

# EPB-CV101

## Reliability Prediction Report (MTBF)

Summary	Failure Rate: 10921.996449 ppm MTBF: 91,558 Hours
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Issue date	Approval	Test Engineer
2014/05/16	Tom Lin	Louie Lee

# Reliability Prediction (MTBF)

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**I . Model Name:** EPB-CV101

**II . Prediction Date:** May. 16th, 2014

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

**IV . Predicted by:** Louie Lee

**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:**

EPB-CV101 (9697CVA10D-D):

- Failure Rate: 10921.996449 ppm
- MTBF: 91,558 Hours

**File Name:** EPB-CV101.rfp  
**Duty Cycle:** 100  
**Calculation Model:** Telcordia Issue 2  
**Method:** Method I Case 3

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
EPB-CV101	9697CVA10D-D		1	10921.996449	91,558

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050500334	Resistor	R253		2.547039	1	282340674.079668
1050501004	Resistor	R205,R226		2.547039	2	154078778.388085
1050501054	Resistor	R124		2.547039	1	282340674.079668
1050501234	Resistor	R822		2.547039	1	282340674.079668
1050501634	Resistor	R392		2.547039	1	282340674.079668
1050502204	Resistor	R235,R236		2.547039	2	154078778.388085
1050502224	Resistor	R183,R192,R 201, R212,R229,R 248, R262,R263,R 554, R562,R567,R 574, R654,R655,R 666, R667,R677,R 678, R679,R680,R 681, R682,R683,R 684, R738		2.547039	25	14603612.751152
1050503334	Resistor	R736		2.547039	1	282340674.079668
1050504724	Resistor	R128,R200,R 385, R386,R409,R 411, R412,R415,R 420, R429,R515,R 539, R596		2.547039	13	27342571.921361
1050504764	Resistor	R314,R338,R 382		2.547039	3	107020754.986850
1050505124	Resistor	R161,R54,R7 84		2.547039	3	107020754.986850
1050505134	Resistor	R365,R467,R 468, R469,R470,R 471, R472,R473,R 474, R739,R740,R 741, R742		2.547039	13	27342571.921361
1050507524	Resistor	R162,R506		2.547039	2	154078778.388085

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050510034	Resistor	R111,R112,R140, R166,R300,R312, R376,R455,R495, R518,R537,R581, R597,R604,R644, R652,R663,R676, R780,R94,R95		2.547039	21	17274945.076062
1050511009	Resistor	R370,R593		2.547039	2	154078778.388085
1050512104	Resistor	R526		2.547039	1	282340674.079668
1050515034	Resistor	R330		2.547039	1	282340674.079668
1050516924	Resistor	R366		2.547039	1	282340674.079668
1050520034	Resistor	R375		2.547039	1	282340674.079668
1050524004	Resistor	R115,R168,R219, R315,R523,R589, R656,R692,R74		2.547039	9	38754445.632391
1050524904	Resistor	R508		2.547039	1	282340674.079668
1050530034	Resistor	R363		2.547039	1	282340674.079668
1050530164	Resistor	R457,R458		2.547039	2	154078778.388085
1050533004	Resistor	R31,R33,R395,R396, R397,R398,R399, R400,R401,R402, R403,R59		2.547039	12	29507083.749401
1050547004	Resistor	R421,R422,R423, R424,R425,R426, R427,R428		2.547039	8	43225424.698300
1050551004	Resistor	R227,R231,R249, R379		2.547039	4	82309758.689546
1050560434	Resistor	R348		2.547039	1	282340674.079668
1050561934	Resistor	R351		2.547039	1	282340674.079668
1050562004	Resistor	R321		2.547039	1	282340674.079668
1050590964	Resistor	R548,R557,R579, R607		2.547039	4	82309758.689546
1050700002	Resistor	FB18,FB31		2.547039	2	154078778.388085
1050718034	Resistor	R295		2.547039	1	282340674.079668
1051501582	Resistor	R545		2.547039	1	282340674.079668

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

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**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1054700289	Resistor	R275,R303,R75		2.547039	3	107020754.986850
1059700001	Resistor	R566,R770		2.547039	2	154078778.388085
1059710001	Resistor	R173,R181		2.547039	2	154078778.388085
1059722001	Resistor	R189		2.547039	1	282340674.079668
105A500103	Resistor	R291,R344,R352		2.547039	3	107020754.986850
105A500139	Resistor	R1,R107,R108,R131,R132,R251,R475,R478,R491,R492,R511,R512,R514,R528,R565,R622,R646,R651,R658,R659,R664,R669,R68,R687,R69,R72,R73,R795,R875,R876,R89,R90,R91,R92		2.547039	34	10846303.620910
105A500239	Resistor	R255,R735,R83		2.547039	3	107020754.986850

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**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A501039	Resistor	R11,R116,R117,R12,R13,R159,R196,R203,R204,R243,R244,R245,R246,R272,R280,R294,R331,R337,R339,R353,R358,R361,R371,R377,R381,R384,R390,R391,R48,R483,R507,R516,R530,R531,R532,R533,R534,R535,R583,R584,R588,R592,R600,R602,R606,R611,R619,R620,R621		2.547039	62	6043178.840887
105A501333	Resistor	R276,R324		2.547039	2	154078778.388085
105A501529	Resistor	R322		2.547039	1	282340674.079668
105A501533	Resistor	R109,R110,R517		2.547039	3	107020754.986850
105A502039	Resistor	R26,R333,R387,R51,R585,R586,R696,R711		2.547039	8	43225424.698300
105A503039	Resistor	R296		2.547039	1	282340674.079668
105A503309	Resistor	R237,R238,R239,R240,R274,R551,R555,R577,R613,R625,R66,R818		2.547039	12	29507083.749401
105A504763	Resistor	R311		2.547039	1	282340674.079668
105A505109	Resistor	R626,R635,R641,R642,R648,R665		2.547039	6	56573956.677649



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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A505629	Resistor	R325,R326,R372		2.547039	3	107020754.986850
105A505633	Resistor	R393		2.547039	1	282340674.079668
105A506834	Resistor	R863		2.547039	1	282340674.079668
105A507509	Resistor	R155,R16,R17,R18, R599		2.547039	5	67008142.102588
105A507533	Resistor	R122		2.547039	1	282340674.079668
105A510009	Resistor	R202,R354,R357, R367,R521,R603, R721,R722,R724, R725		2.547039	10	35079934.879747
105A512009	Resistor	R416,R417,R418, R419		2.547039	4	82309758.689546
105A512039	Resistor	R190,R364		2.547039	2	154078778.388085
105A513033	Resistor	R309,R310		2.547039	2	154078778.388085
105A514014	Resistor	R633		2.547039	1	282340674.079668
105A515009	Resistor	R19,R20,R21, R563, R568,R571		2.547039	6	56573956.677649
105A518229	Resistor	R101		2.547039	1	282340674.079668
105A519629	Resistor	R6		2.547039	1	282340674.079668
105A522663	Resistor	R631		2.547039	1	282340674.079668
105A522669	Resistor	R627		2.547039	1	282340674.079668
105A523713	Resistor	R154		2.547039	1	282340674.079668
105A524913	Resistor	R465,R62,R63		2.547039	3	107020754.986850
105A524963	Resistor	R608		2.547039	1	282340674.079668
105A527403	Resistor	R645		2.547039	1	282340674.079668
105A529423	Resistor	R509		2.547039	1	282340674.079668
105A533269	Resistor	R632		2.547039	1	282340674.079668
105A534819	Resistor	R102		2.547039	1	282340674.079668
105A539003	Resistor	R549		2.547039	1	282340674.079668
105A549969	Resistor	R118,R169,R170, R639,R640		2.547039	5	67008142.102588
105A553629	Resistor	R301,R355		2.547039	2	154078778.388085
105A554969	Resistor	R362,R552		2.547039	2	154078778.388085
105A560469	Resistor	R498		2.547039	1	282340674.079668
105A561924	Resistor	R350		2.547039	1	282340674.079668
105A568103	Resistor	R575		2.547039	1	282340674.079668

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A700003	Resistor	R10,R164,R174,R178,R208,R211,R233,R283,R285,R297,R302,R317,R319,R334,R341,R342,R347,R38,R456,R463,R476,R477,R493,R494,R520,R594,R650,R693,R70,R712,R715,R723,R734,R797,R93		2.547039	35	10545622.718268
105A700009	Resistor	R105,R106,R120,R126,R127,R130,R14,R144,R156,R157,R158,R160,R163,R171,R177,R207,R216,R217,R24,R25,R264,R288,R289,R290,R313,R318,R320,R335,R336,R340,R343,R345,R346,R36,R369,R37,R374,R380,R406,R460,R461,R462,R464,R484,R489,R496,R497,R50,R501, R		2.547039	106	3573082.374688

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
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**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A700139	Resistor	R152,R213,R214, R221,R225,R242, R281,R286,R287, R304,R404,R638,R71, R809		2.547039	14	25477245.255648
105A701033	Resistor	R103		2.547039	1	282340674.079668
105A701039	Resistor	R146,R149,R150, R176,R182,R184, R186,R191,R193, R195,R197,R198, R206,R209,R218, R220,R222,R223, R224,R23,R241,R256, R257,R258,R259, R260,R261,R307, R388,R41,R42,R431, R432,R434,R435, R437,R438,R444,R440, R441,R447,R448, R449,R450,R451, R452,R453,R454, R614		2.547039	58	6449958.733144
105A701059	Resistor	R175,R247,R349, R527,R561,R675, R785		2.547039	7	48991237.965885
105A701069	Resistor	R570		2.547039	1	282340674.079668
105A702209	Resistor	R811,R812,R813, R814		2.547039	4	82309758.689546
105A702229	Resistor	R408,R410,R8,R9		2.547039	4	82309758.689546
105A702263	Resistor	R298,R299		2.547039	2	154078778.388085
105A703909	Resistor	R4,R5		2.547039	2	154078778.388085

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A704729	Resistor	R135,R136,R137, R138,R139,R185, R188,R210,R360,R39, R40,R433,R436,R439, R442,R443,R444, R445,R446,R479, R480,R481,R482, R499,R500,R559, R560,R580,R623, R820,R825		2.547039	31	11861900.957214
105A704739	Resistor	R194,R808		2.547039	2	154078778.388085
105A705139	Resistor	R199,R273,R279, R356,R389,R76,R779		2.547039	7	48991237.965885
105A705629	Resistor	R254,R821		2.547039	2	154078778.388085
105A708209	Resistor	R815,R816,R817		2.547039	3	107020754.986850
105A708229	Resistor	R165,R167,R187, R540,R542,R591, R595,R616,R653, R660,R661,R662, R823		2.547039	13	27342571.921361
105A722009	Resistor	R32,R34,R459		2.547039	3	107020754.986850
105A739039	Resistor	R538		2.547039	1	282340674.079668
106B501032	Resistor	RT1,RT2,RT4,RT5		7.724580	4	21923287.146155

**Reliability Prediction  
Summary**

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
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**MTBF (hrs):** 91,558  
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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1121501690	Capacitor	C10,C104,C105,C106,C109,C110,C111,C113,C114,C115,C116,C117,C121,C122,C123,C124,C125,C128,C129,C132,C136,C142,C143,C144,C145,C146,C147,C148,C15,C150,C151,C152,C154,C155,C157,C158,C159,C164,C186,C189,C19,C191,C192,C193,C203,C207,C214,C222, C22		1.128806	222	3924677.766200

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1121501691	Capacitor	C103,C112,C12,C139,C14,C140,C149,C276,C277,C28,C31,C32,C328,C334,C338,C35,C351,C359,C36,C371,C374,C384,C396,C40,C405,C41,C441,C445,C446,C47,C48,C5,C51,C513,C52,C520,C549,C568,C6,C61,C62,C637,C642,C645,C646,C647,C649,C650,C651,C652,C653,C663,C299		1.128806	57	15044000.029504
1121701790	Capacitor	C299		1.128806	1	704977644.692287
1123710090	Capacitor	C292,C296,C297,C298,C307,C318,C322,C369,C370,C514,C522,C537		1.128806	12	68856937.301178
1124410190	Capacitor	C461,C462,C463,C464		1.128806	4	196873384.410843
1124410191	Capacitor	C24,C30,C34,C38,C380,C385		1.128806	6	133979725.056342
1124418090	Capacitor	C455,C460,C466,C474		1.128806	4	196873384.410843
1124427091	Capacitor	C11,C258,C271,C279,C291,C375,C376,C400,C406,C69,C70,C9,C90,C91		1.128806	14	59316298.011235
1124468090	Capacitor	C352,C353		1.128806	2	375289731.076049
1124501780	Capacitor	C7		1.128806	1	704977644.692287

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**Temperature:** 30  
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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1124522190	Capacitor	C335,C342		1.128806	2	375289731.076049
1124522280	Capacitor	C311,C315,C325, C326,C349		1.128806	5	159367490.199266
1124533190	Capacitor	C126		1.128806	1	704977644.692287
1124533280	Capacitor	C1		1.128806	1	704977644.692287
1124547190	Capacitor	C100,C95,C96,C99		1.128806	4	196873384.410843
1124547290	Capacitor	C141		1.128806	1	704977644.692287
1124701680	Capacitor	C119,C160,C274, C281,C295,C303, C304,C308,C309, C339,C347,C348, C368,C428,C484,C50, C527,C542,C543		1.128806	19	44097696.883526
1129522790	Capacitor	C13,C22,C27,C306, C320		1.128806	5	159367490.199266
1129622690	Capacitor	C177,C180,C201, C216,C218,C330, C488,C489,C501, C516,C547		1.128806	11	74892583.279796
1129701791	Capacitor	C101,C102,C172, C210,C217,C227, C232,C255,C521, C533,C534,C535, C536,C615,C616, C617,C654,C655, C656,C657,C658, C659,C81,C82,C83		1.128806	25	33748887.792763
1129710091	Capacitor	C16,C17,C18		1.128806	3	257514172.353070
1129722091	Capacitor	C2,C3,C4,C627,C628		1.128806	5	159367490.199266
1169682192	Capacitor	C267,C268,C269, C317		4.744484	4	45505862.704531

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1174522180	Capacitor	CP1,CP10,CP11,CP12,CP13,CP2,CP3,CP4,CP6,CP7,CP8,CP9		4.744484	12	16120395.545571
1183633090	Capacitor	C131,C162,C20,C54		4.744484	4	45505862.704531
1189615154	Capacitor	C329,C346,C361,C367,C381,C382,C383		4.744484	7	26949727.707925
1189622154	Capacitor	C120		4.744484	1	159663026.715137
1189922181	Capacitor	C505,C546		4.744484	2	86049450.747498
11C4501790	Capacitor	C8		1.128806	1	704977644.692287
11C4522290	Capacitor	C427		1.128806	1	704977644.692287
11C9510490	Capacitor	C300		1.128806	1	704977644.692287
11E1510050	Capacitor	C107,C130,C233,C285,C365		1.128806	5	159367490.199266
11E1522680	Capacitor	C345		1.128806	1	704977644.692287
11E2601050	Capacitor	C662,C664,C97,C98		1.128806	4	196873384.410843
11E4433690	Capacitor	C231		1.128806	1	704977644.692287
11E9501090	Capacitor	C341		1.128806	1	704977644.692287



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**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9501091	Capacitor	C137,C138,C156, C161,C165,C168, C169,C171,C175, C176,C178,C179, C183,C184,C187, C188,C190,C194, C195,C196,C197, C198,C199,C200, C202,C205,C206, C209,C212,C213, C221,C223,C226, C228,C229,C23,C236, C238,C241,C280,C29, C314,C33,C355,C356, C360,C37,C42,C425,		1.128806	58	14788723.209389
11E9510050	Capacitor	C21,C379		1.128806	2	375289731.076049
11E9547060	Capacitor	C305		1.128806	1	704977644.692287

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9610080	Capacitor	C173,C174,C182, C185,C240,C247, C251,C253,C254, C257,C263,C272, C273,C278,C282, C327,C333,C340, C350,C477,C504, C506,C515,C517, C526,C532,C548, C567,C585,C59,C592, C636,C639,C641, C643,C648		1.128806	36	23624151.295955
11E9622050	Capacitor	C133,C134,C204, C208,C211,C215, C220,C256,C260, C264,C266,C270, C275,C372,C377, C378,C39,C440,C451, C472,C518		1.128806	21	40003791.624280
11E9622080	Capacitor	C321		1.128806	1	704977644.692287
11E9647680	Capacitor	C181,C230,C237		1.128806	3	257514172.353070
1211100113	Inductor	L12,L13,L14,L4		4.944252	4	43912872.424775
1211100160	Inductor	L3		4.944252	1	154760964.143460
121110106G	Inductor	L9	35.9	9.084691	1	84227100.345218
121110226J	Inductor	L8		4.944252	1	154760964.143460
121110226K	Inductor	L10,L16		4.944252	2	83201062.149749
121110336X	Inductor	L17	27.7	7.998644	1	95663362.958653
121110476Q	Inductor	L1,L11,L2		4.944252	3	57363284.375370
1212306030	Inductor	FB1,FB12,FB13,FB20, FB21,FB28,FB30, FB32,FB6		4.944252	9	20443842.451049

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1212306031	Inductor	FB29		4.944252	1	154760964.143460
1212306035	Inductor	FB10,FB2,FB26,FB27,FB3,FB4,FB7,FB8,FB9		4.944252	9	20443842.451049
1212308054	Inductor	FB11,FB22,FB23,FB24,FB5		4.944252	5	35631881.582999
121231206B	Inductor	FB15,FB16,FB17,FB19,FB25		4.944252	5	35631881.582999
1214309008	Inductor	CH10,CH5,CH6,CH7,CH8,CH9		4.944252	6	30055900.223009
1214309009	Inductor	CH1,CH2,CH3,CH4		4.944252	4	43912872.424775
123131435J	Miscellaneous	Y3		19.200000	1	23844262.770939
123132505D	Miscellaneous	Y1,Y2,Y4,Y8		19.200000	4	4388233.395340
1231327053	Miscellaneous	Y6		19.200000	1	23844262.770939
1231332722	Miscellaneous	Y5		19.200000	1	23844262.770939
1251005055	Integrated Circuit	U88		43.803003	1	11739202.588727
1300581940	Semiconductor	D18		7.793411	1	92807310.010983
1301005442	Semiconductor	D13,D14,D15,D16,D29,D30,D43		7.793411	7	16052497.121446
1301005444	Semiconductor	D10,D11,D12,D21,D22,D23,D24,D25		7.793411	8	14161142.003130
1301053040	Semiconductor	D1		7.793411	1	92807310.010983
1301400541	Semiconductor	D9		7.793411	1	92807310.010983
1302001240	Semiconductor	D2		7.793411	1	92807310.010983
1304400750	Optical Device	LED1,LED2,LED3,LED4		79.003355	4	2148119.082046
1305080040	Semiconductor	D17,D19,D20,D3,D31,D32,D33,D34,D35,D36,D37,D38,D39,D4,D40,D41,D42		7.793411	17	6927243.833724
1305099140	Semiconductor	D26,D27		7.793411	2	50578095.223398
1310390412	Semiconductor	Q42,Q44,Q46,Q48,Q51,Q53,Q55,Q57,Q68,Q69,Q79		22.463360	11	3618924.681337
1310390413	Semiconductor	Q19,Q20,Q25,Q87		22.463360	4	9270607.712006

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1311390612	Semiconductor	Q43,Q45,Q47,Q49,Q50,Q52,Q54,Q56, Q72		22.463360	9	4366472.106532
1315013810	Semiconductor	Q76		22.463360	1	31642600.748419
1315058340	Semiconductor	Q2		22.463360	1	31642600.748419
1315058360	Semiconductor	Q33,Q36		22.463360	2	17315095.066101
1315058360	Semiconductor	Q34	27.7	45.486710	1	15626523.054568
1315058360	Semiconductor	Q35	34	52.546341	1	13527090.864521
1315190100	Semiconductor	U50,U58,U9		22.463360	3	12043329.789539
1315230511	Semiconductor	Q1,Q27,Q89,Q91		22.463360	4	9270607.712006
1315443710	Semiconductor	Q8	19.8	37.657987	1	18875122.785461
1315444710	Semiconductor	Q32,Q37		22.463360	2	17315095.066101
1315581100	Semiconductor	Q31,Q80		22.463360	2	17315095.066101
1315700216	Semiconductor	Q11,Q12,Q13,Q15,Q18,Q21,Q22,Q23,Q24,Q26,Q28,Q29,Q30,Q38,Q39,Q4,Q40,Q41,Q5,Q58,Q59,Q6,Q60,Q61,Q62,Q63,Q64,Q65,Q66,Q67,Q7,Q70,Q71,Q73,Q75,Q77,Q78,Q81,Q82,Q85,Q88		22.463360	41	1023095.166924
1410062110	Integrated Circuit	U2		43.803003	1	11739202.588727
1420020430	Integrated Circuit	U83,U87		43.803003	2	6834791.244197
1440002130	Integrated Circuit	U52,U53,U6,U7		43.803003	4	3879156.910661
1440D25500	Integrated Circuit	U71	23.1	56.085156	1	9168421.209899
1462SCV1A0	Integrated Circuit	U26		11.063278	1	58231413.220643
1468084680	Integrated Circuit	U20,U25,U35,U66,U70,U76		11.063278	6	12335628.727423
1468084680	Integrated Circuit	U74	19.9	25.266644	1	25497263.590394
1468084680	Integrated Circuit	U29	23.1	28.584897	1	22537435.831465
14S3020901	Integrated Circuit	U10		43.803003	1	11739202.588727
14S3050100	Integrated Circuit	U38	31.2	324.194554	1	1586122.662539
14S3066200	Integrated Circuit	U8	29	285.011931	1	1804178.257384
14S3112300	Integrated Circuit	U43		43.803003	1	11739202.588727
14S3121600	Integrated Circuit	U45		43.803003	1	11739202.588727

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
14S3520502	Integrated Circuit	U85		43.803003	1	11739202.588727
14S3816700	Integrated Circuit	U51	25.5	231.376392	1	2222406.205761
14S3973100	Integrated Circuit	U36		43.803003	1	11739202.588727
14S3973100	Integrated Circuit	U41	32.5	349.556911	1	1471040.375149
14S3E00100	Integrated Circuit	U42,U44		43.803003	2	6834791.244197
14S4001000	Integrated Circuit	U72	23.9	210.030202	1	2448278.033076
14S4081110	Integrated Circuit	U40		43.803003	1	11739202.588727
14S4186600	Integrated Circuit	U32		43.803003	1	11739202.588727
14S4519500	Integrated Circuit	U73		43.803003	1	11739202.588727
14S4811103	Integrated Circuit	U11,U60		43.803003	2	6834791.244197
14S4811103	Integrated Circuit	U12	22.1	188.146090	1	2733048.175339
14S4814380	Integrated Circuit	U4,U5		43.803003	2	6834791.244197
14S5A00821	Integrated Circuit	U37,U39,U75		26.018600	3	9949526.289768
14S5A73200	Integrated Circuit	U67		26.018600	1	25551442.237972
14S6203205	Integrated Circuit			11.063278	1	58231413.220643
14S7035701	Integrated Circuit	U89		43.803003	1	11739202.588727
14S7140000	Integrated Circuit	U22,U24		43.803003	2	6834791.244197
14S7140100	Integrated Circuit	U21,U23,U62,U63		43.803003	4	3879156.910661
14S9341101	Integrated Circuit	U59	20.7	172.568076	1	2979765.101184
14S9502100	Integrated Circuit	U3		43.803003	1	11739202.588727
1540710280	Resistor	RP15,RP16		9.971436	2	30043399.401299
1540715081	Resistor	RP1,RP10,RP11,RP12,RP14,RP2,RP27,RP29,RP3,RP31,RP34,RP35,RP36,RP37,RP38,RP39,RP4,RP40,RP42,RP47,RP5,RP6,RP8,RP9		9.971436	24	3515777.070906
1540722085	Resistor	RP53,RP54,RP55,RP56,RP57		9.971436	5	14126297.426094
1540733085	Resistor	RP17,RP18,RP19,RP20,RP21,RP22,RP23,RP24		9.971436	8	9424088.116087
1540736081	Resistor	RP25,RP26,RP28,RP30,RP32,RP33		9.971436	6	12090001.526571

**File Name:** EPB-CV101.rfp  
**Assembly:** 9697CVA10D-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10921.996449  
**MTBF (hrs):** 91,558  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1540782282	Resistor	RP13,RP41,R P43, RP44,RP45,R P46		9.971436	6	12090001.526571
1600030803	Connection	LCDID		16.184835	1	35685591.360212
1601615601	Connection	SW2		16.184835	1	35685591.360212
1652002100	Connection	CN2		16.184835	1	35685591.360212
1652514210	Connection	CN5		16.184835	1	35685591.360212
1652522207	Connection	CN6		16.184835	1	35685591.360212
1652828200	Connection	CN7		16.184835	1	35685591.360212
165300310G	Connection	JP4,JP5,JP6,J P7, JP8,JP9		16.184835	6	7958792.615968
165300420L	Connection	SPI1		16.184835	1	35685591.360212
165300520X	Connection	DIO1,LPC2		16.184835	2	20390152.380746
1653300102	Connection	JP4(1-2),JP5 (1-2), JP6(1- 2),JP7(1-2), JP8(2-3)		16.184835	5	9343344.843761
1653300108	Connection	JP9(1-2)		16.184835	1	35685591.360212
1653900039	Connection	CN69		16.184835	1	35685591.360212
165392521J	Connection	CN17		16.184835	1	35685591.360212
1654226303	Connection	MINICARD1		16.184835	1	35685591.360212
1654418103	Connection	CN20,CN3,C N4		16.184835	3	14515880.849373
1654445300	Connection	CN1		16.184835	1	35685591.360212
1654808309	Connection	CN19		16.184835	1	35685591.360212
1654907004	Connection	SATA1		16.184835	1	35685591.360212
1655302020	Connection	SATAPWR1		16.184835	1	35685591.360212
1655902034	Connection	BAT1A1		16.184835	1	35685591.360212
1655905038	Connection	USB1,USB2		16.184835	2	20390152.380746
1655912032	Connection	LPC1		16.184835	1	35685591.360212
175011901C	Miscellaneous	BAT1B1		306.000000	1	1681683.006787
1752001603	Miscellaneous	FS1,FS5,FS8, FS9		2.400000	4	79281882.025954