

Report NO : 17P070009

Boxer-6640M

Reliability Prediction Report (MTBF)

Summary	Failure Rate: 11367.751596 MTBF: 87,968 Hours
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Issue date	QE Manager	Test Engineer
2017-08-30	KJ Wang	Aslen Hsieh

Reliability Prediction (MTBF)

I . Model Name: Boxer-6640M

II . Prediction Date: Aug. 30, 2017

III . Prediction Site: AAEON Q.E. Dept.

IV . Predicted by: Aslen Hsieh

V . Equipment: Windchill Quality Solutions 10.1

VI. Simulation Environment:

- Temperature: 30 degrees C
- Standard: Telcordia (Bellcore) Standard

VII. Term and Definition:

- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure rate is to be calculated based the selected Calculation models. The Failure rate multiplier is 1000000000.
- MTBF : MTBF is always specified in hours.

VIII. Prediction Result:

Boxer-6640M (M/B: 9697SKS301-D)

- Failure Rate: 11367.751596

- MTBF: 87,968 Hours

**AAEON Reliability Prediction
Summary**

File Name: BOXER-6640M.rfp
Duty Cycle: 100
Calculation Model: Telcordia Issue 2
Method: Method I Case 3

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
BOXER-6640M	9697SKS301-D		1	11367.751596	87,968

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050500104	Resistor	R691,R716,R749, R778,R891		2.547039	5	67008142.102588
1050501004	Resistor	R35,R650,R651,R653, R654,R687,R711, R747,R780		2.547039	9	38754445.632391
1050501054	Resistor	R160,R192,R570, R646,R647,R829, R883,R971		2.547039	8	43225424.698300
1050502004	Resistor	R371,R374,R957		2.547039	3	107020754.986850
1050502224	Resistor	R245,R270,R271, R272,R292,R294, R300,R306,R313, R314,R315,R733, R853,R854,R885		2.547039	15	23852782.943395
1050502234	Resistor	R940		2.547039	1	282340674.079668
1050502724	Resistor	R969		2.547039	1	282340674.079668
1050503324	Resistor	R105,R13		2.547039	2	154078778.388085
1050504724	Resistor	R1417,R164,R175, R357,R454,R465, R549,R775,R784, R787,R795,R810		2.547039	12	29507083.749401
1050504734	Resistor	R195,R453		2.547039	2	154078778.388085
1050504764	Resistor	R16		2.547039	1	282340674.079668
1050505124	Resistor	R1441,R768		2.547039	2	154078778.388085
1050505134	Resistor	R201,R561,R861, R967		2.547039	4	82309758.689546
1050505164	Resistor	R336,R939		2.547039	2	154078778.388085
1050507524	Resistor	R117		2.547039	1	282340674.079668
1050510004	Resistor	R137,R140,R156, R162,R166,R597, R607,R618,R622, R636,R977		2.547039	11	32049696.385471

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1050510024	Resistor	R1048,R1056, R124, R127,R14,R1 455, R194,R200,R 205, R223,R256,R 265, R266,R282,R 283, R284,R323,R 341, R412,R413,R 415, R418,R510,R 563, R643,R736,R 771, R772,R777,R 788, R789,R803,R 809, R813,R839,R 840, R841,R846,R 847, R855,R859,R 862, R864,R867,R 868, R870,R871,R 87		2.547039	58	6449958.733144
1050510034	Resistor	R104,R225,R 244, R254,R311,R 320, R385,R582,R 588, R600,R645,R 649, R652,R655,R 779, R785,R884,R 905		2.547039	18	20032117.836120
1050512104	Resistor	R824		2.547039	1	282340674.079668
1050512724	Resistor	R473		2.547039	1	282340674.079668
1050517424	Resistor	R52		2.547039	1	282340674.079668
1050520014	Resistor	R75,R814		2.547039	2	154078778.388085
1050520034	Resistor	R50,R53		2.547039	2	154078778.388085
1050522124	Resistor	R48		2.547039	1	282340674.079668
1050524004	Resistor	R193,R208		2.547039	2	154078778.388085
1050524324	Resistor	R19		2.547039	1	282340674.079668

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1050524904	Resistor	R231,R280,R298, R299		2.547039	4	82309758.689546
1050524909	Resistor	R181,R229		2.547039	2	154078778.388085
1050524924	Resistor	R480		2.547039	1	282340674.079668
1050525524	Resistor	R12		2.547039	1	282340674.079668
1050526124	Resistor	R37		2.547039	1	282340674.079668
1050528714	Resistor	R955		2.547039	1	282340674.079668
1050530164	Resistor	R919,R923,R930		2.547039	3	107020754.986850
1050530914	Resistor	R856		2.547039	1	282340674.079668
1050533034	Resistor	R66,R962		2.547039	2	154078778.388085
1050540214	Resistor	R45,R47		2.547039	2	154078778.388085
1050542214	Resistor	R106,R659,R69,R87		2.547039	4	82309758.689546
1050545364	Resistor	R17		2.547039	1	282340674.079668
1050547004	Resistor	R207		2.547039	1	282340674.079668
1050547034	Resistor	R57		2.547039	1	282340674.079668
1050549904	Resistor	R326		2.547039	1	282340674.079668
1050556269	Resistor	R139		2.547039	1	282340674.079668
1050560414	Resistor	R541,R954		2.547039	2	154078778.388085
1050561934	Resistor	R750		2.547039	1	282340674.079668
1050573214	Resistor	R318		2.547039	1	282340674.079668
1050700002	Resistor	R1,R536,R579,R692, R708		2.547039	5	67008142.102588

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1050700004	Resistor	R10,R1058,R1064, R1065,R1066, ,R1069, R1083,R1085, ,R11, R1242,R1249, ,R134, R1467,R1469, ,R157, R158,R161,R184, R185,R187,R206, R209,R222,R241, R242,R253,R255, R257,R259,R260, R262,R269,R27,R276, R281,R290,R291, R301,R302,R33,R339, R344,R346,R348, R353,R358,R367		2.547039	168	2270940.721708

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1050701034	Resistor	R1007,R1008 ,R1009, R1011,R1012 ,R1014, R1015,R1016 ,R1017, R1018,R1019 ,R1020, R1022,R1035 ,R1036, R1037,R1038 ,R1039, R1040,R1041 ,R1042, R1043,R1044 ,R1045, R1046,R1089 ,R1090, R1091,R1096 ,R1097, R1098,R1099 ,R1100, R1101,R1103 ,R1104, R1105,R1106 ,R1107, R1108,R1		2.547039	177	2157039.086588
1050701044	Resistor	R361,R46,R5 37,R539, R724,R730,R 742, R757,R944,R 951		2.547039	10	35079934.879747
1050701504	Resistor	R243,R843,R 872		2.547039	3	107020754.986850
1050703334	Resistor	R1454,R378, R419, R422,R445,R 460, R471,R802,R 924		2.547039	9	38754445.632391

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1050710014	Resistor	R1001,R1095 ,R1127, R1159,R1191 ,R1223, R1253,R1254 ,R1266, R1267,R1268 ,R1434, R15,R217,R2 19,R236, R273,R286,R 30,R31, R332,R362,R 427, R432,R568,R 583, R586,R619,R 620, R634,R635,R 639, R641,R743,R 796, R797,R851,R 898, R933,R945		2.547039	40	9263254.152485
1050747014	Resistor	R1093,R1125 ,R1157, R1189,R1221 ,R1247, R1251,R1252 ,R1262, R1432,R163, R369, R514,R515,R 516, R605,R633,R 703, R729,R735,R 737, R741,R744,R 748, R753,R756,R 766, R770,R773		2.547039	29	12652760.276502
1050756004	Resistor	R713,R715,R 721, R941		2.547039	4	82309758.689546
1053500282	Resistor	R494,R769,R 920, R935		2.547039	4	82309758.689546
1053501289	Resistor	R658,R689		2.547039	2	154078778.388085
1053502099	Resistor	R717		2.547039	1	282340674.079668
1054700289	Resistor	R171		2.547039	1	282340674.079668

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1059700001	Resistor	R1082,R1114 ,R1146, R1183,R1210 ,R122, R142,R1420, R150, R165,R447,R 553, R690,R714,R 751, R801,R956		2.547039	17	21160422.299251
1059702261	Resistor	R141		2.547039	1	282340674.079668
105A500103	Resistor	R720		2.547039	1	282340674.079668
105A500133	Resistor	R382		2.547039	1	282340674.079668
105A501033	Resistor	R113,R331,R 343, R356,R363		2.547039	5	67008142.102588
105A501139	Resistor	R860		2.547039	1	282340674.079668
105A501333	Resistor	R83		2.547039	1	282340674.079668
105A501529	Resistor	R576,R609,R 623		2.547039	3	107020754.986850
105A501539	Resistor	R296		2.547039	1	282340674.079668
105A501829	Resistor	R24,R25		2.547039	2	154078778.388085
105A502039	Resistor	R333,R347,R 511, R521,R564,R 565, R794,R817,R 904		2.547039	9	38754445.632391
105A503039	Resistor	R78		2.547039	1	282340674.079668
105A504703	Resistor	R637,R640		2.547039	2	154078778.388085
105A505109	Resistor	R324,R328,R 337, R350,R901,R 909, R911,R913		2.547039	8	43225424.698300
105A506829	Resistor	R2,R4		2.547039	2	154078778.388085
105A506834	Resistor	R734		2.547039	1	282340674.079668
105A507509	Resistor	R138,R20,R2 1,R595, R596,R599,R 9		2.547039	7	48991237.965885
105A507533	Resistor	R152		2.547039	1	282340674.079668
105A508223	Resistor	R1248		2.547039	1	282340674.079668
105A508233	Resistor	R29		2.547039	1	282340674.079668
105A510033	Resistor	R663		2.547039	1	282340674.079668
105A510223	Resistor	R153,R235		2.547039	2	154078778.388085
105A510733	Resistor	R108		2.547039	1	282340674.079668
105A511303	Resistor	R335		2.547039	1	282340674.079668
105A512133	Resistor	R129		2.547039	1	282340674.079668

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Ref Des:
Description:

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Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A513009	Resistor	R575		2.547039	1	282340674.079668
105A520033	Resistor	R739		2.547039	1	282340674.079668
105A522003	Resistor	R133		2.547039	1	282340674.079668
105A522123	Resistor	R648		2.547039	1	282340674.079668
105A524963	Resistor	R959		2.547039	1	282340674.079668
105A534819	Resistor	R571		2.547039	1	282340674.079668
105A534823	Resistor	R199		2.547039	1	282340674.079668
105A543223	Resistor	R92		2.547039	1	282340674.079668
105A544229	Resistor	R577		2.547039	1	282340674.079668
105A549919	Resistor	R1110,R1142 ,R1174, R1206,R1238 ,R1449, R525,R526,R 528		2.547039	9	38754445.632391
105A549963	Resistor	R277,R32		2.547039	2	154078778.388085
105A551003	Resistor	R1255,R1256		2.547039	2	154078778.388085
105A553629	Resistor	R90		2.547039	1	282340674.079668
105A562034	Resistor	R319		2.547039	1	282340674.079668
105A563419	Resistor	R252		2.547039	1	282340674.079668
105A571539	Resistor	R51		2.547039	1	282340674.079668
105A575009	Resistor	R948		2.547039	1	282340674.079668

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105A700003	Resistor	FB8,FB9,R1053, R1055,R1092,R1094, R1124,R1126,R1156, R1158,R1188,R1190, R1220,R1222,R132, R1431,R1433,R177, R180,R202,R249, R279,R288,R303, R308,R310,R321, R322,R406,R439, R472,R474,R475, R482,R483,R484, R486,R508,R557, R686,R697,R700, R758,R765,R800, R82		2.547039	49	7603103.900483
105A700203	Resistor	R224,R258		2.547039	2	154078778.388085
105A701033	Resistor	R394,R806,R807, R925		2.547039	4	82309758.689546
105A701069	Resistor	R887		2.547039	1	282340674.079668
105A702229	Resistor	R481,R517,R617, R626,R627,R632, R718,R719,R727		2.547039	9	38754445.632391
105A702263	Resistor	R128,R146,R151, R172,R688,R712, R746,R781		2.547039	8	43225424.698300
105A702269	Resistor	R125		2.547039	1	282340674.079668
105A702433	Resistor	R58,R960		2.547039	2	154078778.388085
105A703003	Resistor	R351		2.547039	1	282340674.079668

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105A703309	Resistor	R1270,R1271 ,R1272, R1273,R1274 ,R1275, R1276,R1277 ,R22, R23,R237,R2 38,R239, R247,R509,R 848, R863		2.547039	17	21160422.299251
105A703329	Resistor	R1111,R1112 ,R1113, R1143,R1144 ,R1145, R1175,R1176 ,R1177, R1207,R1208 ,R1209, R1239,R1240 ,R1241, R1450,R1451 ,R1452, R1453,R379, R407, R421,R423,R 426, R429,R430,R 431, R435,R436,R 444, R450,R452,R 461, R782,R805,R 950		2.547039	36	10261285.143207
105A704303	Resistor	R167		2.547039	1	282340674.079668
105A705139	Resistor	R1051,R1418 ,R64, R685,R84		2.547039	5	67008142.102588
105A708229	Resistor	R1472,R1473 ,R264, R267,R849,R 852, R865,R882,R 949		2.547039	9	38754445.632391
105A710009	Resistor	R101,R102,R 143, R144,R145,R 188, R702		2.547039	7	48991237.965885

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105A715003	Resistor	R1025,R1026 ,R1028, R1029,R1033 ,R1034, R1059,R1060 ,R1061, R1067,R1068 ,R1070, R1071,R1072 ,R1073, R1074,R1075 ,R1076, R1077,R1078 ,R1079, R1080,R1081 ,R1421, R1464,R1465 ,R1466, R580,R581		2.547039	29	12652760.276502
105A733009	Resistor	R574,R578		2.547039	2	154078778.388085
105A747003	Resistor	R1260,R1261		2.547039	2	154078778.388085
105A747009	Resistor	R1021,R149, R189, R359,R774,R 997		2.547039	6	56573956.677649
105A747033	Resistor	R662		2.547039	1	282340674.079668
105B700009	Resistor	R1470		2.547039	1	282340674.079668
106B500144	Resistor	RT4,RT6		7.724580	2	38596617.434771
106B510034	Resistor	RT1,RT2,RT3 ,RT5		7.724580	4	21923287.146155

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1121501690	Capacitor	C106,C107,C109,C11,C111,C114,C12,C140,C141,C153,C154,C155,C156,C157,C163,C165,C166,C18,C191,C194,C195,C200,C206,C210,C216,C217,C22,C232,C235,C237,C241,C246,C247,C262,C27,C271,C278,C290,C291,C294,C302,C303,C304,C308,C310,C318,C32,C320,C321,C3		1.128806	275	3173599.781843
1121610180	Capacitor	C34,C35,C37,C39,C420,C421,C439,C440,C450,C453,C454,C455,C568,C569,C570,C577		1.128806	16	52112480.802928
1122522890	Capacitor	C243,C277		1.128806	2	375289731.076049
1124418090	Capacitor	C10,C679,C691,C9		1.128806	4	196873384.410843
1124420090	Capacitor	C69,C70		1.128806	2	375289731.076049

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1124427090	Capacitor	C379,C380,C381, C391,C392,C393, C830,C831,C840, C841,C850,C851, C860,C861,C870, C871,C979,C980		1.128806	18	46478509.590073
1124427190	Capacitor	C53,C54		1.128806	2	375289731.076049
1124433090	Capacitor	C260,C369		1.128806	2	375289731.076049
1124433190	Capacitor	C482,C94		1.128806	2	375289731.076049
1124522190	Capacitor	C890,C891,C892, C893,C894,C895, C896,C897		1.128806	8	101746760.035398
1124522290	Capacitor	C118,C230,C437,C45, C504,C52,C532,C536, C541,C554,C627		1.128806	11	74892583.279796
1124547190	Capacitor	C13,C25,C26,C44, C471,C5,C56,C738, C752,C765,C766, C767,C768,C769, C770		1.128806	15	55479656.844874
1129701790	Capacitor	C24,C414,C415,C416, C417,C88,C93		1.128806	7	115633865.771428
1129710090	Capacitor	C446,C6,C7,C8		1.128806	4	196873384.410843
1129710390	Capacitor	C167,C485,C543,C58, C639,C68		1.128806	6	133979725.056342
1129722091	Capacitor	C2,C3,C674,C76		1.128806	4	196873384.410843
1129747090	Capacitor	C41,C48,C651		1.128806	3	257514172.353070
1181627194	Capacitor	C886		4.744484	1	159663026.715137
118162719B	Capacitor	C117,C134		4.744484	2	86049450.747498

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1189615154	Capacitor	C340,C341,C444, C556,C572,C638, C771,C772,C781, C782,C788,C789, C790,C803,TC1,TC2, TC5,TC6		4.744484	18	10911528.674522
1189633091	Capacitor	C814,C815		4.744484	2	86049450.747498
1189633151	Capacitor	C226,C594		4.744484	2	86049450.747498
1189647185	Capacitor	C644,C660		4.744484	2	86049450.747498
1189656196	Capacitor	C146,C162,C394, C806		4.744484	4	45505862.704531
118C639191	Capacitor	C113,C115,C116, C130,C138,C147, C178,C196,C223, C256		4.744484	10	19193879.126421
11A4422190	Capacitor	C309		1.128806	1	704977644.692287
11A4950640	Capacitor	C630,C631		1.128806	2	375289731.076049
11C1539841	Capacitor	C732,C733,C734, C829,C839,C849, C859,C869,C978		1.128806	9	90863428.080946
11C2522480	Capacitor	C306		1.128806	1	704977644.692287
11C4501050	Capacitor	C90		1.128806	1	704977644.692287
11C4501650	Capacitor	C610,C619,C647		1.128806	3	257514172.353070
11C4501790	Capacitor	C19,C657		1.128806	2	375289731.076049
11C4522410	Capacitor	C123,C91		1.128806	2	375289731.076049
11C4533380	Capacitor	C267		1.128806	1	704977644.692287
11C4556690	Capacitor	C14,C658		1.128806	2	375289731.076049
11C4568240	Capacitor	C534,C539		1.128806	2	375289731.076049
11C5501650	Capacitor	C4,C524,C61,C63, C66,C83		1.128806	6	133979725.056342
11C5547660	Capacitor	C17,C472,C473,C474, C475		1.128806	5	159367490.199266
11C9501380	Capacitor	C888		1.128806	1	704977644.692287
11E1501040	Capacitor	C545,C654		1.128806	2	375289731.076049

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E1510050	Capacitor	C112,C268,C269, C599,C609,C663		1.128806	6	133979725.056342
11E1622060	Capacitor	C588		1.128806	1	704977644.692287
11E2501080	Capacitor	C129,C142,C180, C259,C316,C317, C339,C580,C604, C618,C775,C780,C92		1.128806	13	63728475.410842
11E2501690	Capacitor	C122,C125,C127, C242,C502,C503, C531,C540,C542, C557,C623,C664, C807,C87		1.128806	14	59316298.011235
11E2510010	Capacitor	C119,C120,C121, C135,C136,C137, C150,C151,C152, C207,C208,C209, C251,C253,C493, C494,C495,C496, C583,C584,C585, C600,C642		1.128806	23	36609385.175833
11E2522090	Capacitor	C500,C501,C527, C528,C529		1.128806	5	159367490.199266
11E2622011	Capacitor	C530,C648,C649		1.128806	3	257514172.353070
11E4547610	Capacitor	C549		1.128806	1	704977644.692287
11E5510611	Capacitor	C62		1.128806	1	704977644.692287
11E9510490	Capacitor	C982,C983,C984, C985		1.128806	4	196873384.410843
11E9547680	Capacitor	C16		1.128806	1	704977644.692287
11E9622050	Capacitor	C325,C360,C571, C741		1.128806	4	196873384.410843
11E9622052	Capacitor	C197,C463,C661		1.128806	3	257514172.353070

**Reliability Prediction
Summary**

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9622080	Capacitor	C124,C128,C131, C133,C143,C145, C148,C168,C169, C170,C171,C172, C173,C174,C175, C176,C177,C179, C183,C184,C185, C186,C187,C188, C189,C190,C193, C199,C201,C202, C203,C213,C214, C215,C219,C220, C221,C227,C234, C238,C239,C245, C250,C254,C265, C266,C311,C312,		1.128806	85	10147209.588673

**Reliability Prediction
Summary**

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EA610040	Capacitor	C139,C192,C211, C218,C222,C224, C225,C231,C236, C240,C248,C249, C257,C261,C263, C264,C274,C283, C284,C285,C288, C292,C295,C296, C298,C322,C533, C538,C551,C567, C578,C586,C641, C646,C659,C669, C671,C682,C686		1.128806	39	21841170.168719
11EA647010	Capacitor	C149,C182,C205, C280,C281,C286, C287,C613		1.128806	8	101746760.035398

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EB501040	Capacitor	C110,C132,C144, C164,C212,C228, C255,C258,C270, C275,C276,C282, C289,C297,C299, C300,C301,C305, C314,C319,C323, C327,C328,C329, C330,C331,C335, C337,C338,C343, C354,C400,C423, C431,C432,C448, C457,C505,C507, C544,C552,C606, C614,C650,C676, C683,C684,C685,		1.128806	64	13422762.501881
11EB522640	Capacitor	C126,C244,C279,C73		1.128806	4	196873384.410843

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EB610050	Capacitor	C1,C15,C158 ,C159, C160,C161,C 181, C272,C273,C 30,C31, C336,C342,C 344, C355,C371,C 387, C403,C441,C 442, C443,C459,C 461, C466,C49,C5 0,C506, C508,C509,C 510, C548,C595,C 596,C60, C645,C670,C 673, C680,C690,C 693, C698,C735,C 736, C751,C753,C 754, C755,C756,C 757, C75		1.128806	82	10513419.187508
121110106Z	Inductor	L13		4.944252	1	154760964.143460
121110156P	Inductor	L1		4.944252	1	154760964.143460
121110156Z	Inductor	L7		4.944252	1	154760964.143460
1211101573	Inductor	L3,L4,L5,L8		4.944252	4	43912872.424775
121110226X	Inductor	L10,L12,L6,L 9		4.944252	4	43912872.424775
1211106879	Inductor	L11		4.944252	1	154760964.143460
121113307R	Inductor	L2		4.944252	1	154760964.143460
121230603S	Inductor	FB2,FB21,FB 22,FB23, FB24,FB4,FB 41,FB43, FB44,FB5,FB 6,FB7		4.944252	12	15520616.516984
1212308054	Inductor	FB1,FB20,FB 27,FB28, FB3,FB31,FB 32,FB33, FB34,FB35,F B36, FB37,FB45,F B46		4.944252	14	13381951.576219

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
12123A000E	Inductor	FB25,FB26		4.944252	2	83201062.149749
12123C0030	Inductor	FB39,FB40		4.944252	2	83201062.149749
12123D0009	Inductor	FB29,FB30,F B38, FB42		4.944252	4	43912872.424775
1214309008	Inductor	CH1,CH10,C H11,CH12, CH13,CH14,C H15, CH16,CH17,C H18, CH19,CH2,C H20,CH21, CH22,CH23,C H24, CH25,CH26,C H27, CH28,CH29,C H3,CH30, CH31,CH32,C H34, CH35,CH36,C H37,CH4, CH5,CH6,CH 7,CH8, CH9		4.944252	36	5352588.431777
12310024A2	Miscellaneous	Y7		19.200000	1	23844262.770939
12310027A3	Miscellaneous	Y1		19.200000	1	23844262.770939
123132505D	Miscellaneous	Y10,Y11,Y12, Y13,Y2, Y3,Y4,Y8,Y9		19.200000	9	2257921.256962
1231327610	Miscellaneous	Y6		19.200000	1	23844262.770939
12333048A2	Miscellaneous	Y5		19.200000	1	23844262.770939
1251005055		U119		0.000000	1	0.000000
1300414841	Semiconductor	D3		7.793411	1	92807310.010983
1301003440	Semiconductor	D31,D34		7.793411	2	50578095.223398
1301005440	Semiconductor	D13,D5,D56, D6		7.793411	4	26989084.126235
1301005442	Semiconductor	D10,D11,D27 ,D47, D48,D49,D9		7.793411	7	16052497.121446
1301005447	Semiconductor	D35		7.793411	1	92807310.010983
1301400541	Semiconductor	D1		7.793411	1	92807310.010983
1301400640	Semiconductor	D4		7.793411	1	92807310.010983
1301400642	Semiconductor	D28		7.793411	1	92807310.010983
1301793040	Semiconductor	D25,D26,D36 ,D7		7.793411	4	26989084.126235
1302052320	Semiconductor	D30		7.793411	1	92807310.010983
1304001121	Optical Device	LED3		79.003355	1	6497172.749112
1304001340	Optical Device	LED1		79.003355	1	6497172.749112
1304300140	Optical Device	LED2		79.003355	1	6497172.749112

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1305080040	Semiconductor	D17,D18,D19 ,D20, D21,D22,D23 ,D32, D33,D41,D42 ,D43, D44,D45,D46 ,D52, D53,D54,D55 ,D57, D60,D61,D62 ,D63		7.793411	24	4971537.606722
13050J58A0	Semiconductor	D2		7.793411	1	92807310.010983
1305100541	Semiconductor	D29,U1,U2,U 3,U4,U5, U6,U7		7.793411	8	14161142.003130
1310390410	Semiconductor	Q14,Q38,Q5 2,Q56		22.463360	4	9270607.712006
1310390413	Semiconductor	Q82,Q84		22.463360	2	17315095.066101
1311390612	Semiconductor	Q80,Q83		22.463360	2	17315095.066101
13150123N0	Semiconductor	Q27,Q28,Q3 0		22.463360	3	12043329.789539
1315049820	Semiconductor	Q33,Q34,Q3 6,Q43, Q44,Q50,Q5 1,Q58, Q59		22.463360	9	4366472.106532
1315060301	Semiconductor	Q32,Q37,Q4 6,Q54, Q55,Q66,Q6 9,Q76, Q78		22.463360	9	4366472.106532
1315200312	Semiconductor	Q67,Q68		22.463360	2	17315095.066101
1315230211	Semiconductor	Q12,Q13		22.463360	2	17315095.066101
1315700216	Semiconductor	Q11,Q17,Q1 8,Q19,Q2, Q20,Q21,Q3 1,Q4,Q49, Q62,Q64,Q6 5,Q79,Q8, Q81,Q86,Q8 7		22.463360	18	2263829.704727
1315EM6K10	Semiconductor	Q10,Q40,Q4 1,Q42,Q6, Q7,Q9		22.463360	7	5525968.936223
1315S4C500	Semiconductor	Q35,Q45,Q5 3,Q63		22.463360	4	9270607.712006
1315S4C550	Semiconductor	Q39		22.463360	1	31642600.748419
1430006850	Integrated Circuit	U77		43.803003	1	11739202.588727
1430053250	Semiconductor	Q22		22.463360	1	31642600.748419
1430080650	Integrated Circuit	U15,U79		43.803003	2	6834791.244197
1430082021	Integrated Circuit	U30,U50,U75		43.803003	3	4923240.069161

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1430097420	Integrated Circuit	U110,U112,U14,U57,U81,U82,U90,U91,U92,U93,U94,U95,U96,U97		43.803003	14	1306102.438990
1430455200	Integrated Circuit	U29,U40,U67,U86,U89		43.803003	5	3214211.402100
1430532190	Integrated Circuit	U64		43.803003	1	11739202.588727
1430811460	Integrated Circuit	U23,U25,U26,U27		43.803003	4	3879156.910661
1430812430	Integrated Circuit	U17		43.803003	1	11739202.588727
143ALC8920	Integrated Circuit	U111		43.803003	1	11739202.588727
14400H1700	Integrated Circuit	U78		43.803003	1	11739202.588727
1440210IT0	Integrated Circuit	U100,U102,U103,U107,U108,U109,U123,U98,U99		11.063278	9	8511319.347604
14407517A0	Integrated Circuit	U16		43.803003	1	11739202.588727
14590AUP10	Integrated Circuit	U39		43.803003	1	11739202.588727
1462B640M0	Integrated Circuit	SPI1		11.063278	1	58231413.220643
1469128350	Integrated Circuit			11.063278	1	58231413.220643
1490014100	Integrated Circuit	U120		43.803003	1	11739202.588727
1490014110	Integrated Circuit	U121		43.803003	1	11739202.588727
1490014120	Integrated Circuit	U122		43.803003	1	11739202.588727
14S3104500	Integrated Circuit	D14,D15,D16,D37,D38,D39,D40,D51,U10,U11,U12,U13,U8,U9		43.803003	14	1306102.438990
14S3111703	Integrated Circuit	Q88		43.803003	1	11739202.588727
14S3378900	Integrated Circuit	U24		43.803003	1	11739202.588727
14S3528000	Integrated Circuit	U18		43.803003	1	11739202.588727
14S3820700	Integrated Circuit	U37		43.803003	1	11739202.588727
14S3902500	Integrated Circuit	U46		43.803003	1	11739202.588727
14S4021301	Integrated Circuit	U113		43.803003	1	11739202.588727
14S4048501	Integrated Circuit	U116		43.803003	1	11739202.588727
14S4048503	Integrated Circuit	U117		43.803003	1	11739202.588727
14S4186600	Integrated Circuit	U65		43.803003	1	11739202.588727
14S4911216	Integrated Circuit	U69		43.803003	1	11739202.588727
14S5974741	Integrated Circuit	U41		43.803003	1	11739202.588727
14S5A00601	Integrated Circuit	U115		43.803003	1	11739202.588727
14S5A00702	Integrated Circuit	U66		43.803003	1	11739202.588727

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
14S5A00821	Integrated Circuit	U28,U31,U32 ,U33, U35,U36,U38 ,U42, U68,U70,U72 ,U74, U76		43.803003	13	1395864.544354
14S5A12503	Integrated Circuit	U114		43.803003	1	11739202.588727
14S5A12506	Integrated Circuit	U118		43.803003	1	11739202.588727
14S9341101	Integrated Circuit	U58,U59		43.803003	2	6834791.244197
14S9811500	Integrated Circuit	U22		43.803003	1	11739202.588727
1540722281	Resistor	RP9		9.971436	1	51606907.671214
1540733085	Resistor	RP10		9.971436	1	51606907.671214
1540782282	Resistor	RP11,RP12		9.971436	2	30043399.401299
1601PB6130	Connection	SW1		16.184835	1	35685591.360212
1651526000	Connection	DIMM1		16.184835	1	35685591.360212
1651526001	Connection	DIMM2		16.184835	1	35685591.360212
1651611510	Connection	U71		16.184835	1	35685591.360212
1652003101	Connection	CN2		16.184835	1	35685591.360212
1652532207	Connection	CN14,CN15		16.184835	2	20390152.380746
1652602107	Connection	CN20		16.184835	1	35685591.360212
1652709202	Connection	CN18		16.184835	1	35685591.360212
1652814202	Connection	CN44		16.184835	1	35685591.360212
1652828200	Connection	CN27,CN28,C N29		16.184835	3	14515880.849373
1653003101	Connection	JP10,JP19,JP 23, JP24		16.184835	4	11344857.509064
1653003201	Connection	JP25		16.184835	1	35685591.360212
165300420Q	Connection	CN7		16.184835	1	35685591.360212
1653300107	Connection	JP24(1- 2),P25(1-2), P25(3-4),P25 (5-6)		16.184835	4	11344857.509064
165330010E	Connection	JP10(2-3), JP19(1-2), JP23(2-3)		16.184835	3	14515880.849373
1654226303	Connection	PCIE1,PCIE2		16.184835	2	20390152.380746
1654232203	Connection	CN8		16.184835	1	35685591.360212
1654401935	Connection	CN3,CN4		16.184835	2	20390152.380746
1654409103	Connection	CN30		16.184835	1	35685591.360212
1654515308	Connection	CN1		16.184835	1	35685591.360212
1654800833	Connection	CN22		16.184835	1	35685591.360212
1654801830	Connection	CN21,CN25		16.184835	2	20390152.380746
1654903900	Connection	SIM1		16.184835	1	35685591.360212
165490700G	Connection	SATA1		16.184835	1	35685591.360212
1655004011	Connection	PWR1		16.184835	1	35685591.360212
1655103010	Connection	CN24		16.184835	1	35685591.360212
1655302020	Connection	CN36		16.184835	1	35685591.360212
1655802133	Connection	BAT1		16.184835	1	35685591.360212

**Reliability Prediction
Summary**

File Name: BOXER-6640M.rfp
Assembly: 9697SKS301-D
Ref Des:
Description:

Failure Rate: 11367.751596
MTBF (hrs): 87,968
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1655805033	Connection	CN45,CN46		16.184835	2	20390152.380746
1655912032	Connection	LPC1		16.184835	1	35685591.360212
175011301C	Connection	BAT1-CR		16.184835	1	35685591.360212
1752001900	Miscellaneous	FS2,FS3,FS4		2.400000	3	101854599.204190
1752011002	Miscellaneous	FS1		2.400000	1	254626042.602335
175910000B	Miscellaneous	BZ1		2.400000	1	254626042.602335