80P	TP1219	24	125	1000	30	0	30000	
78	IXFK64N50P	TP1242	30	125	1000	30	0	30000	
79	IXFK80N60P3	SP1150	24	125	1000	30	0	30000	
80	IXFK90N50P2	TP1333	30	125	1000	77	0	77000	
81	IXFK90N50P2	TP1337	20	125	1000	77	0	77000	
82	IXFK90N50P2	TP1406	30	125	1000	77	0	30000	
83	IXFK94N50P2	SF1211	24	125	1000	30	0	30000	
84	IXFN100N25	SS1309	16	125	1000	30	0	30000	
85	IXFN150N15	SS1309	16	125	1000	30	0	30000	
86	IXFN32N120P	TP1230	24	125	1000	30	0	30000	
87	IXFN360N10T	US1422	20	125	1000	30	0	30000	
88	IXFN38N100P	TP1230	24	125	1000	30	0	30000	
89	IXFN64N50P	TS1347	30	125	1000	30	0	30000	
90	IXFN90N30	TS1309	16	125	1000	30	0	30000	
91	IXFP110N15T2	SS1332	20	125	1000	30	0	30000	
92	IXFP110N15T2	US1351	20	125	1000	30	0	30000	
93	IXFP14N60P3	SS1144	24	125	1000	30	0	30000	
94	IXFP16N50P3	GS1419	30	125	1000	30	0	30000	
95	IXFP170N075T2	US1310	16	125	1000	30	0	30000	
96	IXFP22N60P3	TS1324	16	125	1000	30	0	30000	
97	IXFP230N075T2	US1309	16	125	1000	30	0	30000	
98	IXFP36N30P3	GS1419	30	125	1000	30	0	30000	
99	IXFP4N60P3	SS1143	24	125	1000	30	0	30000	
100	IXFP5N50P3	SS1206	24	125	1000	30	0	30000	
101	IXFP7N60P3	SS1143	24	125	1000	30	0	30000	
102	IXFQ94N30P3	SS1321	20	125	1000	30	0	30000	
103	IXFT20N100P	TP1147	16	125	1000	30	0	30000	
104	IXFX120N25P	2746	20	150	1000	80	0	80000	
105	IXFX140N25T	US1410	20	125	1000	30	0	30000	
106	IXFX20N120P	TS1337	30	125	1000	30	0	30000	
107	IXFX230N20T	US1408	20	125	1000	30	0	30000	
108	IXFX32N100Q3	TP1229	24	125	1000	30	0	30000	
109	IXFX44N80Q3	TP1226	30	125	1000	30	0	30000	
110	IXFX64N50P	2924	20	150	1000	80	0	80000	
111	IXFX64N60P3	TS1337	20	125	1000	30	0	30000	
112	IXFX64N60P3	TP1429	30	125	1000	30	0	30000	
113	IXFX78N50P3	TS1337	20	125	1000	30	0	30000	
114	IXGA20N250HV	TS1222	16	125	1000	10	0	10000	
115	IXGH100N30C3	SS1250	16	125	1000	30	0	30000	
116	IXGH32N60B	TP1205	16	125	1000	30	0	30000	
117	IXGH40N120B2D1	TP0940	16	125	1000	30	0	30000	
118	IXGH48N60C3D1	TP1148	16	125	1000	30	0	30000	
119	IXGH50N60C4	SP1133	16	125	1000	30	0	30000	
120	IXGK120N120B3	TP1143	16	125	1000	30	0	30000	
121	IXGK120N60B3	SP1146	16	125	1000	30	0	30000	
122	IXKH35N60C5	4159	16	150	168	20	0	3360	

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	IXKH70N60C5	3359	16	150	168	20	0	3360	
124	IXKN40N60C	4453	16	150	168	20	0	3360	
125	IXKN75N60C	3094	16	150	168	20	0	3360	
126	IXKR40N60C	3360	16	150	168	20	0	3360	
127	IXKR40N60C	4031	16	150	168	20	0	3360	
128	IXSH45N120	TP1204	16	125	1000	30	0	30000	
129	IXTA80N10T	SS1150	20	125	1000	77	0	77000	
130	IXTH02N450HV	TS1414	20	125	1000	30	0	30000	
131	IXTH12N150	TP1206	24	125	1000	30	0	30000	
132	IXTH140N10P	TS1406	20	125	1000	30	0	30000	
133	IXTH16P60P	TS1316	16	125	1000	30	0	30000	
134	IXTH1N200P3	TP1338	20	125	1000	30	0	30000	
135	IXTH1N200P3HV	TS1404	20	125	1000	30	0	30000	
136	IXTH1N300P3HV	TS1404	20	125	1000	30	0	30000	
137	IXTH1N450HV	TS1404	20	125	1000	30	0	30000	
138	IXTH1R4N250P3HV	TS1413	20	125	1000	30	0	30000	
139	IXTH20N60X	HS1440	30	125	1000	30	0	30000	
140	IXTH20N65X	SS1344	30	125	1000	30	0	30000	
141	IXTH20P50P	TP1309	16	125	1000	30	0	30000	
142	IXTH2N150L	TP1317	30	125	1000	30	0	30000	
143	IXTH32N60X	HS1440	30	125	1000	30	0	30000	
144	IXTH32N65X	SS1346	30	125	1000	30	0	30000	
145	IXTH3N120	TS1136	20	125	1000	30	0	30000	
146	IXTH4N150	TS1151	24	125	1000	30	0	30000	
147	IXTH4N150	TP1149	24	125	1000	30	0	30000	
148	IXTH64N65X	HS1417	30	125	1000	30	0	30000	
149	IXTH6N100D2	TP1202	16	125	1000	30	0	30000	
150	IXTH6N150	TP1201	16	125	1000	30	0	30000	
151	IXTH80N075L2	TS1419	20	125	1000	30	0	30000	
152	IXTH86N25T	UP1408	20	125	1000	30	0	30000	
153	IXTH96P085T	SS1302	16	125	1000	30	0	30000	
154	IXTK550N055T2	SP1239	16	125	1000	30	0	30000	
155	IXTK550N055T2	UP1250	16	125	1000	30	0	30000	
156	IXTK550N055T2	UP1251	16	125	1000	30	0	30000	
157	IXTL2N450	TP1239	16	125	1000	30	0	30000	
158	IXTP02N120P	TS1307	20	125	1000	30	0	30000	
159	IXTP02N120P	TS1307	20	125	1000	30	0	30000	
160	IXTP100N04T2	SS1341	20	125	1000	30	0	30000	
161	IXTP110N055T2	SS1332	20	125	1000	30	0	30000	
162	IXTP130N10T	SS1318	16	125	1000	30	0	30000	
163	IXTP200N055T2	US1310	16	125	1000	30	0	30000	
164	IXTP200N055T2	US1414	20	125	1000	77	0	30000	
165	IXTP20N65X	HS1332	20	125	1000	30	0	30000	
166	IXTP260N055T2	SS1338	20	125	1000	30	0	30000	
167	IXTP2N100P	TS1332	20	125	1000	30	0	30000	
168	IXTP2N100P	TS1332	20	125	1000	30	0	30000	
169	IXTP450P2	GS1352	30	125	1000	30	0	30000	
170	IXTP450P2	GS1411	30	125	1000	30	0	30000	
171	IXTP460P2	TS1332	30	125	1000	30	0	30000	
172	IXTP460P2	GS1421	30	125	1000	30	0	30000	
173	IXTP460P2	GS1421	30	125	1000	30	0	30000	
174	IXTP50N28T	US1426	20	125	1000	30	0	30000	
175	IXTP76P10T	TS1332	15	125	1000	30	0	30000	
176	IXTP80N10T	SS1150	16	125	1000	30	0	30000	
177	IXTP80N10T	SS1318	16	125	1000	30	0	30000	
178	IXTQ200N10T	SS1125	24	125	1000	30	0	30000	
179	IXTQ200N10T	SS1125	24	125	1000	30	0	30000	
180	IXTQ44N50P	GS1408	30	125	1000	30	0	30000	
181	IXTQ460P2	SS1236	24	125	1000	30	0	30000	
182	IXTQ82N25P	TS1348	20	125	1000	30	0	30000	
183	IXTT140P10T	SP1142	-12	125	1000	77	0	77000	

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
184	IXTT6N150	TP1203	20	125	1000	30	0	30000	
185	IXTV03N400S	TP1134	16	125	1000	30	0	30000	
186	IXTX120P20T	SP1133	-12	125	1000	30	0	30000	
187	IXTX200N10L2	TP1137	16	125	1000	30	0	30000	
188	IXTX210P10T	SP1130	-12	125	1000	30	0	30000	
189	IXXH110N65B4	TS1448	20	125	1000	30	0	30000	
190	IXXH110N65B4	TS1448	20	125	1000	30	0	30000	
191	IXXH50N60B3D1	TP1150	20	125	1000	30	0	30000	
192	IXXH60N65B4	SP1235	16	125	1000	30	0	30000	
193	IXXH60N65C4	SP1236	16	125	1000	30	0	30000	
194	IXXH80N65B4H1	SP1319	16	125	1000	30	0	30000	
195	IXYH24N90C3	TS1144	16	125	1000	30	0	30000	
196	IXYH30N450HV	TS1413	20	125	1000	30	0	30000	
197	IXYH40N120C3	TP1137	16	125	1000	30	0	30000	
198	IXYH40N90C3	TS1205	16	125	1000	30	0	30000	
199	IXYH60N90C3	SS1205	16	125	1000	30	0	30000	
200	IXYH75N65C3	TS1341	20	125	1000	30	0	30000	
201	IXYH80N90C3	TP1205	16	125	1000	30	0	30000	
202	IXYN100N65C3H1	TS1346	20	125	1000	30	0	30000	
203	IXYN100N65C3H1	TS1346	20	125	1000	30	0	30000	
204	IXYT20N120C3D1HV	TS1247	16	125	1000	30	0	30000	
205	IXYX100N120C3	TP1137	16	125	1000	30	0	30000	
206	IXYX40N450HV	TS1414	20	125	1000	30	0	30000	
207	MKE38P600LB	4179	16	150	168	10	0	1680	

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	MDI75-12A3	3936	16	125	168	10	0	1680	
2	MID200-12A4	3328	16	125	168	10	0	1680	
3	MII300-12E4	2432	16	125	168	10	0	1680	
4	MIXA200RF1200TED-P	4868	16	125	1000	10	0	10000	
5	MIXA20W1200MC	3089	16	125	168	10	0	1680	
6	MIXA30WB1200TED	3945	16	125	168	10	0	1680	
7	MIXA60HU1200VA	3920	16	125	1000	10	0	10000	
8	MIXA60WB1200TEH	4155	16	125	1000	10	0	10000	
9	MIXA81WB1200TEH	4012	16	125	1000	10	0	10000	
10	MIXD200W650TEH	4421	16	125	1000	10	0	10000	
11	MKI450-12E9	2636	16	125	1000	6	0	6000	
12	MUBW20-06A6K	3007	16	125	168	10	0	1680	
13	MUBW35-06A6K	3826	16	125	168	10	0	1680	
14	MWI100-12E8	3677	16	125	168	10	0	1680	
15	MWI35-12A7	4019	16	125	168	10	0	1680	
16	MWI452-17E9	2904	16	125	1000	10	0	10000	
17	VKM60-01P1	3588	16	125	168	10	0	1680	
18	VMM90-09F	3217	16	125	168	10	0	1680	
19	VMO1200-01F	2480	16	125	168	10	0	1680	
20	VUM33-06PH	3302	16	125	168	10	0	1680	
21	VWI20-06P1	2462	16	125	168	10	0	1680	
22	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 #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	GWM160-0055X2 SL	3580	125	100	6000	77	0	462000	
2	IEA21PG1200LA	2598	125	80	80000	20	0	1600000	
3	IXA12IF1200TC	3543	125	80	4000	20	0	80000	
4	IXA20I1200PB	4850	125	80	2000	20	0	40000	
5	IXA20PG1200DHG LA	4228	125	80	80000	20	0	1600000	
6	IXA20PG1200DHG LB	3581	125	80	80000	20	0	1600000	
7	IXA20PG1200DHGLA	3211	125	80	8000	10	0	80000	
8	IXA55I200HJ	2389	145	100	4000	20	0	80000	
9	IXBF55N300	TP1243	145	100	15000	24	0	360000	
10	IXBF55N300	TP1332	145	100	2000	24	0	48000	
11	IXBF55N300	TP1337	145	100	2000	24	0	48000	
12	IXBF55N300	TP1339	145	100	15000	24	0	360000	
13	IXBH10N300HV	TS1413	145	100	15000	24	0	360000	
14	IXBH14N300HV	TS1414	145	100	15000	24	0	360000	
15	IXBH20N360HV	TS1404	145	100	15000	24	0	360000	
16	IXBH22N300HV	TS1421	145	100	15000	24	0	360000	
17	IXBH40N160	2946	125	100	2000	20	0	40000	
18	IXBH40N160	3243	125	80	2000	20	0	40000	
19	IXBH5N160G	4139	125	80	2000	20	0	40000	
20	IXBH9N160G	3357	125	80	2000	20	0	40000	
21	IXBT24N170	TP1202	145	100	15000	24	0	360000	
22	IXBX28N300HV	TS1414	145	100	15000	24	0	360000	
23	IXBX50N360HV	TS1414	145	100	15000	24	0	360000	
24	IXDH20N120D1	3591	125	80	2000	20	0	40000	
25	IXDH35N60BD1	4627	125	80	2000	20	0	40000	
26	IXFB100N50P	TP1110	145	100	15000	24	0	360000	
27	IXFB100N50Q3	SP1106	145	100	15000	24	0	360000	
28	IXFB110N60P3	TS1412	145	100	15000	24	0	360000	
29	IXFB120N50P2	SP1015	145	100	15000	24	0	360000	
30	IXFB132N50P3	SP1110	145	100	15000	24	0	360000	
31	IXFB132N50P3	TP1415	145	100	15000	24	0	360000	
32	IXFB210N30P3	SP1224	145	100	15000	24	0	360000	
33	IXFB40N110Q3	TP1405	145	100	15000	24	0	360000	
34	IXFB40N110Q3	TP1403	145	100	15000	24	0	360000	
35	IXFB44N100P	TP0930	145	100	15000	24	0	360000	
36	IXFB44N100P	TP1404	145	100	15000	24	0	360000	
37	IXFB60N80PK	TS1349	145	100	15000	24	0	360000	
38	IXFB60N80PK	TS1349	145	100	15000	24	0	360000	
39	IXFB62N80Q3	SP1118	145	100	15000	24	0	360000	
40	IXFB62N80Q3	TS1422	145	100	15000	24	0	360000	
41	IXFB62N80Q3	TS1422	145	100	15000	24	0	360000	
42	IXFB62N80Q3K	TS1349	145	100	15000	24	0	360000	
43	IXFB82N60P	SP0851	145	100	15000	24	0	360000	
44	IXFB82N60Q3	SP1118	145	100	15000	24	0	360000	
45	IXFH100N25P	SS1049	145	100	15000	24	0	360000	
46	IXFH12N90	SS0911	145	100	15000	24	0	360000	

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	IXFH12N90	TP1310	145	100	10000	24	0	240000	
48	IXFH150N17T	US1401	145	100	15000	24	0	360000	
49	IXFH150N17T2	SS1341	145	100	15000	24	0	360000	
50	IXFH150N20T	SP1147	145	100	15000	24	0	360000	
51	IXFH15N100P	TP1202	145	100	15000	24	0	360000	
52	IXFH15N100Q3	SP1121	145	100	15000	24	0	360000	
53	IXFH160N15T	US1401	145	100	15000	24	0	360000	
54	IXFH160N15T2	SS1319	145	100	15000	24	0	360000	
55	IXFH16N50P3	SP1207	145	100	15000	24	0	360000	
56	IXFH16N60P3	SS1142	145	100	15000	24	0	360000	
57	IXFH18N100Q3	SP11136	145	100	15000	24	0	360000	
58	IXFH18N90P	TP1202	145	100	15000	77	0	1155000	
59	IXFH20N50P3	SP1141	145	100	15000	24	0	360000	
60	IXFH20N80P	SS1121	145	100	10000	24	0	240000	
61	IXFH22N60P3	SS1108	145	100	15000	24	0	360000	
62	IXFH22N60P3	SP1318	145	100	15000	24	0	360000	
63	IXFH22N60P3	GS1429	145	100	15000	24	0	360000	
64	IXFH26N50	TS1331	145	100	15000	24	0	360000	
65	IXFH26N50P	K0843	145	100	15000	24	0	360000	
66	IXFH26N50P3	SS1206	145	100	15000	24	0	360000	
67	IXFH26N50P3	TP1325	145	100	15000	23	0	345000	
68	IXFH26N50Q	TS1343	145	100	15000	24	0	360000	
69	IXFH30N50P	SA0915	145	100	15000	24	0	360000	
70	IXFH30N50Q3	SS1117	145	100	15000	24	0	360000	
71	IXFH44N50P	SA0915	145	100	15000	24	0	360000	
72	IXFH44N50Q3	SP1133	145	100	15000	24	0	360000	
73	IXFH46N30T	US1408	145	100	15000	24	0	360000	
74	IXFH50N50P3	SS1407	145	100	15000	24	0	360000	
75	IXFH50N60P3	SP1201	145	100	15000	24	0	360000	
76	IXFH50N60P3	TS1414	145	100	15000	24	0	360000	
77	IXFH52N50P2	GS1422	145	100	15000	24	0	360000	
78	IXFH60N50P3	SP1109	145	100	15000	24	0	360000	
79	IXFH60N50P3	TP1326	145	100	15000	24	0	360000	
80	IXFH6N120P	TP0937	145	100	15000	24	0	360000	
81	IXFH70N15	SP0850	145	100	15000	24	0	360000	
82	IXFH70N20Q3	SS1117	145	100	15000	24	0	360000	
83	IXFH70N30Q3	SP1133	145	100	15000	24	0	360000	
84	IXFH76N15T2	US1406	145	100	15000	24	0	360000	
85	IXFH7N100P	TP1143	145	100	15000	24	0	360000	
86	IXFH88N30P	TP1237	145	100	15000	24	0	360000	
87	IXFH94N30T	SP1141	145	100	10000	77	0	770000	
88	IXFK120N25P	TP1239	145	100	15000	24	0	360000	
89	IXFK140N30P	TP1242	145	100	15000	24	0	360000	

TABLE 3A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
90	IXFK160N30T	SP1120	145	100	15000	24	0	360000	
91	IXFK230N20T	SP1116	145	100	15000	24	0	360000	
92	IXFK38N80Q2	TP1105	145	100	10000	24	0	240000	
93	IXFK40N90P	TP1434	145	100	15000	77	0	1155000	
94	IXFK40N90P	TP1444	145	100	15000	77	0	1155000	
95	IXFK420N10T	SP1347	145	100	15000	24	0	360000	
96	IXFK420N10T	SP1347	145	100	15000	24	0	360000	
97	IXFK44N80P	TP1219	145	100	15000	24	0	360000	
98	IXFK64N50P	TP1242	145	100	15000	24	0	360000	
99	IXFK90N50P2	TP1333	145	100	15000	77	0	1155000	
100	IXFK90N50P2	TP1337	145	100	15000	77	0	1155000	
101	IXFK90N50P2	TP1406	145	100	15000	77	0	1155000	
102	IXFK94N50P2	SF1211	145	100	15000	24	0	360000	
103	IXFN120N20	SS1301	145	100	15000	24	0	360000	
104	IXFN32N120P	TP1230	145	100	10000	24	0	240000	
105	IXFN360N10T	US1422	145	100	15000	24	0	360000	
106	IXFN38N100P	TP1230	145	100	15000	24	0	360000	
107	IXFN82N60P	SS1301	145	100	15000	24	0	360000	
108	IXFN90N30	TS1309	145	100	10000	24	0	240000	
109	IXFP110N15T2	SS1332	145	100	15000	24	0	360000	
110	IXFP14N60P3	SS1144	145	100	15000	24	0	360000	
111	IXFP16N50P3	GS1419	145	100	15000	24	0	360000	
112	IXFP180N10T2	SS1305	145	100	15000	24	0	360000	
113	IXFP22N60P3	TS1324	145	100	15000	24	0	360000	
114	IXFP230N075T2	US1309	145	100	15000	24	0	360000	
115	IXFP36N30P3	GS1419	145	100	15000	24	0	360000	
116	IXFP4N60P3	SS1143	145	100	15000	24	0	360000	
117	IXFP5N50P3	SS1206	145	100	15000	24	0	360000	
118	IXFP76N15T2	SS0920	145	100	15000	24	0	360000	
119	IXFP7N60P3	SS1143	145	100	15000	24	0	360000	
120	IXFQ94N30P3	SS1321	145	100	15000	24	0	360000	
121	IXFR32N100Q3	SP1133	145	100	15000	24	0	360000	
122	IXFT14N80P	SP0731	145	100	15000	24	0	360000	
123	IXFT20N100P	TP1147	145	100	10000	24	0	240000	
124	IXFT50N60P3	GP1443	145	100	15000	77	0	1155000	
125	IXFX120N25P	2746	150	100	6000	80	0	480000	
126	IXFX140N25T	US1410	145	100	15000	24	0	360000	
127	IXFX160N30T	SP0917	145	100	15000	24	0	360000	
128	IXFX180N25T	SS0908	145	100	15000	24	0	360000	
129	IXFX20N120P	TS1337	145	100	15000	24	0	360000	
130	IXFX230N20T	US1408	145	100	15000	24	0	360000	
131	IXFX24N100Q3	SP1137	145	100	15000	24	0	360000	
132	IXFX260N17T	SS0912	145	100	15000	24	0	360000	

TABLE 3A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
133	IXFX26N120P	TP1102	145	100	15000	24	0	360000	
134	IXFX320N17T2	SP0931	145	100	15000	23	0	345000	
135	IXFX32N100Q3	TP1229	145	100	15000	24	0	360000	
136	IXFX32N80Q3	SS1122	145	100	15000	24	0	360000	
137	IXFX32N90P	TS1122	145	100	15000	24	0	360000	
138	IXFX44N80P	TS1332	145	100	10000	15	0	150000	
139	IXFX44N80Q3	TP1226	145	100	15000	24	0	360000	
140	IXFX48N60Q3	SS1118	145	100	15000	24	0	360000	
141	IXFX64N60P	TP1331	145	100	10000	15	0	150000	
142	IXFX64N60P3	SP1110	145	100	15000	24	0	360000	
143	IXFX64N60P3	SS1332	145	100	15000	15	0	225000	
144	IXFX64N60P3	SS1332	145	100	15000	15	0	225000	
145	IXFX64N60P3	SS1332	145	100	15000	15	0	225000	
146	IXFX64N60P3	SS1335	145	100	15000	24	0	360000	
147	IXFX64N60P3	SS1335	145	100	15000	24	0	360000	
148	IXFX64N60P3	SS1335	145	100	15000	24	0	360000	
149	IXFX64N60P3	SS1335	145	100	15000	24	0	360000	
150	IXFX64N60P3	TS1337	145	100	15000	24	0	360000	
151	IXFX64N60P3	SS1335	145	100	15000	15	0	225000	
152	IXFX64N60Q3	SS1118	145	100	15000	24	0	360000	
153	IXFX73N30Q	SF0938	145	100	15000	24	0	360000	
154	IXFX78N50P3	SP1109	145	100	15000	24	0	360000	
155	IXFX78N50P3	TS1337	145	100	15000	24	0	360000	
156	IXFX80N50Q3	SP1106	145	100	15000	24	0	360000	
157	IXFX80N60P3	SP1109	145	100	15000	24	0	360000	
158	IXFX90N20Q	TP0849	145	100	15000	24	0	360000	
159	IXFX98N50P3	SP1110	145	100	15000	24	0	360000	
160	IXGA20N250HV	TS1222	145	100	15000	24	0	360000	
161	IXGA24N170A	TS1215	145	100	15000	24	0	360000	
162	IXGF25N250	TP1206	145	100	10000	17	0	170000	
163	IXGH100N30C3	SS1250	145	100	15000	24	0	360000	
164	IXGH30N60C3D1	SK0840	145	100	15000	24	0	360000	
165	IXGH32N60B	TP1205	145	100	15000	24	0	360000	
166	IXGH40N120B2D1	TP0940	145	100	10000	24	0	240000	
167	IXGH40N120C3D1	TK0840	145	100	15000	24	0	360000	
168	IXGH40N60A	TP1304	145	100	15000	24	0	360000	
169	IXGH48N60C3D1	TP1148	145	100	15000	24	0	360000	
170	IXGH60N60C3D1	SS0931	145	100	15000	24	0	360000	
171	IXGH72N60A3	TS1348	145	100	15000	24	0	360000	
172	IXGK120N120B3	TP1143	145	100	15000	24	0	360000	
173	IXGK120N60B3	SP1146	145	100	15000	24	0	360000	
174	IXGP20N120A3	TS0905	145	100	15000	24	0	360000	
175	IXGR72N60C3D1	SP0952	145	100	15000	24	0	360000	

TABLE 3A: MOSFET/IGBT single device

#	Part Number	Date Code or Test #	T _J (max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
176	IXKH35N60C5	3160	125	80	2000	20	0	40000	
177	IXKR47N60C5	3188	145	100	2000	20	0	40000	
178	IXSH45N120	TP1204	145	100	15000	24	0	360000	
179	IXTA02N250	TS1222	145	100	15000	24	0	360000	
180	IXTA76P10T	SS1303	145	100	10000	24	0	240000	
181	IXTA96P085T	SS1223	145	100	10000	24	0	240000	
182	IXTA96P085T	SS1223	145	100	10000	24	0	240000	
183	IXTA96P085T	SS1223	145	100	10000	24	0	240000	
184	IXTH02N450HV	TS1414	145	100	15000	24	0	360000	
185	IXTH12N140	TP1119	145	100	15000	24	0	360000	
186	IXTH12N150	TP1206	145	100	15000	24	0	360000	
187	IXTH140N10P	TS1406	145	100	15000	24	0	360000	
188	IXTH16P60P	TS1316	145	100	15000	24	0	360000	
189	IXTH1N200P3	TP1338	145	100	15000	24	0	360000	
190	IXTH1N200P3HV	TS1404	145	100	15000	24	0	360000	
191	IXTH1N300P3HV	TS1404	145	100	15000	24	0	360000	
192	IXTH1N450HV	TS1404	145	100	15000	24	0	360000	
193	IXTH1R4N250P3HV	TS1413	145	100	15000	24	0	360000	
194	IXTH20N10T	SP1319	145	100	15000	24	0	360000	
195	IXTH20N65X	SS1344	145	100	15000	24	0	360000	
196	IXTH20N65X	SS1344	145	100	15000	24	0	360000	
197	IXTH20P50P	TP1309	145	100	15000	24	0	360000	
198	IXTH250N075T	SP0801	145	100	15000	24	0	360000	
199	IXTH2N150L	TP1317	145	100	15000	24	0	360000	
200	IXTH32N65X	SS1346	145	100	15000	24	0	360000	
201	IXTH360N055T2	SP0926	145	100	15000	24	0	360000	
202	IXTH3N120	TS1136	145	100	10000	24	0	240000	
203	IXTH4N150	TS1151	145	100	15000	24	0	360000	
204	IXTH4N150	TP1149	145	100	15000	24	0	360000	
205	IXTH64N65X	HS1417	145	100	15000	24	0	360000	
206	IXTH6N150	TP1201	145	100	15000	24	0	360000	
207	IXTH80N075L2	TS1419	145	100	15000	24	0	360000	
208	IXTH86N25T	UP1408	145	100	15000	24	0	360000	
209	IXTH96P085T	SS1302	145	100	15000	24	0	360000	
210	IXTK550N055T2	UP1242	145	100	15000	24	0	360000	
211	IXTP02N120P	TS1307	145	100	15000	24	0	360000	
212	IXTP02N120P	TS1307	145	100	15000	24	0	360000	
213	IXTP100N04T2	SS1341	145	100	15000	24	0	360000	
214	IXTP102N15T	K834	145	100	15000	24	0	360000	
215	IXTP110N055T2	SS1332	145	100	15000	24	0	360000	
216	IXTP130N10T	SS1318	145	100	15000	24	0	360000	
217	IXTP15P15T	SS1036	145	100	15000	24	0	360000	
218	IXTP200N055T2	US1310	145	100	15000	24	0	360000	

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
219	IXTP200N055T2	US1414	145	100	15000	77	0	1155000	
220	IXTP20N65X	HS1332	145	100	15000	24	0	360000	
221	IXTP220N04T2	SS1328	145	100	15000	24	0	360000	
222	IXTP22N50PM	SS0924	145	100	15000	24	0	360000	
223	IXTP260N055T2	SS1338	145	100	15000	24	0	360000	
224	IXTP2N100P	TS1332	145	100	15000	24	0	360000	
225	IXTP3N50P	S1048	145	100	15000	24	0	360000	
226	IXTP450P2	GS1352	145	100	15000	24	0	360000	
227	IXTP450P2	GS1411	145	100	15000	24	0	360000	
228	IXTP460P2	GS1421	145	100	15000	24	0	360000	
229	IXTP460P2	GS1421	145	100	15000	24	0	360000	
230	IXTP48P05T	SS1040	145	100	15000	24	0	360000	
231	IXTP76P10T	TS1332	145	100	15000	24	0	360000	
232	IXTP80N10T	SS1150	145	100	15000	24	0	360000	
233	IXTP80N10T	SS1318	145	100	15000	24	0	360000	
234	IXTP80N12T2	SS1043	145	100	15000	24	0	360000	
235	IXTQ130N15T	SS0920	145	100	15000	24	0	360000	
236	IXTQ200N10T	SS1125	145	100	15000	24	0	360000	
237	IXTQ200N10T	SS1125	145	100	15000	24	0	360000	
238	IXTQ36N50P	TS1424	145	100	15000	24	0	360000	
239	IXTQ36N50P	TS1424	145	100	15000	24	0	360000	
240	IXTQ36N50P	TS1424	145	100	15000	24	0	360000	
241	IXTQ44N50P	GS1408	145	100	15000	24	0	360000	
242	IXTQ450P2	SS1225	145	100	15000	24	0	360000	
243	IXTQ82N25P	TS1348	145	100	15000	24	0	360000	
244	IXTQ88N28T	SK0842	145	100	15000	24	0	360000	
245	IXTT60N20L2	TP1005	145	100	10000	24	0	240000	
246	IXTT6N150	TP1203	145	100	15000	24	0	360000	
247	IXTX210P10T	SP1130	145	100	15000	24	0	360000	
248	IXTX24N100	SP0837	145	100	15000	24	0	360000	
249	IXTX60N04T2	SP0945	145	100	15000	24	0	360000	
250	IXTX8N150L	TP0912	145	100	15000	24	0	360000	
251	IXXH50N60B3	SS1105	145	100	15000	24	0	360000	
252	IXXH50N60B3D1	TP1150	145	100	15000	24	0	360000	
253	IXXH50N60C3	SS1105	145	100	15000	24	0	360000	
254	IXXH60N65B4	SP1235	145	100	15000	24	0	360000	
255	IXXH80N65B4H1	SP1319	145	100	15000	24	0	360000	
256	IXXN110N65B4H1	TS1444	145	100	2000	24	0	48000	

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
257	IXYH24N90C3	TS1144	145	100	15000	24	0	360000	
258	IXYH30N450HV	TS1413	145	100	15000	24	0	360000	
259	IXYH40N120C3	TP1137	145	100	15000	24	0	360000	
260	IXYH40N65C3D1	TS1427	145	100	15000	24	0	360000	
261	IXYH40N90C3	TS1205	145	100	15000	24	0	360000	
262	IXYH50N120C3	TP1137	145	100	15000	24	0	360000	
263	IXYH50N65C3D1	TS1424	145	100	15000	24	0	360000	
264	IXYH60N90C3	SS1205	145	100	15000	24	0	360000	
265	IXYH75N65C3	TS1341	145	100	15000	24	0	360000	
266	IXYH75N65C3D1	TS1429	145	100	15000	24	0	360000	
267	IXYH82N120C3	TP1115	145	100	15000	24	0	360000	
268	IXYH82N120C3	TP1115	145	100	15000	24	0	360000	
269	IXYN100N65C3H1	TS1346	145	100	15000	24	0	360000	
270	IXYN82N120C3H1	TP1413	145	100	15000	24	0	360000	
271	IXYP10N65C3D1	TS1401	145	100	15000	24	0	360000	
272	IXYP8N90C3	TS1144	145	100	15000	24	0	360000	
273	IXYT20N120C3D1HV	TS1247	145	100	15000	24	0	360000	
274	IXYX100N120C3	TP1137	145	100	15000	24	0	360000	
275	IXYX40N450HV	TS1414	145	100	15000	24	0	360000	

TABLE 3B: MOSFET/IGBT Module

#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MIX300/450	3751	125	80	70000	10	0	700000	
2	MIXA60HU1200VA	3920	125	80	10000	20	0	200000	
3	MIXA60WB1200TEH	2513	125	80	20000	10	0	200000	
4	MKI450-12E9	2636	125	80	20000	6	0	120000	
5	MKI65A7T	2728	125	80	20000	10	0	200000	
6	MKI75-06A7T	3740	125	80	10000	10	0	100000	
7	VWM270-0075X2	2825	125	80	10000	10	0	100000	

TABLE 3C: Thyristor/Diode Module

#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	MCC162-14io1	2555	125	80	10000	10	0	100000	
2	MCC44-16io1	2221	125	80	10000	10	0	100000	
3	MCC44-16io1B	2989	125	80	10000	10	0	100000	
4	MCMA110P1600TA	3996	125	80	20000	10	0	200000	
5	MCMA35P1400TA	3995	125	80	20000	10	0	200000	
6	MCMA50P1600TA	4098	125	80	20000	10	0	200000	
7	MCMA65P1600TA	3998	125	80	20000	10	0	200000	
8	MCMA85P1600TA	3979	125	80	50000	10	0	500000	
9	MDD172-16	3202	125	80	10000	10	0	100000	
10	MDD26-16	3205	125	80	10000	10	0	100000	
11	MDD56-16N1	2365	125	80	20000	10	0	200000	
12	MDD95-16	3330	125	80	10000	10	0	100000	
13	MDMA85P1600TG	3980	125	80	20000	10	0	200000	

TABLE 3D: Controller, Rectifier Bridge

#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	VUB116-16NOXT	4927	125	80	80000	2	0	160000	
2	VUB116-16NOXT	4927	125	80	10000	10	0	100000	
3	VUO190-12NO7	3590	125	80	2000	10	0	20000	
4	VUO192-16NO7	2615	125	80	5000	10	0	50000	
5	VUO28-08NO7	4746	125	80	2000	10	0	20000	
6	VUO52-16NO1	3001	125	80	5000	10	0	50000	
7	VUO52-16NO1	3234	125	80	5000	10	0	50000	
8	VUO52-16NO1	3656	125	80	5000	10	0	50000	
9	VUO82-16NO7	3463	125	80	2000	10	0	20000	
10	VUO82-16NO7	4028	125	80	2000	10	0	20000	
11	VVZ40-14io1	3103	125	80	5000	10	0	50000	

TABLE 3E: FRED

#	Part Number	Date Code or Test #	Tj(max) [°C]	ΔT [K]	Number of Cycles	Sample Size	Failures	Device Cycles	Remark
1	DH2x61-18A	4848	125	80	5000	20	0	100000	
2	DPG30I400HA	4761	145	100	2000	20	0	40000	
3	DPG60B600LB	4409	150	100	6000	77	0	462000	
4	DPG80C300HB	4132	145	100	2000	20	0	40000	
5	DSEC30-06A	4326	145	100	2000	20	0	40000	
6	DSEC60-06A	3924	145	100	2000	20	0	40000	
7	DSEI2x101-06A	4148	125	80	5000	20	0	100000	
8	DSEI2x61-10B	3815	125	80	500	20	0	10000	
9	DSEI30-12A	3593	145	100	2000	20	0	40000	
10	DSEI60-06A	3719	145	100	2000	20	0	40000	
11	DSEP15-12CR	3606	145	100	2000	20	0	40000	
12	DSEP15-12CR	4128	145	100	2000	20	0	40000	
13	DSEP29-06B	4059	145	100	2000	20	0	40000	
14	DSEP29-06B	4619	145	100	2000	20	0	40000	
15	DSEP2x31-03A	4413	125	80	5000	10	0	50000	
16	DSEP2x61-06A	3603	125	80	5000	10	0	50000	
17	DSEP30-12A	3789	145	100	2000	20	0	40000	
18	DSEP60-12AR	3792	145	100	2000	20	0	40000	

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	DSA30C200PB	4046	145	100	2000	20	0	40000	
2	DSA30I150PA	3185	145	100	2000	20	0	40000	
3	DSA50C150HB	4129	145	100	2000	20	0	40000	
4	DSA70C150HB	2985	145	100	2000	20	0	40000	
5	DSA90C200HB	3716	145	100	2000	20	0	40000	
6	DSA90C200HR	2404	145	100	4000	20	0	80000	
7	DSA90C200HR	4622	145	100	2000	20	0	40000	
8	DSB40C15PB	4657	145	100	2000	20	0	40000	
9	DSSK30-018A	3074	145	100	2000	20	0	40000	
10	DSSK40-0015B	3926	125	80	2000	20	0	40000	
11	DSSK40-008B	3450	145	100	2000	20	0	40000	
12	DSSK50-01A	3349	145	100	2000	20	0	40000	
13	DSSK60-0045B	3592	145	100	2000	20	0	40000	
14	DSSK60-015A	2947	145	100	2000	20	0	40000	
15	DSSK60-02AR	4033	145	100	2000	20	0	40000	
16	DSSK70-0015B	2311	125	80	2000	20	0	40000	
17	DSSK70-0015B	3812	145	100	2000	20	0	40000	
18	DSSK70-008A	4323	145	100	2000	20	0	40000	
19	DSSK80-006B	4775	145	100	2000	20	0	40000	
20	DSSS35-008AR	3714	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	CLA50E1200HB	4651	125	80	2000	20	0	40000	
3	CMA30E1600PB	4050	125	80	2000	20	0	40000	
4	CMA30E1600PB	3658	125	80	2000	20	0	40000	
5	CS20-12io1	2957	125	80	2000	20	0	40000	
6	CS30-16io1	2986	125	80	2000	20	0	40000	
7	CS35-14io4	3090	125	80	2000	10	0	20000	
8	CS45-12io1	3162	125	80	2000	20	0	40000	
9	CSM410LB	4152	145	100	4000	10	0	40000	
10	DAA10P1800PZ	4742	145	100	4000	20	0	80000	
11	DSA1-16D	2471	115	85	2000	20	0	40000	
12	DSA1-18D	3200	115	85	2000	20	0	40000	
13	DSA17-18A	2954	130	100	2000	10	0	20000	
14	DSA17-18A	3857	115	85	2000	10	0	20000	
15	DSA9-18F	3338	115	85	2000	10	0	20000	
16	DSA9-18F	4294	115	85	2000	20	0	40000	
17	DSAI35-16A	3710	145	100	2000	10	0	20000	
18	DSI2x55-16A	4777	125	80	5000	10	0	50000	
19	DSI2x55-16A	3340	125	80	5000	10	0	50000	
20	DSI30-12A	3490	145	100	2000	20	0	40000	
21	DSI45-12A	3227	145	100	2000	20	0	40000	
22	DSI45-16A	3810	145	100	2000	20	0	40000	
23	DSI45-16AR	3348	145	100	2000	20	0	40000	
24	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	FDM47-06KC5	2642	-55	150	100	20	0	2000	
2	GWM160-0055X2 SL	3580	-40	150	1000	77	0	77000	
3	GWM160-0055X2SL	2575	-40	150	1000	77	0	77000	
4	IEA21/36PG1200	3041	-55	150	50	20	0	1000	
5	IEA21PG1200LA	2598	-40	150	1000	20	0	20000	
6	ITF38IF1200HJ	4332	-55	150	100	20	0	2000	
7	IXA12IF1200HB	4650	-40	150	50	20	0	1000	
8	IXA20I200PB	4093	-55	150	50	20	0	1000	
9	IXA20PG1200DHG LB	3581	-40	150	1000	20	0	20000	
10	IXA20PT1200LB	4363	-55	150	100	20	0	2000	
11	IXA20SV1200DHGLA	3211	-40	150	1000	10	0	10000	
12	IXA27IF1200HJ	3376	-55	150	100	20	0	2000	
13	IXA40PG1200DHGLA	3211	-40	150	1000	10	0	10000	
14	IXA55I1200HJ	3743	-55	150	100	20	0	2000	
15	IXA55I200HJ	2389	-40	150	100	20	0	2000	
16	IXA60IF1200NA	2710	-55	150	300	20	0	6000	
17	IXA60IF1200NA	3833	-40	150	50	20	1	1000	I_CES increased
18	IXBH10N300HV	TS1413	-55	150	1000	30	0	30000	
19	IXBH14N300HV	TS1414	-55	150	1000	30	0	30000	
20	IXBH15N160	3946	-55	150	50	20	0	1000	
21	IXBH16N170A	TP1221	-55	150	1000	30	0	30000	
22	IXBH20N360HV	TS1404	-55	150	1000	30	0	30000	
23	IXBH22N300HV	TS1421	-55	150	1000	30	0	30000	
24	IXBH40N160	4403	-55	150	50	20	0	1000	
25	IXBH40N160	3242	-55	150	50	20	0	1000	
26	IXBH40N160	3497	-55	150	50	20	0	1000	
27	IXBH5N160G	4457	-55	150	50	20	0	1000	
28	IXBH5N160G	3076	-55	150	50	20	0	1000	
29	IXBH9N160G	2446	-55	150	50	20	0	1000	
30	IXBH9N160G	2727	-55	150	100	20	0	2000	
31	IXBH9N160G	3712	-55	150	50	20	0	1000	
32	IXBH9N160G	2952	-55	150	50	20	0	1000	
33	IXBT24N170	TP1202	-55	125	1000	30	0	30000	
34	IXBX28N300HV	TS1414	-55	150	1000	30	0	30000	
35	IXBX50N360HV	TS1414	-55	150	1000	30	0	30000	
36	IXDD40SIA	SA1208	-55	150	1000	77	0	77000	
37	IXDH30N120D1	3797	-40	150	50	20	0	1000	
38	IXDH30N120D1	3640	-55	150	50	20	0	1000	
39	IXDH35N60BD1	4972	-40	150	50	20	0	1000	
40	IXDR30N120D1	2442	-55	150	50	20	0	1000	
41	IXEH25N120D1	2542	-55	150	50	20	0	1000	
42	IXFA180N10T2	SS1229	-55	125	250	30	0	7500	
43	IXFA7N60P3	SS1244	-55	125	1000	30	0	30000	
44	IXFB100N50P	TP1110	-55	125	1000	30	0	30000	
45	IXFB100N50P	TP1409	-55	150	1000	25	0	25000	
46	IXFB110N60P3	SP1201	-55	125	1000	30	0	30000	
47	IXFB110N60P3	TS1412	-55	150	1000	25	0	25000	
48	IXFB132N50P3	TP1415	-55	150	1000	25	0	25000	
49	IXFB210N30P3	SP1224	-55	125	1000	30	0	30000	
50	IXFB40N110Q3	TP1405	-55	150	1000	25	0	25000	
51	IXFB40N110Q3	TP1403	-55	150	1000	25	0	25000	
52	IXFB44N100P	TP1404	-55	150	1000	25	0	25000	
53	IXFB60N80PK	TS1349	-55	150	1000	30	0	30000	
54	IXFB60N80PK	TS1349	-55	150	1000	30	0	30000	
55	IXFB62N80Q3	TS1422	-55	150	1000	30	0	30000	
56	IXFB62N80Q3	TS1422	-55	150	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
57	IXFB62N80Q3K	TS1349	-55	150	1000	30	0	30000	
58	IXFB62N80Q3K	TS1349	-55	150	1000	30	0	30000	
59	IXFH12N90	TP1310	-20	90	1000	30	0	30000	
60	IXFH150N17T	US1401	-55	150	1000	30	0	30000	
61	IXFH150N17T2	SS1341	-55	150	1000	30	0	30000	
62	IXFH150N20T	SP1147	-55	125	1000	30	0	30000	
63	IXFH15N100P	TP1202	-55	125	1000	30	0	30000	
64	IXFH160N15T	US1401	-55	150	1000	30	0	30000	
65	IXFH160N15T2	SS1319	-55	125	1000	30	0	30000	
66	IXFH16N50P3	SP1207	-55	125	1000	30	0	30000	
67	IXFH16N60P3	SS1142	-55	125	1000	30	0	30000	
68	IXFH18N90P	TP1202	-55	125	1000	77	0	77000	
69	IXFH20N50P3	SP1141	-55	125	1000	30	0	30000	
70	IXFH22N60P3	SP1318	-55	125	1000	30	0	30000	
71	IXFH22N60P3	GS1429	-55	150	1000	30	0	30000	
72	IXFH26N50	TS1331	-55	150	1000	30	0	30000	
73	IXFH26N50	TS1331	-55	150	1000	30	0	30000	
74	IXFH26N50P3	SS1206	-55	125	1000	30	0	30000	
75	IXFH26N50P3	TP1325	-55	125	1000	20	0	20000	
76	IXFH26N50Q	TS1343	-55	150	1000	30	0	30000	
77	IXFH26N50Q	TS1343	-55	150	1000	30	0	30000	
78	IXFH30N50P	SS1413	-55	150	1000	30	0	30000	
79	IXFH46N30T	US1408	-55	150	1000	30	0	30000	
80	IXFH50N50P3	SS1407	-55	150	1000	30	0	30000	
81	IXFH50N60P3	SP1201	-55	125	1000	30	0	30000	
82	IXFH50N60P3	TS1414	-55	150	1000	30	0	30000	
83	IXFH52N50P2	GS1422	-55	150	1000	30	0	30000	
84	IXFH60N50P3	TP1326	-55	125	1000	30	0	30000	
85	IXFH75N10	SS1219	-55	125	1000	30	0	30000	
86	IXFH76N15T2	US1406	-55	150	1000	30	0	30000	
87	IXFH7N100P	TP1143	-55	125	1000	30	0	30000	
88	IXFH88N30P	TP1237	-55	125	1000	30	0	30000	
89	IXFJ22N60P3	SS1205	-55	125	1000	30	0	30000	
90	IXFK120N25P	TP1239	-55	125	1000	30	0	30000	
91	IXFK140N30P	TP1242	-55	125	1000	30	0	30000	
92	IXFK40N90P	TP1434	-55	150	1000	77	0	77000	
93	IXFK40N90P	TP1444	-55	150	1000	77	0	77000	
94	IXFK44N80P	TP1219	-55	125	1000	25	0	25000	
95	IXFK64N50P	TP1242	-55	125	1000	30	0	30000	
96	IXFK80N60P3	SP1150	-55	125	1000	30	0	30000	
97	IXFK90N50P2	TP1333	-55	125	1000	77	0	77000	
98	IXFK90N50P2	TP1337	-55	150	1000	77	0	77000	
99	IXFK90N50P2	TP1406	-55	150	1000	77	0	77000	
100	IXFK94N50P2	SF1211	-55	125	1000	30	0	30000	
101	IXFN100N25	SS1309	-55	125	1000	30	0	30000	
102	IXFN120N20	SP1211	-55	125	1000	10	0	10000	
103	IXFN120N20	SS1301	-55	125	1000	30	0	30000	
104	IXFN150N15	SS1309	-55	125	1000	30	0	30000	
105	IXFN180N15P	SP1210	-55	125	1000	10	0	10000	
106	IXFN200N10P	SP1212	-55	125	1000	10	0	10000	
107	IXFN32N120P	TP1230	-55	125	1000	30	0	30000	
108	IXFN32N120P-BN	SP1217	-55	125	1000	10	0	10000	
109	IXFN340N07	SP1213	-55	125	1000	10	0	10000	
110	IXFN34N100	SP1111	-55	125	1000	10	0	10000	
111	IXFN360N10T	US1422	-55	150	1000	30	0	30000	
112	IXFN38N100P	SP1204	-55	125	1000	10	0	10000	
113	IXFN38N100P	TP1230	-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	IXFN44N100Q3	SP1207	-55	125	1000	10	0	10000	
115	IXFN44N80	SP1212	-55	125	1000	10	0	10000	
116	IXFN44N80	SP1212	-55	125	1000	30	0	30000	
117	IXFN48N50	TP1212	-55	125	1000	10	0	10000	
118	IXFN64N50P	SP1208	-55	125	1000	10	0	10000	
119	IXFN64N50P	TS1347	-55	150	1000	30	0	30000	
120	IXFN64N60P	SP1206	-55	125	1000	10	0	10000	
121	IXFN80N50P	SP1212	-55	125	1000	10	0	10000	
122	IXFN82N60P	SS1301	-55	125	1000	30	0	30000	
123	IXFN90N30	TS1309	-55	125	1000	30	0	30000	
124	IXFP110N15T2	SS1332	-55	125	500	30	0	15000	
125	IXFP110N15T2	US1351	-55	150	1000	30	0	30000	
126	IXFP14N60P3	SS1144	-55	125	1000	30	0	30000	
127	IXFP16N50P3	GS1419	-55	150	1000	30	0	30000	
128	IXFP170N075T2	US1309	-55	125	1000	30	0	30000	
129	IXFP180N10T2	SS1305	-55	125	1000	30	0	30000	
130	IXFP22N60P3	TS1324	-55	125	1000	30	0	30000	
131	IXFP230N075T2	US1309	-55	125	1000	30	0	30000	
132	IXFP36N30P3	GS1419	-55	150	1000	30	0	30000	
133	IXFP4N60P3	SS1143	-55	125	1000	30	0	30000	
134	IXFP5N50P3	SS1206	-55	125	1000	30	0	30000	
135	IXFP7N60P3	SS1143	-55	125	1000	30	0	30000	
136	IXFQ94N30P3	SS1321	-55	125	1000	30	0	30000	
137	IXFT20N100P	TP1147	-55	125	1000	30	0	30000	
138	IXFT50N60P3	GP1443	-55	150	1000	77	0	77000	
139	IXFX120N25P	2746	-55	150	1000	80	0	80000	
140	IXFX140N25T	US1410	-55	150	1000	30	0	30000	
141	IXFX20N120P	TS1337	-55	150	1000	30	0	30000	
142	IXFX210N17T	SS0912	-55	125	1000	10	0	10000	
143	IXFX230N20T	US1408	-55	150	1000	30	0	30000	
144	IXFX32N100Q3	TP1229	-55	125	1000	30	0	30000	
145	IXFX44N80P	TS1332	-55	125	1000	15	0	15000	
146	IXFX44N80Q3	TP1226	-55	125	1000	30	0	30000	
147	IXFX64N60P	TP1331	-55	125	1000	15	0	15000	
148	IXFX64N60P3	SS1332	-55	125	1000	15	0	15000	
149	IXFX64N60P3	SS1332	-55	125	1000	15	0	15000	
150	IXFX64N60P3	SS1332	-55	125	1000	15	0	15000	
151	IXFX64N60P3	TS1337	-55	150	1000	30	0	30000	
152	IXFX64N60P3	SS1335	-55	125	1000	15	0	15000	
153	IXFX64N60P3	SS1335	-55	125	1000	15	0	15000	
154	IXFX64N60P3	SS1335	-55	125	1000	15	0	15000	
155	IXFX64N60P3	SS1335	-55	125	1000	15	0	15000	
156	IXFX64N60P3	SS1335	-55	125	1000	15	0	15000	
157	IXFX78N50P3	TS1337	-55	150	1000	30	0	30000	
158	IXGA20N100	TS1235	-55	125	1000	30	0	30000	
159	IXGA20N250HV	TS1222	-55	125	1000	20	0	20000	
160	IXGA24N170A	TS1215	-55	125	1000	30	0	30000	
161	IXGF25N250	TP1206	-40	125	1000	20	0	20000	
162	IXGH100N30C3	SS1250	-55	125	250	30	0	7500	
163	IXGH40N120B2D1	TP0940	-55	125	1000	30	0	30000	
164	IXGH40N60A	TP1304	-55	125	1000	30	0	30000	
165	IXGH48N60C3D1	TP1148	-55	125	1000	30	0	30000	
166	IXGH72N60A3	TS1348	-55	150	1000	30	0	30000	
167	IXGK120N60B3	SP1146	-55	125	1000	30	0	30000	
168	IXKH30N60C5	4022	-55	150	100	20	0	2000	
169	IXKH35N60C5	4158	-55	150	50	20	0	1000	
170	IXKH70N60C5	3358	-55	150	50	20	0	1000	

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	IXKP24N60C5M	4319	-55	150	50	20	0	1000	
172	IXKR40N60C	3713	-40	150	50	20	0	1000	
173	IXKR47N60C5	2979	-55	150	50	20	0	1000	
174	IXLF19N250A	4306	-55	150	100	20	0	2000	
175	IXLT2025	3914	-55	150	100	20	0	2000	
176	IXLV1861	3061	-40	150	100	20	0	2000	
177	IXRH25N120	2500	-55	150	100	20	0	2000	
178	IXSH45N120	TP1204	-55	125	1000	30	0	30000	
179	IXSN35N120AU1	TP1208	-55	125	1000	10	0	10000	
180	IXTA05N100	TS1236	-55	125	1000	30	0	30000	
181	IXTA06N120P	TS1247	-55	125	1000	30	0	30000	
182	IXTA200N055T2	SS1223	-55	125	1000	30	0	30000	
183	IXTA2R4N120P	TS1226	-55	125	1000	30	0	30000	
184	IXTA36N30P	SS1241	-55	125	1000	30	0	30000	
185	IXTA3N120	TS1234	-55	125	20	15	0	300	
186	IXTA3N120	TS1234	-55	125	20	50	0	1000	
187	IXTA50N28T	SS1216	-55	125	250	30	0	7500	
188	IXTA80N10T	SS1150	-55	125	1000	77	0	77000	
189	IXTH02N450HV	TS1414	-55	150	1000	30	0	30000	
190	IXTH140N10P	TS1406	-55	150	1000	30	0	30000	
191	IXTH16P60P	TS1316	-55	125	1000	30	0	30000	
192	IXTH1N200P3	TP1338	-55	125	1000	30	0	30000	
193	IXTH1N200P3HV	TS1404	-55	150	1000	30	0	30000	
194	IXTH1N300P3HV	TS1404	-55	150	1000	30	0	30000	
195	IXTH1N450HV	TS1404	-55	150	1000	30	0	30000	
196	IXTH1R4N250P3HV	TS1413	-55	150	1000	30	0	30000	
197	IXTH200N10T	SP1319	-55	125	1000	30	0	30000	
198	IXTH20N65X	SS1344	-55	150	1000	30	0	30000	
199	IXTH20P50P	TP1309	-55	125	1000	30	0	30000	
200	IXTH2N150L	TP1317	-55	150	1000	30	0	30000	
201	IXTH32N65X	SS1346	-55	150	1000	30	0	30000	
202	IXTH3N120	TS1136	-55	125	1000	30	0	30000	
203	IXTH40N30	SS1248	-55	125	1000	30	0	30000	
204	IXTH48P20P	SP1049	-55	125	1000	30	0	30000	
205	IXTH4N150	TS1151	-55	125	1000	30	0	30000	
206	IXTH4N150	TP1149	-55	125	1000	30	0	30000	
207	IXTH64N65X	HS1417	-55	150	1000	30	0	30000	
208	IXTH6N100D2	TP1202	-55	125	1000	30	0	30000	
209	IXTH6N150	TP1201	-55	125	1000	30	0	30000	
210	IXTH76P10T	SS1052	-55	125	1000	30	0	30000	
211	IXTH80N075L2	TS1419	-55	150	1000	30	0	30000	
212	IXTH86N25T	UP1408	-55	150	1000	30	0	30000	
213	IXTH96P085T	SS1302	-55	125	1000	30	0	30000	
214	IXTK550N055T2	UP1242	-55	125	1000	30	0	30000	
215	IXTL2N450	TP1239	-40	125	1000	30	0	30000	
216	IXTN210P10T	SP1215	-55	125	1000	10	0	10000	
217	IXTN40P50P	SP1212	-55	125	1000	10	0	10000	
218	IXTP02N120P	TS1307	-55	150	1000	30	0	30000	
219	IXTP05N100M	TS1245	-55	125	1000	30	0	30000	
220	IXTP100N04T2	SS1341	-55	150	1000	30	0	30000	
221	IXTP110N055T2	SS1332	-55	150	1000	30	0	30000	
222	IXTP130N10T	SS1318	-55	125	1000	30	0	30000	
223	IXTP200N055T2	US1310	-55	125	1000	30	0	30000	
224	IXTP200N055T2	US1414	-55	150	1000	77	0	77000	
225	IXTP20N65X	HS1332	-55	125	1000	30	0	30000	
226	IXTP220N04T2	SS1328	-55	125	1000	30	0	30000	
227	IXTP260N055T2	SS1338	-55	150	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	IXTP2N100P	TS1332	-55	150	1000	30	0	30000	
229	IXTP2N100P	TS1332	-55	150	1000	30	0	30000	
230	IXTP450P2	GS1352	-55	150	1000	30	0	30000	
231	IXTP450P2	GS1411	-55	150	1000	30	0	30000	
232	IXTP460P2	TS1332	-55	125	500	30	0	15000	
233	IXTP460P2	GS1421	-55	150	1000	30	0	30000	
234	IXTP460P2	GS1421	-55	150	1000	30	0	30000	
235	IXTP50N28T	US1426	-55	150	1000	30	0	30000	
236	IXTP76P10T	TS1332	-55	125	500	30	0	15000	
237	IXTP80N10T	SS1150	-55	125	1000	30	0	30000	
238	IXTP80N10T	SS1318	-55	125	1000	30	0	30000	
239	IXTQ200N10T	SS1125	-55	125	100	30	0	3000	
240	IXTQ200N10T	SS1125	-55	125	100	30	0	3000	
241	IXTQ36N50P	TS1424	-55	150	1000	30	0	30000	
242	IXTQ36N50P	TS1424	-55	150	1000	30	0	30000	
243	IXTQ36N50P	TS1424	-55	150	1000	30	0	30000	
244	IXTQ44N50P	GS1408	-55	150	1000	30	0	30000	
245	IXTQ460P2	SS1236	-55	125	1000	16	0	16000	
246	IXTQ82N25P	TS1348	-55	150	1000	30	0	30000	
247	IXTT12N150	TP1206	-55	125	1000	30	0	30000	
248	IXTT6N150	TP1203	-55	125	1000	30	0	30000	
249	IXTV03N400S	TP1134	-55	125	1000	30	0	30000	
250	IXTX200N10L2	TP1137	-55	125	1000	30	0	30000	
251	IXTY01N100D	TS1014	-55	125	1000	30	0	30000	
252	IXXH50N60B3D1	TP1150	-55	125	1000	30	0	30000	
253	IXXH60N65B4	SP1235	-55	125	1000	30	0	30000	
254	IXXH60N65C4	SP1236	-55	125	1000	30	0	30000	
255	IXXH80N65B4H1	SP1319	-55	125	1000	30	0	30000	
256	IXYH30N450HV	TS1413	-55	150	1000	30	0	30000	
257	IXYH40N120C3	TP1137	-55	125	1000	30	0	30000	
258	IXYH40N65C3D1	TS1427	-55	150	1000	30	0	30000	
259	IXYH40N90C3	TS1205	-55	125	1000	30	0	30000	
260	IXYH50N65C3D1	TS1424	-55	150	1000	30	0	30000	
261	IXYH60N90C3	SS1205	-55	125	1000	30	0	30000	
262	IXYH75N65C3	TS1341	-55	150	1000	30	0	30000	
263	IXYH75N65C3D1	TS1429	-55	150	1000	30	0	30000	
264	IXYH80N90C3	TP1205	-55	125	1000	30	0	30000	
265	IXYT20N120C3D1HV	TS1247	-55	125	1000	30	0	30000	
266	IXYX40N450HV	TS1414	-55	150	1000	30	0	30000	
267	MMIX1N64N300	TP1137	-40	125	1000	10	0	10000	
268	MTI200WX75GD-SMD	4372	-55	150	1000	7	0	7000	

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	MID550-12A4	4203	-40	150	50	10	0	500	
2	MID75-12A3	3832	-40	150	50	20	0	1000	
3	MIXA100PM650TMI	4021	-40	150	25	10	0	250	
4	MIXA150Q1200VA	3861	-40	150	50	10	0	500	
5	MIXA30WB1200TED	3804	-40	150	50	10	0	500	
6	MIXA40WB1200TED	4543	-40	150	100	10	0	1000	
7	MIXA40WB1200TED	4543	-40	150	100	10	0	1000	
8	MIXA40WB1200TED	4732	-40	150	100	20	0	2000	
9	MIXA40WB1200TED	4732	-40	150	100	20	0	2000	
10	MIXA80WB1200TEH	4800	-40	150	100	10	0	1000	
11	MIXA81WB1200TEH	4012	-40	150	100	10	0	1000	
12	MIXD200W650TEH	4421	-40	150	100	10	0	1000	
13	MIXD80PM650TMI	4249	-40	150	100	10	0	1000	
14	MKI75-12E8	3599	-40	150	50	10	0	500	
15	MUBW15-12A6K	4872	-40	150	100	12	0	1200	
16	MUBW35-06A6K	3827	-40	150	25	10	0	250	
17	MUBW50-17T8	3784	-40	150	50	10	0	500	
18	VKM60-01P1	4030	-40	150	10	10	0	100	
19	VMM90-09F	4405	-40	150	100	10	0	1000	
20	VMM90-09P	4405	-40	150	100	10	0	1000	

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	CSM400A	2501	-40	150	100	10	0	1000	
2	CSM400A	2847	-25	85	1000	10	0	10000	
3	CSM400A	3333	-40	150	25	10	0	250	
4	CSM400A	4834	-40	150	50	20	0	1000	
5	MCC162-16	2451	-40	150	50	10	0	500	
6	MCC21-14io8	2617	-40	150	50	10	0	500	
7	MCC225-14	3102	-40	150	50	10	0	500	
8	MCC255-14io1	4935	-40	150	100	10	0	1000	
9	MCC26-14	3104	-40	150	50	10	0	500	
10	MCC312	2865	-40	150	100	10	0	1000	
11	MCC312-16	3470	-40	150	50	10	0	500	
12	MCC312-16io1	4065	-40	150	50	10	0	500	
13	MCC44-16io1	2770	-40	150	100	20	0	2000	
14	MCC56-16	3881	-40	150	100	10	0	1000	
15	MCC56-16io1B	3275	-40	150	50	10	0	500	
16	MCC56-16io1B	4097	-40	150	50	10	0	500	
17	MCC95-14	2902	-40	150	50	10	0	500	
18	MCC95-16	3510	-40	150	50	10	0	500	
19	MCC95-16io1	2450	-40	150	50	10	0	500	
20	MCC95-18io1B	4610	-40	150	50	10	0	500	
21	MCD225-14	4417	-40	150	50	9	0	450	
22	MCD95-16io1	3943	-40	150	50	10	0	500	
23	MDD175-28N1	3622	-40	150	50	6	0	300	
24	MDD175-28N1	4602	-40	150	50	10	0	500	
25	MDD312-16N1	3274	-40	150	50	10	0	500	
26	MDD95	4115	-40	150	50	10	0	500	
27	MDD95	4844	-40	150	50	10	0	500	
28	MDD95-22N1B	3600	-40	150	50	10	0	500	
29	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	MDNA900U1600PTEH-F	4863	-40	150	100	10	0	1000	
2	VBO21-12NO7	3586	-40	150	10	10	0	100	
3	VHF36-12io5	3645	-40	150	25	10	0	250	
4	VUB116-16NOXT	4174	-40	150	50	10	0	500	
5	VUB145-16NOXT	4797	-40	150	50	10	0	500	
6	VUM33-05N	3779	-40	150	100	20	0	2000	
7	VUM33-06PH	3780	-40	150	100	20	0	2000	
8	VUO121-16NO1	3889	-40	150	100	10	0	1000	
9	VUO34-20NO1	4710	40	150	50	11	0	550	
10	VUO36-12NO8	3807	-40	150	10	10	0	100	
11	VUO52-16NO1	3732	-40	150	50	10	0	500	
12	VUO52-16NO1	3846	-40	150	50	10	0	500	
13	VUO52-16NO1	3887	-40	150	50	10	0	500	
14	VUO52-16NO1	3887	-40	150	50	10	0	500	
15	VUO52-16NO1	4534	-40	150	25	10	0	250	
16	VUO80-16NO1	3944	-40	150	20	10	0	200	
17	VVY50-16io1	4116	-40	150	25	10	0	250	
18	VVZ40-14io1	4425	-40	150	25	10	0	250	
19	VVZB120-14io2	3769	-40	150	25	10	0	250	

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	DFE10I600PM	4767	-55	150	50	20	0	1000	
2	DFE30I600QM	4819	-40	150	100	20	0	2000	
3	DH2x60-18A	3770	-40	150	100	20	0	2000	
4	DHG100x1200NA	4646	40	150	50	20	0	1000	
5	DHG100x1200NA	4646	-40	150	50	20	0	1000	
6	DHG10C600PB	3883	-55	150	100	20	0	2000	
7	DPG30C300HB	4131	-55	150	50	20	0	1000	
8	DPG30C400HB	4044	-55	150	50	20	0	1000	
9	DPG60C200HB	3718	-55	150	50	20	0	1000	
10	DPG60C300HB	3957	-55	150	100	40	0	4000	
11	DPG60C300HJ	4125	-55	150	50	20	0	1000	
12	DSEC120-12AK	4438	-55	150	100	20	0	2000	
13	DSEC16-06AC	3798	-55	150	50	20	0	1000	
14	DSEC29-06AC	4429	-55	150	100	40	0	4000	
15	DSEI12-06A	3934	-40	150	50	20	0	1000	
16	DSEI12-12A	4545	-40	150	100	40	0	4000	
17	DSEI2x101-06A	4147	-40	150	20	20	0	400	
18	DSEI2x101-12A	4930	-40	150	20	20	0	400	
19	DSEI2x101-12A	3711	-40	150	20	20	0	400	
20	DSEI2x101-12A	3964	-40	150	50	20	0	1000	
21	DSEI2x61-06A	3602	-40	150	20	20	0	400	
22	DSEI30-06A	4455	-40	150	50	20	0	1000	
23	DSEI30-06A	4624	-40	150	50	20	0	1000	
24	DSEI30-10A	4327	-40	150	50	20	0	1000	
25	DSEI101-12P	4744	-40	150	10	10	0	100	
26	DSEP15-12CR	3930	-55	150	50	20	0	1000	
27	DSEP2x25-12C	4045	-40	150	20	20	0	400	
28	DSEP2x31-03A	4414	-40	150	20	20	0	400	
29	DSEP30-12AR	3793	-55	150	50	20	0	1000	
30	DSEP60-06AT	3764	-55	150	100	20	0	2000	
31	MEE250-12DA	4435	-40	150	100	10	0	1000	
32	MEE250-12DA	4105	-40	150	50	10	0	500	
33	MEE250-12DA "H"	3886	-40	150	100	10	0	1000	
34	MEE250-12DA "H"	3886	-40	150	100	10	0	1000	
35	MEE75-12DA	4709	40	150	50	11	0	550	
36	MEQ550-02DA	4396	-40	150	50	10	0	500	
37	MEQ550-02DA	3967	-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	DSA20C150PB	4209	-55	150	100	20	0	2000	
3	DSA300I100NA	2848	-40	150	50	10	0	500	
4	DSA30C150HB	4322	-55	150	50	20	0	1000	
5	DSA30I150PA	3182	-55	150	50	20	0	1000	
6	DSA50C100HB	2448	-55	150	100	20	0	2000	
7	DSA60C100PB	2456	-55	150	50	20	0	1000	
8	DSA60C150PB	2577	-55	150	100	20	0	2000	
9	DSA70C100HB	3717	-55	150	50	20	0	1000	
10	DSA70C150HB	4762	150	150	-55	20	0	-1100	
11	DSA70C150HB	4035	-55	150	50	20	0	1000	
12	DSA90C200HB	4127	-55	150	50	20	0	1000	
13	DSA90C200HB	2803	-55	150	100	20	0	2000	
14	DSA90C200HB	3347	-55	150	50	20	0	1000	
15	DSA90C200HR	2622	-55	150	100	20	0	2000	
16	DSA90C200HR	2404	-55	150	100	20	0	2000	
17	DSB30C30PB	3935	-55	150	50	20	0	1000	
18	DSB60C30PB	2495	-55	150	100	20	0	2000	
19	DSB60C45HB	4493	-55	150	50	20	0	1000	
20	DSS2x101-015A	2774	-40	150	50	20	0	1000	
21	DSSK20-015A	2539	-55	150	50	20	0	1000	
22	DSSK30-018A	3791	-55	150	50	20	0	1000	
23	DSSK30-18A	2880	-55	150	50	20	0	1000	
24	DSSK60-015A	2975	-55	150	50	20	0	1000	
25	DSSK60-015A	4616	-55	150	50	20	0	1000	
26	DSSK60-015AR	2772	-55	150	100	20	0	2000	
27	DSSK60-02A	3452	-55	150	50	20	0	1000	
28	DSSK70-008A	3073	-55	150	50	20	0	1000	
29	DSSK80-006B	3609	-55	150	50	20	0	1000	
30	DSSS35-008AR	3445	-55	150	50	20	0	1000	
31	DSSS35-008AR	4458	-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	CLA60PD1200NA	4160	-40	150	50	20	0	1000	
2	CLF20E1200PB	4039	-55	150	50	20	0	1000	
3	CMA80E1600HB	3976	-55	150	100	20	0	2000	
4	CMA80E1600HB	3976	-55	150	100	40	0	4000	
5	CS1710	3901	-40	150	100	40	0	4000	
6	CS19-12H01	3737	-40	150	50	20	0	1000	
7	CS20-22MO F1	4017	-55	150	50	20	0	1000	
8	CS22-08io1M	3800	-55	150	50	20	0	1000	
9	CS30-12io1	4829	-55	150	100	20	0	2000	
10	CS30-16io1	4318	-55	150	50	20	0	1000	
11	CSM410LB	3818	-40	150	1300	60	0	78000	
12	CSM410LB	4152	-55	150	100	20	0	2000	
13	DAA10P1800PZ	4742	-55	150	100	20	0	2000	
14	DLA100B1200LB	4351	-55	150	1000	80	0	80000	
15	DLA100B1200LB	4178	-55	150	50	20	0	1000	
16	DLA60H1200HA	4617	-55	150	50	20	0	1000	
17	DMA30E1600HA	4451	-55	150	100	20	0	2000	
18	DMB30E188HA	4451	-55	150	100	20	0	2000	
19	DSA1-16D	4440	-40	150	50	40	0	2000	
20	DSA17-18A	3855	-40	150	20	10	0	200	
21	DSA17-18A	4735	-40	150	20	10	0	200	
22	DSA75-16B	4505	-40	150	50	20	0	1000	
23	DSA75-16B	4506	-40	150	50	20	0	1000	
24	DSA75-18B	3923	-40	150	20	10	0	200	
25	DSA9-18	4143	-40	150	20	10	0	200	
26	DSA9-18F	4293	-40	150	20	10	0	200	
27	DSAI17-16A	3641	-40	150	20	10	0	200	
28	DSAI35-16A	3709	-40	150	20	10	0	200	
29	DSI2x55-12A	4316	-40	150	20	20	0	400	
30	DSI30-08A	4501	-55	150	50	20	0	1000	
31	DSI45-16A	4969	-55	150	50	20	0	1000	
32	DSI45-16AR	4958	-55	150	100	20	0	2000	
33	DSI45-16AR	4625	-55	150	50	20	0	1000	
34	DSP26-16AT	3835	-40	150	100	20	0	2000	
35	DSP45-12A	4141	-55	150	50	20	0	1000	
36	DSP45-12A	4878	-40	150	100	20	0	2000	
37	DSP45-16AR	4764	-55	150	50	20	0	1000	

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	IXBOD1-08	4750	-40	150	50	20	0	1000	
4	IXBOD1-09	4042	-40	150	50	20	0	1000	
5	IXBOD1-10	2436	-40	150	50	20	0	1000	
6	IXBOD1-10	3722	-40	150	50	20	0	1000	
7	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	GWM160-0055 X2 SL	4542	121	100	96	20	0	1920	
2	GWM160-0055X1SL	2786	121	100	96	20	0	1920	
3	GWM160-0055X2 S	3455	121	100	96	77	0	7392	
4	GWM160-0055X2 SL	3580	121	100	96	77	0	7392	
5	IXA12IF1200HB	4411	121	100	48	20	0	960	
6	IXA12IF1200TC	3543	121	100	96	20	0	1920	
7	IXA20PT1200LB	4363	121	100	96	20	0	1920	
8	IXA551200HJ	3743	121	100	96	20	0	1920	
9	IXA55200HJ	2389	121	100	96	20	0	1920	
10	IXA60IF1200NA	2710	121	100	96	20	1	1920	I_CES increased
11	IXBF55N300	TP1243	121	100	96	30	0	2880	
12	IXBH10N300HV	TS1413	121	100	96	30	0	2880	
13	IXBH14N300HV	TS1414	121	100	96	30	0	2880	
14	IXBH16N170A	TP1221	121	100	96	30	0	2880	
15	IXBH20N360HV	TS1404	121	100	96	30	0	2880	
16	IXBH22N300HV	TS1421	121	100	96	30	0	2880	
17	IXBH40N160	3932	121	100	48	20	0	960	
18	IXBP5N160G	2454	121	100	48	20	0	960	
19	IXBT24N170	TP1202	121	100	96	30	0	2880	
20	IXBX28N300HV	TS1414	121	100	96	30	0	2880	
21	IXDH30N120D1	4975	121	100	48	20	0	960	
22	IXDH35N60BD1	4973	121	100	48	20	0	960	
23	IXDH35N60BD1	3161	121	100	48	20	0	960	
24	IXDN75N120	2566	121	100	168	20	0	3360	
25	IXFB110N60P3	TS1412	121	100	96	25	0	2400	
26	IXFB132N50P3	TP1415	121	100	96	25	0	2400	
27	IXFB210N30P3	SP1224	121	100	96	30	0	2880	
28	IXFB40N110Q3	TP1405	121	100	96	25	0	2400	
29	IXFB60N80PK	TS1349	121	100	96	30	0	2880	
30	IXFB62N80Q3K	TS1349	121	100	96	30	0	2880	
31	IXFH120N25T	SP1141	121	100	96	77	0	7392	
32	IXFH150N17T	US1401	121	100	96	30	0	2880	
33	IXFH150N17T2	SS1341	121	100	96	30	0	2880	
34	IXFH150N20T	SP1147	121	100	96	30	0	2880	
35	IXFH160N15T	US1401	121	100	96	30	0	2880	
36	IXFH160N15T2	SS1319	121	100	96	30	0	2880	
37	IXFH16N50P3	SP1207	121	100	96	30	0	2880	
38	IXFH18N100Q3	SP1136	121	100	96	30	0	2880	
39	IXFH22N60P3	GS1429	121	100	96	30	0	2880	
40	IXFH26N50	TS1331	121	100	96	30	0	2880	
41	IXFH26N50P3	SS1206	121	100	96	30	0	2880	
42	IXFH26N50Q	TS1343	121	100	96	30	0	2880	
43	IXFH30N50P	SS1413	121	100	96	21	0	2016	
44	IXFH46N30T	US1408	121	100	96	30	0	2880	
45	IXFH50N50P3	SS1407	121	100	96	30	0	2880	
46	IXFH50N60P3	TS1414	121	100	96	30	0	2880	
47	IXFH52N50P2	GS1422	121	100	96	30	0	2880	
48	IXFH70N30Q3	SP1133	121	100	96	30	0	2880	
49	IXFH75N10	SS1219	121	100	96	30	0	2880	
50	IXFH76N15T2	US1406	121	100	96	30	0	2880	
51	IXFH7N100P	TP1143	121	100	96	30	0	2880	
52	IXFH94N30T	SP1141	121	100	96	77	0	7392	
53	IXFJ75N10	TS1219	121	100	96	30	0	2880	
54	IXFK120N25P	TP1239	121	100	96	30	0	2880	
55	IXFK40N90P	TP1434	121	100	96	77	0	7392	
56	IXFK40N90P	TP1444	121	100	96	77	0	7392	
57	IXFK44N80P	TP1219	121	100	96	30	0	2880	
58	IXFK64N50P	TP1242	121	100	96	30	0	2880	

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
59	IXFK80N60P3	SP1150	121	100	96	77	0	7392	
60	IXFK90N50P2	TP1333	121	100	96	77	0	7392	
61	IXFK90N50P2	TP1337	121	100	96	77	0	7392	
62	IXFK90N50P2	TP1406	121	100	96	77	0	7392	
63	IXFK94N50P2	SF1211	121	100	96	30	0	2880	
64	IXFK94N50P2	SP1111	121	100	96	77	0	7392	
65	IXFK98N50P3	SP1142	121	100	96	25	0	2400	
66	IXFN100N25	SS1309	121	100	96	30	0	2880	
67	IXFN120N20	SS1301	121	100	96	30	0	2880	
68	IXFN150N15	SS1309	121	100	96	30	0	2880	
69	IXFN360N10T	US1422	121	100	96	30	0	2880	
70	IXFN64N50P	TS1347	121	100	96	30	0	2880	
71	IXFN82N60P	SS1301	121	100	96	30	0	2880	
72	IXFN90N30	TS1309	121	100	96	30	0	2880	
73	IXFP110N15T2	SS1332	121	100	96	30	0	2880	
74	IXFP16N50P3	GS1419	121	100	96	30	0	2880	
75	IXFP180N10T2	SS1305	121	100	96	30	0	2880	
76	IXFP230N075T2	US1309	121	100	96	30	0	2880	
77	IXFP36N30P3	GS1419	121	100	96	30	0	2880	
78	IXFP5N50P3	SS1206	121	100	96	30	0	2880	
79	IXFQ94N30P3	SS1321	121	100	96	30	0	2880	
80	IXFT20N100P	TP1147	121	100	96	30	0	2880	
81	IXFT50N60P3	GP1443	121	100	96	77	0	7392	
82	IXFX120N25P	2746	121	100	96	80	0	7680	
83	IXFX140N25T	US1410	121	100	96	30	0	2880	
84	IXFX20N120P	TS1337	121	100	96	30	0	2880	
85	IXFX230N20T	US1408	121	100	96	30	0	2880	
86	IXFX44N80Q3	TP1226	121	100	96	30	0	2880	
87	IXFX64N60P3	TS1337	121	100	96	30	0	2880	
88	IXFX78N50P3	TS1337	121	100	96	30	0	2880	
89	IXFX80N50Q3	SP1106	121	100	96	30	0	2880	
90	IXGH100N30C3	SS1250	121	100	96	30	0	2880	
91	IXGH40N120B2D1	TP0940	121	100	96	30	0	2880	
92	IXGH48N60C3D1	TP1148	121	100	96	30	0	2880	
93	IXGH50N60C4	SP1133	121	100	96	30	0	2880	
94	IXGH72N60A3	TS1348	121	100	96	30	0	2880	
95	IXGK120N120B3	TP1143	121	100	96	30	0	2880	
96	IXKN75N60C	2955	121	100	48	20	0	960	
97	IXLT2025	3914	121	100	96	20	0	1920	
98	IXTH02N450HV	TS1414	121	100	96	30	0	2880	
99	IXTH140N10P	TS1406	121	100	96	30	0	2880	
100	IXTH16P60P	TS1316	121	100	96	30	0	2880	
101	IXTH1N200P3	TP1338	121	100	96	30	0	2880	
102	IXTH1N200P3HV	TS1404	121	100	96	30	0	2880	
103	IXTH1N300P3HV	TS1404	121	100	96	30	0	2880	
104	IXTH1N450HV	TS1404	121	100	96	30	0	2880	
105	IXTH1R4N250P3HV	TS1413	121	100	96	30	0	2880	
106	IXTH200N10T	SP1208	121	100	96	30	0	2880	
107	IXTH200N10T	SP1319	121	100	96	30	0	2880	
108	IXTH20N65X	SS1344	121	100	96	30	0	2880	
109	IXTH20P50P	TP1309	121	100	96	30	0	2880	
110	IXTH2N150L	TP1317	121	100	96	30	0	2880	
111	IXTH32N65X	SS1346	121	100	96	30	0	2880	
112	IXTH3N120	TS1136	121	100	96	30	0	2880	
113	IXTH4N150	TS1151	121	100	96	30	0	2880	
114	IXTH64N65X	HS1417	121	100	96	30	0	2880	
115	IXTH80N075L2	TS1419	121	100	96	30	0	2880	

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
116	IXTH86N25T	UP1408	121	100	96	30	0	2880	
117	IXTH96P085T	SS1302	121	100	96	30	0	2880	
118	IXTK550N055T2	UP1242	121	100	96	30	0	2880	
119	IXTP100N04T2	SS1341	121	100	96	30	0	2880	
120	IXTP110N055T2	SS1332	121	100	96	30	0	2880	
121	IXTP130N10T	SS1318	121	100	96	30	0	2880	
122	IXTP200N055T2	US1310	121	100	96	30	0	2880	
123	IXTP200N055T2	US1310	121	100	96	30	0	2880	
124	IXTP200N055T2	US1414	121	100	96	77	0	7392	
125	IXTP20N65X	HS1332	121	100	96	30	0	2880	
126	IXTP260N055T2	SS1338	121	100	96	30	0	2880	
127	IXTP2N100P	TS1332	121	100	96	30	0	2880	
128	IXTP450P2	GS1352	121	100	96	30	0	2880	
129	IXTP450P2	GS1411	121	100	96	30	0	2880	
130	IXTP460P2	TS1332	121	100	96	30	0	2880	
131	IXTP460P2	GS1421	121	100	96	30	0	2880	
132	IXTP460P2	GS1421	121	100	96	30	0	2880	
133	IXTP50N28T	US1426	121	100	96	30	0	2880	
134	IXTP76P10T	TS1332	121	100	96	30	0	2880	
135	IXTP80N10T	SS1150	121	100	96	30	0	2880	
136	IXTP80N10T	SS1318	121	100	96	30	0	2880	
137	IXTQ200N10T	SS1125	121	100	96	30	0	2880	
138	IXTQ200N10T	SS1125	121	100	96	30	0	2880	
139	IXTQ44N50P	GS1408	121	100	96	30	0	2880	
140	IXTQ460P2	SS1236	121	100	96	30	0	2880	
141	IXTQ82N25P	TS1348	121	100	96	30	0	2880	
142	IXTT12N150	TP1206	121	100	96	30	0	2880	
143	IXTT140P10T	SP1142	121	100	96	77	0	7392	
144	IXTT6N150	TP1203	121	100	96	30	0	2880	
145	IXTX120P20T	SP1133	121	100	96	30	0	2880	
146	IXXH50N60B3D1	TP1150	121	100	96	30	0	2880	
147	IXXH60N65B4	SP1235	121	100	96	30	0	2880	
148	IXXH60N65C4	SP1236	121	100	96	30	0	2880	
149	IXYH30N450HV	TS1413	121	100	96	30	0	2880	
150	IXYH40N90C3	TS1205	121	100	96	30	0	2880	
151	IXYH60N90C3	SS1205	121	100	96	30	0	2880	
152	IXYH75N65C3	TS1341	121	100	96	30	0	2880	
153	IXYH80N90C3	TP1205	121	100	96	30	0	2880	
154	IXYN100N65C3H1	TS1346	121	100	96	30	0	2880	
155	IXYT20N120C3D1HV	TS1247	121	100	96	30	0	2880	
156	IXYX40N450HV	TS1414	121	100	96	30	0	2880	
157	MCB6011200TZ	4913	121	100	96	10	0	960	

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	MIX300/450	3751	85	85	96	10	0	960	
2	MIXA150Q1200VA	3861	85	85	1000	10	0	10000	
3	MIXA225PF1200TSF	3825	85	85	168	9	0	1512	
4	MIXA40WB1200TED	4543	85	85	1000	10	0	10000	
5	MIXA40WB1200TED	4543	85	85	1000	10	0	10000	
6	MIXA60WB1200TEH	2514	85	85	1000	10	0	10000	
7	MIXA60WB1200TEH	4155	85	85	1000	10	0	10000	
8	MIXA80WB1200TEH	4800	85	85	1000	10	0	10000	
9	MIXA81WB1200TEH	4538	85	85	1000	10	0	10000	
10	MIXD80PM650TMI	4249	85	85	1000	10	0	10000	
11	MKI450-12E9	2636	85	85	1000	6	0	6000	
12	MWI100-12E8	3676	85	85	168	10	0	1680	
13	VKM60-01P1	3589	85	85	168	10	0	1680	
14	VMM90-09F	3216	85	85	168	10	0	1680	
15	VMO1200-01F	2480	85	85	168	10	0	1680	
16	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	CSM400A	2847	85	85	1000	10	0	10000	
2	CSM400A	4851	85	85	168	10	0	1680	
3	MCC21-14io8	3885	85	85	168	10	0	1680	
4	MCC501-16io1	2415	85	85	1000	3	0	3000	
5	MCD162	3465	85	85	1000	5	0	5000	
6	MCD162-16	3471	85	85	168	10	0	1680	
7	MCD162-16io1	2482	85	85	168	10	0	1680	
8	MDD95-18N1B	4708	85	85	168	20	0	3360	

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	VUB116-16NOXT	4927	85	85	1000	10	0	10000	
3	VUB145-16NOXT	4154	85	85	1000	10	0	10000	
4	VUE22-06NO7	4027	85	85	168	10	0	1680	
5	VUO192-16NO7	2615	85	85	1000	10	0	10000	
6	VUO36-16NO8	4916	85	85	168	10	0	1680	
7	VUO52-16NO1	2563	85	85	168	10	0	1680	
8	VUO52-16NO1	3887	85	85	1000	10	0	10000	
9	VUO52-16NO1	3887	85	85	1000	10	0	10000	
10	VVZB120-14io2	3902	85	85	168	10	0	1680	
11	VVZB135-16ioXT	4210	85	85	168	10	0	1680	
12	VVZB170ioXT	4590	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	MEE250-12DA "H"	3886	85	85	1000	10	0	10000	
2	MEE250-12DA "H"	3886	85	85	1000	10	0	10000	
3	MEQ450-12	4202	85	85	168	10	0	1680	
4	MEQ500-06DA	3963	85	85	168	10	0	1680	
5	DHG100x1200NA	4646	121	100	96	20	0	1920	
6	DHG2011200PA	4620	121	100	96	20	0	1920	
7	DHG40C1200HB	3811	121	100	48	20	0	960	
8	DHG6011200HA	2518	121	100	96	20	0	1920	
9	DHG601600HA	4513	121	100	96	20	0	1920	
10	DPF60C300HB	2395	121	100	96	20	0	1920	
11	DPG30C400HB	2831	121	100	96	20	0	1920	
12	DPG60B600LB	4409	121	100	96	77	0	7392	
13	DPG60C300HB	3957	121	100	96	40	0	3840	
14	DPG80C400HB	2396	121	100	96	20	0	1920	
15	DSEC120-12AK	4438	121	100	96	20	0	1920	
16	DSEC29-06AC	4429	121	100	96	40	0	3840	
17	DSEC60-06B	3095	121	100	48	20	0	960	
18	DSEE55-24N1F	2627	121	100	48	20	0	960	
19	DSEI12-12A	4545	121	100	96	40	0	3840	
20	DSEI2x101-12A	3222	121	100	48	20	0	960	
21	DSEI2x101-12A	3325	121	100	96	20	0	1920	
22	DSEI2x31-12B	4951	121	100	48	20	0	960	
23	DSEI2x61-12B	3953	121	100	48	20	0	960	
24	DSEI30-06A	2949	121	100	48	20	0	960	
25	DSEI60-06A	4845	121	100	48	20	0	960	
26	DSEI60-10A	2439	121	100	168	20	0	3360	
27	DSEP15-06A	3002	121	100	96	20	0	1920	
28	DSEP15-12CR	3097	121	100	48	20	0	960	
29	DSEP29-06B	4060	121	100	48	20	0	960	
30	DSEP30-06BR	4032	121	100	48	20	0	960	
31	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	DSA30C200PB	4047	121	100	48	20	0	960	
3	DSA60C100PB	2456	121	100	48	20	0	960	
4	DSA90C200HB	4846	121	100	48	20	0	960	
5	DSB40C15PB	4658	121	100	48	20	0	960	
6	DSSK60-015AR	2772	121	100	96	20	0	1920	
7	DSSK60-015AR	4977	121	100	48	20	0	960	
8	DSSK60-02A	3790	121	100	96	20	0	1920	
9	DSSK80-006B	3351	121	100	48	20	0	960	
10	DSSS35-008AR	4763	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	DLA20IM800PC	2291	121	100	96	20	0	1920	
2	DSP45-12A	2455	121	100	48	20	0	960	
3	CLA30E1200PC	2657	121	100	96	20	0	1920	
4	DSP25-16A	2950	121	100	48	20	0	960	
5	CS60-16io1	2960	121	100	96	20	0	1920	
6	DSDI60-16A	3342	121	100	48	20	0	960	
7	DSP45-16AR	3605	121	100	48	20	0	960	
8	DSI30-12A	3611	121	100	48	20	0	960	
9	DSP26-16AT	3835	121	100	96	20	0	1920	
10	DSA1-16D	4440	121	100	96	20	0	1920	
11	DSP45-12A	4760	121	100	48	20	0	960	
12	DSA1-16D	4938	121	100	96	40	0	3840	
13	DSI45-16A	4971	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	IXBOD1-08	4748	121	100	48	20	0	960	
4	IXBOD1-09	4040	121	100	48	20	0	960	
5	IXBOD1-10	2436	121	100	48	20	0	960	
6	IXBOD1-10	3723	121	100	48	20	0	960	
7	IXBOD2-14EPI	2905	121	100	96	20	0	1920	

TABLE 7A: 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	IXFT18N90P	SP0837	42	130	85	96	30	0	2880	
2	IXFB100N50P	TP1110	42	130	85	96	30	0	2880	
3	IXFK80N60P3	SP1150	42	130	85	96	25	0	2400	
4	IXGH40N120B2D1	TP0940	42	130	85	96	30	0	2880	
5	IXTV03N400S	TP1134	42	130	85	96	30	0	2880	
6	IXTP80N10T	SS1150	42	130	85	96	30	0	2880	
7	IXFH150N20T	SP1147	42	130	85	96	30	0	2880	
8	IXFT20N100P	TP1147	42	130	85	96	30	0	2880	
9	IXFH18N90P	TP1202	42	130	85	96	77	0	7392	
10	IXXH50N60B3D1	TP1150	42	130	85	96	30	0	2880	
11	IXTH3N120	TS1136	42	130	85	96	30	0	2880	
12	IXFP14N60P3	SS1144	42	130	85	96	30	0	2880	
13	IXTA80N10T	SS1150	42	130	85	96	77	0	7392	
14	IXFP4N60P3	SS1143	42	130	85	96	30	0	2880	
15	IXFP7N60P3	SS1143	42	130	85	96	30	0	2880	
16	IXTH4N150	TS1151	42	130	85	96	30	0	2880	
17	IXTH4N150	TP1149	42	130	85	96	30	0	2880	
18	IXBT24N170	TP1202	42	130	85	96	30	0	2880	
19	IXTT6N150	TP1203	42	130	85	96	30	0	2880	
20	IXSH45N120	TP1204	42	130	85	96	30	0	2880	
21	IXYH40N90C3	TS1205	42	130	85	96	30	0	2880	
22	IXYH60N90C3	SS1205	42	130	85	96	30	0	2880	
23	IXGF25N250	TP1206	42	130	85	96	20	0	1920	
24	IXTH200N10T	SP1208	42	130	85	96	30	0	2880	
25	IXFH15N100P	TP1202	42	130	85	96	30	0	2880	
26	IXFB110N60P3	SP1201	42	130	85	96	30	0	2880	
27	IXFH50N60P3	SP1201	42	130	85	96	30	0	2880	
28	IXGA24N170A	TS1215	42	130	85	96	30	0	2880	
29	IXFH26N50P3	SS1206	42	130	85	96	30	0	2880	
30	IXFP5N50P3	SS1206	42	130	85	96	30	0	2880	
31	IXFH16N50P3	SP1207	42	130	85	96	30	0	2880	
32	IXFK420N10T	SP1217	42	130	85	96	30	0	2880	
33	IXFH75N10	SS1219	42	130	85	96	30	0	2880	
34	IXFK94N50P2	SS1222	42	130	85	96	30	0	2880	
35	IXFK94N50P2	SS1222	42	130	85	96	30	0	2880	
36	IXFK94N50P2	SS1222	42	130	85	96	30	0	2880	
37	IXTH6N150	TP1201	42	130	85	96	30	0	2880	
38	IXTA02N250	TS1222	42	130	85	96	30	0	2880	
39	IXGA20N250HV	TS1222	42	130	85	96	30	0	2880	
40	IXFX32N100Q3	TP1229	42	130	85	96	30	0	2880	
41	IXFB210N30P3	SP1224	42	130	85	96	30	0	2880	
42	IXFN32N120P	TP1230	42	130	85	96	30	0	2880	
43	IXFN38N100P	TP1230	42	130	85	96	30	0	2880	
44	IXFH88N30P	TP1237	42	130	85	96	30	0	2880	
45	IXTL2N450	TP1239	42	130	85	96	30	0	2880	
46	IXTK550N055T2	UP1242	42	130	85	96	30	0	2880	
47	IXBF55N300	TP1243	42	130	85	96	30	0	2880	
48	IXYT20N120C3D1HV	TS1247	42	130	85	96	30	0	2880	
49	IXXH60N65B4	SP1235	42	130	85	96	30	0	2880	
50	IXXH60N65C4	SP1236	42	130	85	96	30	0	2880	
51	IXXH110N65C4	SS1302	42	130	85	96	30	0	2880	
52	IXTH96P085T	SS1302	42	130	85	96	30	0	2880	
53	IXFN120N20	SS1301	42	130	85	96	30	0	2880	
54	IXFP180N10T2	SS1305	42	130	85	96	30	0	2880	
55	IXGH40N60A	TP1304	42	130	85	96	30	0	2880	
56	IXTH20P50P	TP1309	42	130	85	96	30	0	2880	
57	IXFN90N30	TS1309	42	130	85	96	30	0	2880	
58	IXFN100N25	SS1309	42	130	85	96	30	0	2880	
59	IXFN150N15	SS1309	42	130	85	96	30	0	2880	
60	IXTP200N055T2	US1310	42	130	85	96	30	0	2880	

TABLE 7A: 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	IXFP230N075T2	SS1309	42	130	85	96	30	0	2880	
62	IXFP170N075T2	US1310	42	130	85	96	30	0	2880	
63	IXFN48N50Q	SP1304	42	130	85	96	30	0	2880	
64	IXFN210N30P3	SP1223	42	130	85	96	30	0	2880	
65	IXFN80N50	SP1312	42	130	85	96	10	0	960	
66	IXTH16P60P	TS1316	42	130	85	96	30	0	2880	
67	IXTP80N10T	SS1318	42	130	85	96	30	0	2880	
68	IXTP130N10T	SS1318	42	130	85	96	30	0	2880	
69	IXTH200N10T	SP1319	42	130	85	96	30	0	2880	
70	IXFH160N15T2	SS1319	42	130	85	96	30	0	2880	
71	IXXH80N65B4H1	SP1319	42	130	85	96	30	0	2880	
72	IXFQ94N30P3	SS1321	42	130	85	96	30	0	2880	
73	IXBF12N300	TP1218	42	130	85	96	30	0	2880	
74	IXBF15N300C	TP1313	42	130	85	96	30	0	2880	
75	IXFP22N60P3	TS1324	42	130	85	96	30	0	2880	
76	IXFH22N60P3	TS1326	42	130	85	96	30	0	2880	
77	IXFX140N30P	TS1330	42	130	85	96	30	0	2880	
78	IXFX90N50P2	TP1330	42	130	85	96	30	0	2880	
79	IXFK140N30P	TP1330	42	130	85	96	25	0	2400	
80	IXFK90N50P2	TP1330	42	130	85	96	25	0	2400	
81	IXTP20N65X	HS1332	42	130	85	96	30	0	2880	
82	IXFP110N15T2	SS1332	42	130	85	96	30	0	2880	
83	IXTP76P10T	TS1332	42	130	85	96	30	0	2880	
84	IXTP460P2	TS1332	42	130	85	96	30	0	2880	
85	IXFK90N50P2	TP1333	42	130	85	96	77	0	7392	
86	IXFN48N60P	SS1333	42	130	85	96	30	0	2880	
87	IXFN48N60P	SS1333	42	130	85	96	30	0	2880	
88	IXFN64N50P	TS1333	42	130	85	96	30	0	2880	
89	IXFX78N50P3	TS1337	42	130	85	96	30	0	2880	
90	IXFN64N50P	TS1333	42	130	85	96	30	0	2880	
91	IXFX64N60P3	SS1335	42	130	85	96	30	0	2880	
92	IXTP260N055T2	SS1338	42	130	85	96	30	0	2880	
93	IXFX20N120P	TS1337	42	130	85	96	30	0	2880	
94	IXTH1N200P3	TP1338	42	130	85	96	30	0	2880	
95	IXFK90N50P2	TP1137	42	130	85	96	77	0	7392	
96	IXFH150N17T2	SS1341	42	130	85	96	30	0	2880	
97	IXBH16N170A	TP1221	42	130	85	96	30	0	2880	
98	IXTP100N04T2	SS1341	32	130	85	96	30	0	2880	
99	IXTP110N055T2	SS1332	42	130	85	96	30	0	2880	
100	IXTH20N65X	SS1344	42	130	85	96	30	0	2880	
101	IXFK420N10T	SP1347	42	130	85	96	22	0	2112	
102	IXFN64N50P	TS1347	42	130	85	96	30	0	2880	
103	IXTP02N120P	TS1307	42	130	85	96	30	0	2880	
104	IXFH12N90	TS1344	42	130	85	96	30	0	2880	
105	IXFB60N80PK	TS1349	42	130	85	96	30	0	2880	
106	IXTP2N100P	TS1332	42	130	85	96	30	0	2880	
107	IXFH26N50	TS1331	42	130	85	96	30	0	2880	
108	IXFH26N50Q	TS1343	42	130	85	96	30	0	2880	
109	IXTH32N65X	SS1346	42	130	85	96	30	0	2880	
110	IXFP110N15T2	US1351	42	130	85	96	30	0	2880	
111	IXTH1N200P3HV	TS1404	42	130	85	96	30	0	2880	
112	IXTH1N300P3HV	TS1404	42	130	85	96	30	0	2880	
113	IXTH1N450HV	TS1404	42	130	85	96	30	0	2880	
114	IXFH12N90	TP1310	42	130	85	96	30	0	2880	
115	IXTH140N10P	TS1406	42	130	85	96	30	0	2880	
116	IXBH20N360HV	TS1404	42	130	85	96	30	0	2880	

TABLE 7A: 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
117	IOTP450P2	GS1352	42	130	85	96	30	0	2880	
118	IOTP450P2	GS1411	42	130	85	96	30	0	2880	
119	IXFH150N17T	US1401	42	130	85	96	30	0	2880	
120	IXFH160N15T	US1401	42	130	85	96	30	0	2880	
121	IXFH76N15T2	US1406	42	130	85	96	30	0	2880	
122	IXFK90N50P2	TP1406	42	130	85	96	77	0	7392	
123	IXFX230N20T	US1408	42	130	85	96	30	0	2880	
124	IQTQ44N50P	GS1408	42	130	85	96	30	0	2880	
125	IXFH60N50P3	GS1408	42	130	85	96	30	0	2880	
126	IQTQ82N25P	TS1348	42	130	85	96	30	0	2880	
127	IXTH02N450HV	TS1414	42	130	85	96	30	0	2880	
128	IOTP200N055T2	US1414	42	130	85	96	77	0	7392	
129	IXFX140N25T	US1410	42	130	85	96	30	0	2880	
130	IXFH50N60P3	TS1414	42	130	85	96	30	0	2880	
131	IXFH46N30T	US1408	42	130	85	96	30	0	2880	
132	IXBH10N300HV	TS1413	42	130	85	96	30	0	2880	
133	IXTH1R4N250P3HV	TS1413	42	130	85	96	30	0	2880	
134	IXFX160N30T	SS1339	42	130	85	96	30	0	2880	
135	IXYH30N450HV	TS1413	42	130	85	96	30	0	2880	
136	IXTH86N25T	UP1408	42	130	85	96	30	0	2880	
137	IXYX40N450HV	TS1414	42	130	85	96	30	0	2880	
138	IXFN360N10T	US1422	42	130	85	96	30	0	2880	
139	IXBX50N360HV	TS1414	42	130	85	96	30	0	2880	
140	IXTH2N150L	TP1317	42	130	85	96	30	0	2880	
141	IXBX28N300HV	TS1414	42	130	85	96	30	0	2880	
142	IXBH14N300HV	TS1414	42	130	85	96	30	0	2880	
143	IXFH52N50P2	GS1422	42	130	85	96	30	0	2880	
144	IXFP16N50P3	GS1419	42	130	85	96	30	0	2880	
145	IXTH80N075L2	TS1419	42	130	85	96	30	0	2880	
146	IXTH64N65X	HS1417	42	130	85	96	30	0	2880	
147	IXFH50N60P3	GP1428	42	130	85	96	30	0	2880	
148	IXBH22N300HV	TS1421	42	130	85	96	30	0	2880	
149	IXFH50N50P3	SS1407	42	130	85	96	30	0	2880	
150	IOTP50N28T	US1426	42	130	85	96	30	0	2880	
151	IXFH22N60P3	SG1429	42	130	85	96	30	0	2880	
152	IOTP460P2	GS1421	42	130	85	96	30	0	2880	
153	IOTP460P2	GS1421	42	130	85	96	30	0	2880	
154	IXFK40N90P	TP1434	42	130	85	96	77	0	7392	
155	IXFK40N90P	TP1444	42	130	85	96	77	0	7392	
156	IXFP36N30P3	GS1419	42	130	85	96	30	0	2880	
157	IXFT50N60P3	GP1443	42	130	85	96	77	0	7392	
158	IXTH20N65X	HS1440	42	130	85	96	30	0	2880	
159	IXTH32N60X	HS1440	42	130	85	96	30	0	2880	
160	IXTH20N60X	HS1440	42	130	85	96	30	0	2880	
161	IXFB40N110Q3	TP1420	42	130	85	96	30	0	2880	
162	IXGR72N60A3H1	TP1352	42	130	85	96	21	0	2016	
163	IXFH30N50P	SS1413	42	130	85	96	27	0	2592	