

# BOXER-6640

## Reliability Prediction Report (MTBF)

Summary	Failure Rate: 8725.418214 MTBF: 114,608 Hours
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Issue date

QE Manager

Test Engineer

2017-09-25

KJ Wang

Leo Liu

# Reliability Prediction (MTBF)

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**I . Model Name:** BOXER-6640

**II . Prediction Date:** September. 25, 2017

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

**IV . Predicted by:** Leo Liu

**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-6640 (M/B: 9697SKS201-D):

- Failure Rate: 8725.418214
- MTBF: 114,608 Hours

**AAEON Reliability Prediction  
Summary**

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

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
BOXER-6640	9697SKS201-D		1	8725.418214	114,608

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050500104	Resistor	R637,R656,R683, R705,R794		2.547039	5	67008142.102588
1050501004	Resistor	R623,R624,R627, R628		2.547039	4	82309758.689546
1050501054	Resistor	R20,R22,R224,R29, R30,R438,R737,R766		2.547039	8	43225424.698300
1050502004	Resistor	R406,R411,R852		2.547039	3	107020754.986850
1050502204	Resistor	R108,R109,R154, R155		2.547039	4	82309758.689546
1050502224	Resistor	R275,R303,R304, R305,R324,R326, R332,R338,R342, R348,R349,R350, R507,R508,R509, R510,R664,R791, R795		2.547039	19	19019185.781770
1050502234	Resistor	R838		2.547039	1	282340674.079668
1050502724	Resistor	R862		2.547039	1	282340674.079668
1050502734	Resistor	R124		2.547039	1	282340674.079668
1050503324	Resistor	R146,R73		2.547039	2	154078778.388085
1050504724	Resistor	R152,R159,R208, R414,R481,R482, R651,R709,R716, R726		2.547039	10	35079934.879747
1050504734	Resistor	R227		2.547039	1	282340674.079668
1050504764	Resistor	R76		2.547039	1	282340674.079668
1050505124	Resistor	R25,R700		2.547039	2	154078778.388085
1050505134	Resistor	R235,R443,R764, R855		2.547039	4	82309758.689546
1050505164	Resistor	R376,R837		2.547039	2	154078778.388085
1050507524	Resistor	R56		2.547039	1	282340674.079668
1050510004	Resistor	R169,R177,R192, R195,R199,R586, R594,R598,R610, R612,R863		2.547039	11	32049696.385471

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1050510014	Resistor	R257,R270,R291, R321,R372,R395, R452,R497,R613, R615,R719,R720,R75, R812,R843		2.547039	15	23852782.943395
1050510024	Resistor	R137,R138,R156, R180,R211,R213, R217,R229,R234, R240,R258,R26,R263, R298,R299,R31,R316, R318,R319,R352, R360,R386,R387, R396,R402,R419, R421,R422,R425, R445,R459,R461,R51, R526,R527,R528, R538,R542,R548, R557,R560,R561, R563,R568,R592, R597,R602,R643, R66		2.547039	82	4596628.018709
1050510034	Resistor	R145,R17,R18,R246, R280,R302,R346, R355,R587,R622, R625,R626,R629, R706,R718,R786, R804		2.547039	17	21160422.299251
1050512724	Resistor	R448		2.547039	1	282340674.079668
1050517424	Resistor	R113		2.547039	1	282340674.079668
1050520014	Resistor	R129,R730		2.547039	2	154078778.388085
1050520034	Resistor	R110,R114		2.547039	2	154078778.388085

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1050522124	Resistor	R105		2.547039	1	282340674.079668
1050524004	Resistor	R225,R242		2.547039	2	154078778.388085
1050524324	Resistor	R80		2.547039	1	282340674.079668
1050524904	Resistor	R264,R311,R331, R333		2.547039	4	82309758.689546
1050524909	Resistor	R206,R243		2.547039	2	154078778.388085
1050524924	Resistor	R442		2.547039	1	282340674.079668
1050525524	Resistor	R72		2.547039	1	282340674.079668
1050526124	Resistor	R89		2.547039	1	282340674.079668
1050528714	Resistor	R847		2.547039	1	282340674.079668
1050530164	Resistor	R821,R823,R826		2.547039	3	107020754.986850
1050530914	Resistor	R760		2.547039	1	282340674.079668
1050533034	Resistor	R144,R854		2.547039	2	154078778.388085
1050533064	Resistor	R271,R272,R273, R274		2.547039	4	82309758.689546
1050536514	Resistor	R121		2.547039	1	282340674.079668
1050540214	Resistor	R100,R104		2.547039	2	154078778.388085
1050542214	Resistor	R127,R136,R147, R632		2.547039	4	82309758.689546
1050545364	Resistor	R584		2.547039	1	282340674.079668
1050547004	Resistor	R241		2.547039	1	282340674.079668
1050547034	Resistor	R122		2.547039	1	282340674.079668
1050549904	Resistor	R365		2.547039	1	282340674.079668
1050556269	Resistor	R167		2.547039	1	282340674.079668
1050560414	Resistor	R477,R848		2.547039	2	154078778.388085
1050561934	Resistor	R684		2.547039	1	282340674.079668
1050573214	Resistor	R353		2.547039	1	282340674.079668
1050700002	Resistor	R475,R493		2.547039	2	154078778.388085

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1050700004	Resistor	R103,R116,R118, R134,R149,R157, R158,R160,R161, R166,R173,R176, R178,R194,R215, R219,R223,R228, R232,R24,R244,R245, R256,R28,R288,R289, R292,R293,R295, R296,R301,R312, R317,R32,R322,R323, R334,R335,R359, R378,R382,R388, R389,R393,R403, R408,R413,R430, R44		2.547039	115	3298100.613830
1050701004	Resistor	R87		2.547039	1	282340674.079668
1050701034	Resistor	R111,R125,R128, R198,R380,R427, R525,R567,R682, R714,R768		2.547039	11	32049696.385471
1050701044	Resistor	R132,R401,R440, R660,R669,R677, R691,R841,R845		2.547039	9	38754445.632391
1050701504	Resistor	R279,R746,R776		2.547039	3	107020754.986850
1050703054	Resistor	R504,R506		2.547039	2	154078778.388085
1050710014	Resistor	R494,R604,R676, R748,R830		2.547039	5	67008142.102588



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1050747014	Resistor	R115,R120,R405, R429,R463,R464, R465,R466,R467, R468,R469,R470, R517,R518,R534, R536,R537,R547, R549,R556,R558, R571,R572,R59, R60,R65,R66,R671, R674,R678,R68,R681, R686,R692,R696,R699, R99		2.547039	37	9991988.939157
1050756004	Resistor	R665,R839		2.547039	2	154078778.388085
1053500282	Resistor	R479,R657,R814, R833		2.547039	4	82309758.689546
1053501289	Resistor	R540,R566		2.547039	2	154078778.388085
1053502099	Resistor	R630		2.547039	1	282340674.079668
1054500289	Resistor	R162		2.547039	1	282340674.079668
1054700289	Resistor	R204		2.547039	1	282340674.079668
1059700001	Resistor	R151,R179,R184, R197,R444,R472, R608,R636,R655, R687,R721,R851		2.547039	12	29507083.749401
1059702261	Resistor	R599		2.547039	1	282340674.079668
105A500103	Resistor	R658		2.547039	1	282340674.079668
105A500133	Resistor	R471		2.547039	1	282340674.079668
105A500139	Resistor	R550		2.547039	1	282340674.079668
105A501003	Resistor	R634,R653,R680, R707		2.547039	4	82309758.689546
105A501033	Resistor	R371,R384,R391, R398,R40		2.547039	5	67008142.102588
105A501053	Resistor	R864		2.547039	1	282340674.079668
105A501139	Resistor	R763		2.547039	1	282340674.079668
105A501313	Resistor	R9		2.547039	1	282340674.079668
105A501333	Resistor	R45		2.547039	1	282340674.079668

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105A501529	Resistor	R488,R596,R609		2.547039	3	107020754.986850
105A501539	Resistor	R329		2.547039	1	282340674.079668
105A501829	Resistor	R5,R6		2.547039	2	154078778.388085
105A502039	Resistor	R428,R478,R480, R710,R731,R805, R869		2.547039	7	48991237.965885
105A503039	Resistor	R140		2.547039	1	282340674.079668
105A504703	Resistor	R611,R616		2.547039	2	154078778.388085
105A505109	Resistor	R361,R367,R379, R392,R803,R811, R815,R817		2.547039	8	43225424.698300
105A506829	Resistor	R14,R15		2.547039	2	154078778.388085
105A506834	Resistor	R670		2.547039	1	282340674.079668
105A507509	Resistor	R11,R12,R13, R168, R498,R499,R500		2.547039	7	48991237.965885
105A507533	Resistor	R186		2.547039	1	282340674.079668
105A508233	Resistor	R131		2.547039	1	282340674.079668
105A510033	Resistor	R49		2.547039	1	282340674.079668
105A510223	Resistor	R185,R287		2.547039	2	154078778.388085
105A510733	Resistor	R53		2.547039	1	282340674.079668
105A511303	Resistor	R370		2.547039	1	282340674.079668
105A512109	Resistor	R412		2.547039	1	282340674.079668
105A512133	Resistor	R93		2.547039	1	282340674.079668
105A520023	Resistor	R373,R390		2.547039	2	154078778.388085
105A520033	Resistor	R673		2.547039	1	282340674.079668
105A522003	Resistor	R172		2.547039	1	282340674.079668
105A522123	Resistor	R41		2.547039	1	282340674.079668
105A524963	Resistor	R415		2.547039	1	282340674.079668
105A530113	Resistor	R529		2.547039	1	282340674.079668
105A534819	Resistor	R446		2.547039	1	282340674.079668
105A534823	Resistor	R233		2.547039	1	282340674.079668
105A543223	Resistor	R142		2.547039	1	282340674.079668
105A544229	Resistor	R492		2.547039	1	282340674.079668
105A549919	Resistor	R521,R522,R535		2.547039	3	107020754.986850
105A549963	Resistor	R307,R595		2.547039	2	154078778.388085
105A553629	Resistor	R139		2.547039	1	282340674.079668
105A562034	Resistor	R354		2.547039	1	282340674.079668
105A563419	Resistor	R285		2.547039	1	282340674.079668
105A571539	Resistor	R112		2.547039	1	282340674.079668
105A575009	Resistor	R850		2.547039	1	282340674.079668

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A700003	Resistor	FB14,FB15,R10,R16,R188,R19,R196,R212,R236,R278,R284,R310,R314,R336,R339,R345,R357,R358,R407,R409,R410,R439,R46,R460,R485,R486,R487,R575,R583,R638,R639,R642,R649,R667,R697,R722,R732,R734,R735,R739,R743,R793,R866,R868,R871,R91,R94		2.547039	47	7918121.839508
105A700203	Resistor	R259,R290		2.547039	2	154078778.388085
105A701033	Resistor	R363,R364,R723, R724		2.547039	4	82309758.689546
105A701059	Resistor	R193		2.547039	1	282340674.079668
105A701069	Resistor	R788		2.547039	1	282340674.079668
105A702229	Resistor	R117,R123,R141,R473,R474		2.547039	5	67008142.102588
105A702263	Resistor	R181,R187,R205,R633,R635,R652,R679,R708		2.547039	8	43225424.698300
105A702269	Resistor	R57		2.547039	1	282340674.079668
105A702433	Resistor	R130,R853		2.547039	2	154078778.388085
105A703003	Resistor	R385		2.547039	1	282340674.079668
105A703309	Resistor	R3,R4,R751,R785, R867		2.547039	5	67008142.102588
105A703329	Resistor	R603,R606,R607,R618,R620		2.547039	5	67008142.102588
105A704303	Resistor	R343		2.547039	1	282340674.079668

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105A705139	Resistor	R431,R449,R450, R451,R483,R484		2.547039	6	56573956.677649
105A708229	Resistor	R297,R300,R327,R50, R52,R747,R750,R783, R849		2.547039	9	38754445.632391
105A710009	Resistor	R101,R102,R106, R107,R207,R54,R55		2.547039	7	48991237.965885
105A710039	Resistor	R562,R564,R573, R574		2.547039	4	82309758.689546
105A715003	Resistor	R35,R36,R37,R38, R515,R516,R7,R8		2.547039	8	43225424.698300
105A733009	Resistor	R1,R2,R489, R490		2.547039	4	82309758.689546
105A747009	Resistor	R143,R200,R216, R399,R457,R646		2.547039	6	56573956.677649
105A747033	Resistor	R44		2.547039	1	282340674.079668
105B700009	Resistor	R42		2.547039	1	282340674.079668
106B500144	Resistor	RT4,RT5		2.547039	2	154078778.388085
106B510034	Resistor	RT1,RT2,RT3,RT6		2.547039	4	82309758.689546
1121501680	Capacitor	C387		1.128806	1	704977644.692287

**Reliability Prediction  
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1121501690	Capacitor	C101,C107,C111, C114,C122,C135, C140,C143,C146, C147,C149,C150, C151,C152,C156, C158,C159,C162, C164,C188,C206, C213,C214,C215, C216,C218,C219, C232,C248,C252, C260,C273,C280, C281,C289,C294, C296,C311,C324, C336,C337,C340, C348,C349,C350, C351,C352,C355,		1.128806	204	4267932.519867
1121610180	Capacitor	C604,C616,C617, C621		1.128806	4	196873384.410843
1122522890	Capacitor	C290,C322		1.128806	2	375289731.076049
1124418090	Capacitor	C7,C715,C727,C8		1.128806	4	196873384.410843
1124420090	Capacitor	C30,C31		1.128806	2	375289731.076049
1124422080	Capacitor	C729,C732,C735, C739		1.128806	4	196873384.410843
1124427090	Capacitor	C519,C522		1.128806	2	375289731.076049
1124427190	Capacitor	C137,C138		1.128806	2	375289731.076049
1124433090	Capacitor	C309,C404		1.128806	2	375289731.076049
1124433190	Capacitor	C105,C557		1.128806	2	375289731.076049

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1124547190	Capacitor	C117,C119,C127, C139,C20,C21,C429, C430,C431,C432, C433,C434,C435, C436,C459,C460, C461,C462,C463, C464,C465,C483, C484,C555		1.128806	24	35120617.936543
1129701790	Capacitor	C110,C116,C646, C652,C657,C662,C68, C69,C70,C71,C72, C73,C74,C75,C76, C77,C78,C79,C95		1.128806	19	44097696.883526
1129710090	Capacitor	C4,C5,C6,C728		1.128806	4	196873384.410843
1129710390	Capacitor	C141,C144,C212, C561,C592,C670		1.128806	6	133979725.056342
1129722091	Capacitor	C10,C11,C148,C515, C516,C697		1.128806	6	133979725.056342
1129747090	Capacitor	C125,C131,C680		1.128806	3	257514172.353070
11816151D0	Capacitor	TC1,TC2,TC3,TC4		1.128806	4	196873384.410843
1182633190	Capacitor	C132,C163		1.128806	2	375289731.076049
1189615154	Capacitor	C198,C2,C405,C406, C46,C471,C474,C511, C756,C758,C759, C766,C769		1.128806	13	63728475.410842
1189633091	Capacitor	C45,C47		1.128806	2	375289731.076049
1189633151	Capacitor	C275,C632		1.128806	2	375289731.076049
1189656196	Capacitor	C177,C207,C442, C443		1.128806	4	196873384.410843
1189933180	Capacitor	C689,C690		1.128806	2	375289731.076049

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**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
118C639191	Capacitor	C165,C166,C167, C168,C185,C195, C210,C247,C293, C328		1.128806	10	82101057.548118
11A4410194	Capacitor	C28,C29,C36, C37, C410,C424,C449, C450		1.128806	8	101746760.035398
11A4422190	Capacitor	C360		1.128806	1	704977644.692287
11A4950640	Capacitor	C666,C667		1.128806	2	375289731.076049
11C1522480	Capacitor	C104,C121		1.128806	2	375289731.076049
11C1539841	Capacitor	C100		1.128806	1	704977644.692287
11C2522480	Capacitor	C356		1.128806	1	704977644.692287
11C4501050	Capacitor	C54,C556		1.128806	2	375289731.076049
11C4501650	Capacitor	C124,C180,C181,C56		1.128806	4	196873384.410843
11C4501790	Capacitor	C157,C685		1.128806	2	375289731.076049
11C4510480	Capacitor	C677		1.128806	1	704977644.692287
11C4522240	Capacitor	C129,C133,C282, C398,C549,C573, C579,C584,C590, C605,C663		1.128806	11	74892583.279796
11C4533380	Capacitor	C297		1.128806	1	704977644.692287
11C4556690	Capacitor	C153,C684		1.128806	2	375289731.076049
11C4568240	Capacitor	C582,C588		1.128806	2	375289731.076049
11C5501650	Capacitor	C12,C55,C80, C81		1.128806	4	196873384.410843
11E1501040	Capacitor	C193,C683,C99		1.128806	3	257514172.353070
11E1501080	Capacitor	C368,C369,C737		1.128806	3	257514172.353070
11E1510050	Capacitor	C112,C316,C317, C634,C642,C675		1.128806	6	133979725.056342
11E2501080	Capacitor	C176,C191,C231, C308,C565,C626, C635,C653,C736		1.128806	9	90863428.080946

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E2501690	Capacitor	C118,C13,C130,C145,C16,C19,C22,C23,C24,C245,C32,C33,C34,C379,C384,C481,C482,C485,C486,C487,C490,C560,C566,C572,C575,C586,C589,C591,C606,C658,C693		1.128806	31	27349602.091781
11E2510010	Capacitor	C170,C171,C172,C182,C183,C184,C201,C202,C203,C257,C258,C259,C567,C568,C569,C570		1.128806	16	52112480.802928
11E2522060	Capacitor	C142,C678,C679		1.128806	3	257514172.353070
11E2522090	Capacitor	C547,C548,C553,C554,C559		1.128806	5	159367490.199266
11E3510012	Capacitor	C44		1.128806	1	704977644.692287
11E4510022	Capacitor	C186,C189,C194,C197,C301,C303,C491,C492,C494,C512,C513,C577		1.128806	12	68856937.301178
11E4547610	Capacitor	C594		1.128806	1	704977644.692287
11E9510490	Capacitor	C82,C83,C94,C96		1.128806	4	196873384.410843
11E9547680	Capacitor	C108		1.128806	1	704977644.692287
11E9622050	Capacitor	C200,C380,C401,C413		1.128806	4	196873384.410843
11E9622052	Capacitor	C249,C571,C691		1.128806	3	257514172.353070



**Reliability Prediction  
Summary**

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9622080	Capacitor	C173,C174,C175, C179,C190,C192, C199,C205,C209, C220,C221,C222, C223,C224,C225, C226,C227,C228, C229,C234,C235, C236,C237,C238, C239,C240,C241, C251,C253,C254, C255,C264,C265, C266,C268,C269, C270,C276,C283, C286,C287,C292, C300,C304,C314, C315,C362,C363, C353,C358,C466, C580		1.128806	86	10030762.325574
11EA610030	Capacitor	C353,C358,C466, C580		1.128806	4	196873384.410843

**Reliability Prediction  
Summary**

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EA610040	Capacitor	C243,C261,C267,C271,C272,C274,C279,C284,C288,C298,C299,C306,C310,C312,C313,C319,C329,C330,C331,C334,C338,C341,C342,C344,C376,C578,C585,C587,C598,C607,C623,C628,C672,C674,C688,C694,C695,C707,C710		1.128806	39	21841170.168719
11EA647010	Capacitor	C187,C233,C244,C325,C326,C332,C333,C649		1.128806	8	101746760.035398

**Reliability Prediction  
Summary**

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EB501040	Capacitor	C102,C103,C169,C17,C178,C18,C196,C217,C263,C278,C305,C307,C318,C320,C321,C327,C335,C343,C345,C346,C347,C354,C365,C367,C378,C383,C386,C39,C393,C394,C41,C412,C417,C418,C422,C423,C425,C426,C437,C439,C448,C458,C468,C542,C593,C599,C641,C648,C66,C		1.128806	66	13022034.735679
11EB522640	Capacitor	C128,C295,C323,C53,C532,C541		1.128806	6	133979725.056342

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EB610050	Capacitor	C1,C109,C14,C15,C204,C208,C211,C230,C242,C246,C25,C26,C262,C285,C3,C35,C381,C385,C388,C391,C392,C395,C397,C411,C43,C472,C475,C479,C480,C514,C523,C631,C65,C67,C701,C712,C726,C731,C734,C738,C749,C750,C752,C754,C760,C761,C767,C768,C89,C90		1.128806	50	17113035.871263
121110106W	Inductor	L1		4.944252	1	154760964.143460
121110156P	Inductor	L4		4.944252	1	154760964.143460
121110156X	Inductor	L9		4.944252	1	154760964.143460
1211101573	Inductor	L10,L5,L6,L8		4.944252	4	43912872.424775
121110226X	Inductor	L11,L14		4.944252	2	83201062.149749
121110476V	Inductor	L3		4.944252	1	154760964.143460
1211106879	Inductor	L13		4.944252	1	154760964.143460
1211122076	Inductor	L12,L7		4.944252	2	83201062.149749
121113307R	Inductor	L2		4.944252	1	154760964.143460
121230603S	Inductor	FB10,FB2,FB23,FB24,FB25,FB3,FB4,FB5,FB6,FB7		4.944252	10	18485101.557872
1212308054	Inductor	FB1,FB12,FB21,FB22,FB26,FB27,FB28,FB32,FB33,FB34,FB35,FB36,FB8,FB9		4.944252	14	13381951.576219
12123A000E	Inductor	FB29,FB30		4.944252	2	83201062.149749

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
12123C000E	Inductor	FB11,FB13,F B16, FB31		4.944252	4	43912872.424775
12123D0009	Inductor	FB17,FB18,F B19, FB20		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 H3,CH4, CH5,CH6,CH 7,CH8, CH9		4.944252	26	7349878.425617
12310024A2	Miscellaneous	Y6		19.200000	1	23844262.770939
12310025A5	Miscellaneous	Y2		19.200000	1	23844262.770939
12310027A3	Miscellaneous	Y1		19.200000	1	23844262.770939
123132505D	Miscellaneous	Y3		19.200000	1	23844262.770939
1231327610	Miscellaneous	Y5		19.200000	1	23844262.770939
1233348051	Miscellaneous	Y4		19.200000	1	23844262.770939
1300414841	Semiconductor	D18		7.793411	1	92807310.010983
1301003440	Semiconductor	D50,D51		7.793411	2	50578095.223398
1301005440	Semiconductor	D22,D23,D29 ,D36		7.793411	4	26989084.126235
1301005442	Semiconductor	D2,D24,D26		7.793411	3	35106858.962001
1301005447	Semiconductor	D53		7.793411	1	92807310.010983
1301013041	Semiconductor	D17,D4,D48, D49		7.793411	4	26989084.126235
1301400541	Semiconductor	D47		7.793411	1	92807310.010983
1301400640	Semiconductor	D20		7.793411	1	92807310.010983
1301400642	Semiconductor	D1		7.793411	1	92807310.010983
1301793040	Semiconductor	D21,D27,D28 ,D37, D44,D52		7.793411	6	18540453.699406
1302052320	Semiconductor	D19		7.793411	1	92807310.010983
1304001121	Optical Device	LED1		79.003355	1	6497172.749112
1304001340	Optical Device	LED3		79.003355	1	6497172.749112
1304300140	Optical Device	LED2		79.003355	1	6497172.749112

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1305080040	Semiconductor	D10,D12,D13 ,D15, D16,D30,D31 ,D32, D33,D34,D35 ,D38, D39,D40,D41 ,D42, D43,D6,D7,D 9,U48, U54,U55,U56		7.793411	24	4971537.606722
13050J58A0	Semiconductor	D3		7.793411	1	92807310.010983
1305100541	Semiconductor	D46,U1,U2,U 3,U4,U5, U6,U7		7.793411	8	14161142.003130
1310390410	Semiconductor	Q23,Q39,Q4 6,Q48		22.463360	4	9270607.712006
13150123N0	Semiconductor	Q29,Q30,Q3 1		22.463360	3	12043329.789539
1315049820	Semiconductor	Q32,Q35,Q3 6,Q40, Q41,Q44,Q4 5,Q51, Q52		22.463360	9	4366472.106532
1315060301	Semiconductor	Q34,Q38,Q4 3,Q49, Q50,Q54,Q5 7,Q60, Q61		22.463360	9	4366472.106532
1315200312	Semiconductor	Q55,Q56		22.463360	2	17315095.066101
1315230211	Semiconductor	Q17,Q18		22.463360	2	17315095.066101
1315700216	Semiconductor	Q1,Q10,Q11, Q12,Q13, Q16,Q19,Q2, Q20,Q21, Q22,Q24,Q2 5,Q26, Q27,Q28,Q7		22.463360	17	2391128.567891
1315EM6K10	Semiconductor	Q14,Q15,Q4, Q5,Q6, Q8,Q9		22.463360	7	5525968.936223
1315S4C500	Semiconductor	Q37,Q42,Q4 7,Q53		22.463360	4	9270607.712006
1315S4C550	Semiconductor	Q33		22.463360	1	31642600.748419
142PS83390	Integrated Circuit	U67,U68		43.803003	2	6834791.244197
1430006850	Integrated Circuit	U84		43.803003	1	11739202.588727
1430080650	Integrated Circuit	U25,U86		43.803003	2	6834791.244197
1430082021	Integrated Circuit	U35,U47,U83		43.803003	3	4923240.069161
1430097420	Integrated Circuit	U19,U59,U60 ,U69,U8, U88,U89,U90 ,U91, U92		43.803003	10	1762784.467435

**File Name:** BOXER-6640.rfp  
**Assembly:** 9697SKS201-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 8725.418214  
**MTBF (hrs):** 114,608  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1430455200	Integrated Circuit	U29,U32,U34, U43, U49		43.803003	5	3214211.402100
1430532190	Integrated Circuit	U73		43.803003	1	11739202.588727
1430811460	Integrated Circuit	U28,U30,U31, U33		43.803003	4	3879156.910661
1430812430	Integrated Circuit	U23		43.803003	1	11739202.588727
143117ADJ0	Integrated Circuit	U45		43.803003	1	11739202.588727
143ALC8920	Integrated Circuit	U87		43.803003	1	11739202.588727
14400H1100	Integrated Circuit	U85		43.803003	1	11739202.588727
1440211AT0	Integrated Circuit	U71		43.803003	1	11739202.588727
1440219LM0	Integrated Circuit	U70		43.803003	1	11739202.588727
14407517A1	Integrated Circuit	U16		43.803003	1	11739202.588727
14590AUP10	Integrated Circuit	U27		43.803003	1	11739202.588727
14909665T0	Integrated Circuit	U20		43.803003	1	11739202.588727
14S3104500	Integrated Circuit	D11,D14,D5, D8,U10, U11,U12,U13, U14, U15,U61,U62, U63, U64,U65,U66		43.803003	16	1158014.242339
14S3378900	Integrated Circuit	U21		43.803003	1	11739202.588727
14S3528000	Integrated Circuit	U18		43.803003	1	11739202.588727
14S3820700	Integrated Circuit	U41		43.803003	1	11739202.588727
14S3902500	Integrated Circuit	U46		43.803003	1	11739202.588727
14S4021301	Integrated Circuit	U50,U51,U52		43.803003	3	4923240.069161
14S4186600	Integrated Circuit	U74		43.803003	1	11739202.588727
14S4814380	Integrated Circuit	U53		43.803003	1	11739202.588727
14S4911216	Integrated Circuit	U24		43.803003	1	11739202.588727
14S5974741	Integrated Circuit	U44		26.018600	1	25551442.237972
14S5A00702	Integrated Circuit	U26		26.018600	1	25551442.237972
14S5A00821	Integrated Circuit	U36,U37,U38, U40, U42,U75,U76, U77, U78,U79,U80, U82		26.018600	12	2804542.344270
14S9811500	Integrated Circuit	U17		43.803003	1	11739202.588727
1540722281	Resistor	RP2		9.971436	1	51606907.671214
1540733085	Resistor	RP1		9.971436	1	51606907.671214
1540782282	Resistor	RP3,RP4		9.971436	2	30043399.401299
1651526000	Connection	DIMM1		16.184835	1	35685591.360212
1651526001	Connection	DIMM2		16.184835	1	35685591.360212
1651611510	Integrated Circuit	U81		43.803003	1	11739202.588727
1752001603	Miscellaneous	F1,F2,F3,F4, F5,FS4, FS5		2.400000	7	48163316.738466
1752001900	Miscellaneous	FS1,FS2,FS3		2.400000	3	101854599.204190
1752011002	Miscellaneous	FS6		2.400000	1	254626042.602335