



MTBF PREDICTION REPORT

PA Department

DFI



MTBF PREDICTION REPORT

Model: AL05P-BC-23E30

Revision: AB0

Completed Date	2020/11/17
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1. Purpose:

This MTBF prediction report presents the product reliability by the Relex reliability analysis tools, which is developed by Relex Software Corporation. When performing a reliability prediction analysis, there are several calculated values that provide measures of reliability. These values include failure rate, MTBF, reliability and availability. This report should provide the reliable and worth result for MTBF and failure rate reference.

2. Prediction Models:

For motherboard product, this report is based on Telcordia (formerly Bellcore). The Telcordia reliability prediction model was originally developed by AT&T Bell Labs. Bell Labs modified the equations from MIL-HDBK-217 to better represent what their equipment was experiencing in the field.

3. Definition:

- Failure Rate: Failure rate is defined as the rate of occurrence of failure. It is basically the anticipated number of times that an item fails in a specified period of time.
- MTBF: MTBF stands for Mean Time between Failures. MTBF is the inverse of the failure rate for constant failure rate systems. MTBF can be described as the number of hours to pass before for a component, assembly, or system.
- Description: A description of the item on the Relex file.
- Environment: It is based on those outlined in the Telcordia (Bellcore) standards.
- Temperature: Present the operation temperature (in degrees Celsius) to meet the requirement.

4. MTBF Result and Relex Software Report:

Temperature (Celsius)	MTBF (hours)
25	839475
45	601708
60	430620

File Name: AL05P-BC-23E30.rfp

System: 770-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 839475

Failure Rate: 1,191.22

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL05P-BC-23E30	770-AL05P1-000G	1	1191.22	839,475
AL05P-BC-23E30	774-AL05P1-000G	1	1191.22	839,475

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 839475
Failure Rate: 1,191.2207
Temperature: 25
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	1.9772	1	2.9741
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	1.9772	5	12.0774
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	1.9772	2	5.3538
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	1.9772	1	2.9741
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	1.9772	6	14.2597
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	1.9772	1	2.9741
121-009406-200G	IC DUAL BIDIRECTIONAL I2C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	1.9772	1	2.9741
121-022976-200G	IC Switch,5.7-V,6-A,14-mΩ On-Resistance Dual-Channel Load,TPS22976DPU/WSO-14(TI)RoHS	1.9772	1	2.9741
121-081439-400G	IC Single 3.3V or 5V RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN-40(5x5)(FINTEK)RoHS	1.9772	1	2.9741
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	1.9772	1	2.9741
131-568192-102G	LPDDR4-3733 SDRAM 8Gb(256M*32),K4F8E304HB-MGCJ/FBGA-200(SAMSUNG)RoHS	4.4178	2	12.2615
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	4.4178	1	6.8575
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	4.4178	1	6.8575
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	4.4178	1	6.8575
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	1.9772	1	2.9741
141-059690-400G	IC PWM CTRL MAX5969BETB/TDFN 10(MAXIM) RoHS	1.9772	1	2.9741
141-059740-400G	IC PWM CTRL MAX5974A/TQFN16(MAXIM)RoHS	1.9772	1	2.9741
141-568210-400G	IC Converter,4.5V~17V Input,8A Synchronous Step-Down SWIFT,TPS568215OARNN/VQFN-18(TI)RoHS	1.9772	3	7.6379
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	1.9772	2	5.3538
141-850430-400G	IC PCIE Switch F85043AN/QFN-20(FINTEK)RoHS	1.9772	1	2.9741
147-002110-200G	IC CHIP,Giga LAN CTRL,WGI211AT SLJXZ/QFN-64 (INTEL)RoHS	1.9772	1	2.9741
147-818030-200G	IC CHIP,-40~85°C,F81803U-I/TQFP-64(FINTEK) RoHS	1.9772	1	2.9741
148-100432-400G	eMMC 5.1,32G,-25°C~+85°C,SMD,FBGA-153,SDINBDG4-32G-I1(SANDISK)RoHS	4.4178	1	6.8575
171-200001-210G	Bridge Rectifier 100V,800mA,HD01-T/MiniDIP (DIODES)RoHS	0.2189	2	0.7270

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Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 839475
Failure Rate: 1,191.2207
Temperature: 25
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
171-200520-200G	DIODE SCHOTTKY BARRIER RECTIFIER,30V,200mA,SCS520S-C/SOD-523 (SECOS)RoHS	0.2189	8	2.3221
171-200580-200G	DIODE TVS,58V,100A,600W,SMBJ58A-13-F/SMB (DIODES)RoHS	0.2189	2	0.7270
171-201600-200G	DIODE SCHOTTKY BARRIER 60V,1A,B160/SMA (LITEON)RoHS	0.2189	2	0.7270
171-224148-309G	DIODE Switching,1N4148WS-7-F/SOD323(DIODES) RoHS	0.2189	1	0.4229
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	0.2189	1	0.4229
171-360058-210G	DIODE TVS,58V Bidirectional,SMCJ58CA/DO-214AB (SMC)(LITTELFUSE)RoHS	0.2189	2	0.7270
171-368333-200G	DIODE TVS,3.3V 4-CHANNEL ESD SOLUTION,AZ8333-04F/DFN2525P10E(AMAZING) RoHS	0.2189	2	0.7270
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	1.9772	5	12.0774
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	1.1741	2	3.6275
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	1.1741	1	2.0814
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	7.2970	7	60.0237
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	7.2970	1	10.7463
172-318533-200S	MOSFET N-Ch,VDS:60V,ID:17A,VGS:±20V,@10V RDS:4.7mΩ,CSD18533Q5A/SON(TI) RoHS	7.2970	1	10.7463
172-386255-200G	MOSFET N-Ch,VDS:150V,ID:45A,VGS:±20V,10V,RDS:12.4mΩ,F DMS86255/PQFN-8(5x6)(ON)RoHS	7.2970	1	10.7463
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	7.2970	1	10.7463
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	7.2970	1	10.7463
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	0.0677	1	0.1329
212-133086-200G	HYBRID ELEC CAP,33uF/63V,30mΩ,2100mA,SMD,Φ10*10.5,105°C /10000h,M(20%),63HVVH33M(SUNCON)RoHS	0.7181	1	0.9480
213-151005-200C	MLCC 10pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	1	0.1028
213-151015-200C	MLCC 101P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	1	0.1028
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	2	0.1987
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	2	0.1987

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MTBF (hrs): 839475

Failure Rate: 1,191.2207

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	4	0.3877
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	2	0.1987
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	1	0.1028
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.0911	11	1.0407
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	1	0.1028
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	2	0.1987
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	1	0.1028
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.0911	7	0.6685
213-251029-800C	MLCC 102P/3KV,X7R,K(10%),SMD,1808,(None JP) RoHS	0.0911	1	0.1028
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.0911	2	0.1987
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.0911	4	0.3877
213-251048-230J	MLCC 104P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.0911	2	0.1987
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.0911	75	6.9331
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.0911	22	2.0588
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.0911	11	1.0407
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.0911	15	1.4116
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.0911	11	1.0407
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.0911	37	3.4415
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.0911	2	0.1987
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.0911	17	1.5967
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.0911	2	0.1987
213-251069-520J	MLCC 106P/10V,X5R,K(10%),SMD,0805,(JP)RoHS	0.0911	10	0.9479
213-251069-540J	MLCC 106P/16V,X5R,K(10%),SMD,0805,(JP)RoHS	0.0911	6	0.5752
213-251069-610J	MLCC 106P/25V,X5R,K(10%),SMD,1206,(JP)RoHS	0.0911	12	1.1336
213-251069-680J	MLCC 106P/50V,X5R,K(10%),SMD,1206(JP)RoHS	0.0911	2	0.1987
213-252028-300C	MLCC 202P/50V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.0911	1	0.1028
213-252239-220J	MLCC 223P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.0911	1	0.1028
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.0911	10	0.9479
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.0911	47	4.3614
213-252268-330J	MLCC 226P/10V,X5R,M(20%),SMD,0603,(JP)RoHS	0.0911	2	0.1987
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.0911	4	0.3877
213-252269-620C	MLCC 226P/16V,X5R,K(10%),SMD,1206,(None JP) RoHS	0.0911	1	0.1028
213-253939-240J	MLCC 393P/25V,X7R,K(10%),SMD,0402,(JP)RoHS	0.0911	1	0.1028

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Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.0911	5	0.4816
213-254729-80AG	MLCC 4700pF,250V,X7R,K (10%),SMD,1812,SCC1812X472K302TG(HEC)RoHS	0.0911	2	0.1987
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.0911	4	0.3877
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.0911	4	0.3877
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.0911	3	0.2935
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M (20%),T520B107M006ATE040(KEMET)RoHS	0.7181	2	1.7589
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M (20%),B3528(1.9),T520B227M006ATE045(KEMET) RoHS	0.7181	3	2.5481
223-015122-600G	CHOKE 0.15uH,M (20%),RDC ≤ 0.66mΩ,Idc ≤ 36A,Isat=45A,SMD, (7.6*6.6*3.8),PCME064T-R15MS0R667(CYNTEC) RoHS	0.0831	1	0.1030
223-015222-620G	CHOKE 1.5uH,M (20%),RDC ≤ 14mΩ,Idc=9A,Isat=18A,SMD, (7.3x6.6x3),PCMC063T-1R5MN(CYNTEC)RoHS	0.0831	1	0.1030
223-036121-700G	CHOKE 0.36uH,M (20%),DCR ≤ 12mΩ,Irms:9A,Isat:11A,SMD (4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	0.0831	1	0.1030
223-047120-820G	CHOKE 0.47uH,M (20%),RDC ≤ 39mΩ,Irms=3.5A,SMD, (2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	0.0831	2	0.1942
223-047122-620G	CHOKE 0.47uH,M (20%),RDC ≤ 4.2mΩ,Idc=17.5A,Isat=26A,SMD, (7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	0.0831	2	0.1942
223-410040-501S	COMMON CHOKE 90Ω,M (20%),Idc ≤ 330mA,RDC ≤ 350mΩ,SMD (2.05*1.25*1.4mm),After D/C 1936 is the bottom convex,CMM21T-900M-N(CHILISIN)	0.0831	1	0.1030
223-410562-910G	COMMON CHOKE 1000uH,-30%~+50%,SMD, (9.5*5.65*4.9),YT-34058(ELYTONE)RoHS	0.0831	1	0.1030
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC ≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	0.0831	4	0.3713
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	0.0831	2	0.1942
226-134059-200G	TRANSFORMER EP13 SMD 10P,YT-34059(ELYTONE) RoHS	2.2677	1	3.1715
231-171330-200G	REGULATOR GS7133TD-R,3A,TDFN10(GSTEK)RoHS	1.9474	4	11.4607
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	1.4698	1	2.4229

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Temperature: 25

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Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	1.4698	1	2.4229
241-432773-314G	X'TAL 32.768kHz,12.5pf,±20ppm,ESR:70KΩ (Max),TOPR=-40°C~+85°C,SMD3215 (2PAD),Q13FC1350000400(EPSON)RoHS	1.4698	1	2.4229
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	1.1257	1	1.8325
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	0.4535	2	1.5088
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	3	1.6363
253-100155-604S	POLYSWITCH,PTC,1.5A/8V,SMD1206,1206L150THW R(LITTELFUSE)	0.4000	1	0.6546
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES ARRAY 150Ω 8P4R J(5%),0402*4,(None JP) RoHS	0.0605	2	0.1490
261-364725-200C	RES ARRAY 4.7KΩ 8P4R J(5%),0402*4,(None JP) RoHS	0.0605	1	0.0805
263-120017-618G	PMS RES 1W,1mΩ,F(1%),SMD,1206,LR1206-21R001F*(RALEC)RoHS	0.0605	2	0.1490
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.0605	37	2.3553
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.0605	30	1.9203
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.0605	7	0.4746
263-180100-110C	RES 10Ω,F(1%),SMD,0201,(None JP)RoHS	0.0605	11	0.7295
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	8	0.5386
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.0605	2	0.1490
263-180100-510C	RES 10Ω,F(1%),SMD,0805,(None JP)RoHS	0.0605	1	0.0805
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.0605	9	0.6024
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-180438-610C	RES 0.43Ω,F(1%),SMD,1206,(None JP)RoHS	0.0605	2	0.1490
263-180479-510C	RES 4.7Ω,F(1%),SMD,0805,(None JP)RoHS	0.0605	1	0.0805
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-180750-510C	RES 75Ω,F(1%),SMD,0805,(None JP)RoHS	0.0605	2	0.1490
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.0605	2	0.1490
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	7	0.4746
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	13	0.8560
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	7	0.4746
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.0605	2	0.1490
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	42	2.6654
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	20	1.2961
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	9	0.6024
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	4	0.2814
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	3	0.2157

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 839475

Failure Rate: 1,191.2207

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181242-210C	RES 12.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	6	0.4110
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181692-210C	RES 16.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.0605	3	0.2157
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	3	0.2157
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	2	0.1490
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	5	0.3464
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-182152-310C	RES 21.5KΩ,F(1%),SMD,0603,(None JP)RoHS	0.0605	1	0.0805
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	2	0.1490
263-182202-210C	RES 22KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-182400-110C	RES 240Ω,F(1%),SMD,0201,(None JP)RoHS	0.0605	4	0.2814
263-182492-210C	RES 24.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-182553-210C	RES 255KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-182872-210C	RES 28.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-183092-210C	RES 30.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-183099-510C	RES 30.9Ω,F(1%),SMD,0805 (None JP)RoHS	0.0605	1	0.0805
263-183162-210C	RES 31.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-183300-210C	RES 330Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	3	0.2157
263-183301-110C	RES 3.3KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	6	0.4110
263-183301-210C	RES 3.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-183302-110C	RES 33KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	3	0.2157
263-183303-210C	RES 330KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-183305-100C	RES 33Ω,J(5%),SMD,0201,(None JP)RoHS	0.0605	14	0.9191
263-183901-210C	RES 3.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184020-210C	RES 402Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	3	0.2157
263-184021-210C	RES 4.02KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184122-210C	RES 41.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184532-210C	RES 45.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184701-110C	RES 4.7KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	38	2.4174

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 839475

Failure Rate: 1,191.2207

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-184701-210C	RES 4.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	3	0.2157
263-184702-110C	RES 47KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0605	8	0.5386
263-184750-210C	RES 475Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184872-210C	RES 48.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184990-210C	RES 499Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184991-210C	RES 4.99KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-184992-210C	RES 49.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-185102-210C	RES 51KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	4	0.2814
263-185110-210C	RES 511Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-185112-210C	RES 51.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-185230-210C	RES 523Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-185362-210C	RES 53.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-185600-210C	RES 560Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-185621-210C	RES 5.62KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-186040-210C	RES 604Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-186049-210C	RES 60.4Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-186981-210C	RES 6.98KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-187502-210C	RES 75KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-187870-210C	RES 787Ω,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-188062-210C	RES 80.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-188201-210C	RES 8.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-188451-210C	RES 8.45KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-188459-210C	RES 84.5Ω,F(1%),SMD,0402 (None JP)RoHS	0.0605	1	0.0805
263-188871-210C	RES 8.87KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-188872-210C	RES 88.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-189312-210C	RES 93.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
263-189531-210C	RES 9.53KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	2	0.1490
263-189762-210C	RES 97.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0605	1	0.0805
273-100402-301S	THERM RES 10KΩ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	0.9957	2	3.3397
314-AL05P1-109G	PCB AL05P R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	2.4655	1	4.6984
342-112003-211G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH5(WIN WIN)RoHS	2.0862	1	3.6121
343-500644-140G	Giga LAN CONN RJ45 30μ,R/A W/Transformer&LED G-O/G,DIP,JFM3811Q-FLP1-4F(FOXCONN)RoHS	2.0862	1	3.6121
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	2.0862	1	3.6121
346-120310-201G	PIN PLUG 2*3, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180806P(V-STAR)RoHS	14.6036	2	44.2517
346-120511-201G	PIN PLUG 2*5, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180810P(V-STAR)RoHS	14.6036	3	62.1595
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	14.6036	1	25.2847
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	1.1379	1	1.8544

File Name: AL05P-BC-23E30.rfp**Assembly:** 774-AL05P1-000G**Ref Des:****Calculation Model:** Telcordia Issue 4**MTBF (hrs):** 839475**Failure Rate:** 1,191.2207**Temperature:** 25**Environment:** GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	1.1379	1	1.8544
622-010140-000G	BATTERY CR2032(MURATA) 3V 220mAh,-30°C ~+70°C,W/CABLE(L=150mm&TAPE),BIN-CR2032-I- CT-SL-PV-01(RE-ENERGY)RoHS Belong to UN3090	25.0000	1	34.9638
682-115090-401G	PRGM AL Series/PIC16F1509-I/ML,CK:E6E4 CL:BROWN File:E184.17A RoHS	1.9474	1	3.7871
143-101300-402G	CPU Intel Atom x5-E3930 1.3GHz C/2M,F1,LH8066803102701 SREKA/FCBGA-1296 (INTEL)RoHS	159.0000	1	159.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000

File Name: AL05P-BC-23E30.rfp

System: 770-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4

MTBF (hrs): 601708

Failure Rate: 1,661.94

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled



Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL05P-BC-23E30	770-AL05P1-000G	1	1661.94	601,708
AL05P-BC-23E30	774-AL05P1-000G	1	1661.94	601,708

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708
Failure Rate: 1,661.9352
Temperature: 45
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	4.6582	1	7.0069
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	4.6582	5	28.4535
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	4.6582	2	12.6132
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	4.6582	1	7.0069
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	4.6582	6	33.5948
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	4.6582	1	7.0069
121-009406-200G	IC DUAL BIDIRECTIONAL I2C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	4.6582	1	7.0069
121-022976-200G	IC Switch,5.7-V,6-A,14-mΩ On-Resistance Dual-Channel Load,TPS22976DPU/WSO-14(TI)RoHS	4.6582	1	7.0069
121-081439-400G	IC Single 3.3V or 5V RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN-40(5x5)(FINTEK)RoHS	4.6582	1	7.0069
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	4.6582	1	7.0069
131-568192-102G	LPDDR4-3733 SDRAM 8Gb(256M*32),K4F8E304HB-MGCJ/FBGA-200(SAMSUNG)RoHS	10.4080	2	28.8873
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST)RoHS	10.4080	1	16.1558
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8(WINBOND)RoHS	10.4080	1	16.1558
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20(MICROCHIP)RoHS	10.4080	1	16.1558
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS)RoHS	4.6582	1	7.0069
141-059690-400G	IC PWM CTRL MAX5969BETB/TDFN 10(MAXIM)RoHS	4.6582	1	7.0069
141-059740-400G	IC PWM CTRL MAX5974A/TQFN16(MAXIM)RoHS	4.6582	1	7.0069
141-568210-400G	IC Converter,4.5V~17V Input,8A Synchronous Step-Down SWIFT,TPS568215OARNN/VQFN-18(TI)RoHS	4.6582	3	17.9944
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	4.6582	2	12.6132
141-850430-400G	IC PCIE Switch F85043AN/QFN-20(FINTEK)RoHS	4.6582	1	7.0069
147-002110-200G	IC CHIP,Giga LAN CTRL,WGI211AT SLJXZ/QFN-64(INTEL)RoHS	4.6582	1	7.0069
147-818030-200G	IC CHIP,-40~85°C,F81803U-I/TQFP-64(FINTEK)RoHS	4.6582	1	7.0069
148-100432-400G	eMMC 5.1,32G,-25°C~+85°C,SMD,FBGA-153,SDINBDG4-32G-I1(SANDISK)RoHS	10.4080	1	16.1558
171-200001-210G	Bridge Rectifier 100V,800mA,HD01-T/MiniDIP(DIODES)RoHS	0.3751	2	1.2458

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708
Failure Rate: 1,661.9352
Temperature: 45
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
171-200520-200G	DIODE SCHOTTKY BARRIER RECTIFIER,30V,200mA,SCS520S-C/SOD-523 (SECOS)RoHS	0.3751	8	3.9793
171-200580-200G	DIODE TVS,58V,100A,600W,SMBJ58A-13-F/SMB (DIODES)RoHS	0.3751	2	1.2458
171-201600-200G	DIODE SCHOTTKY BARRIER 60V,1A,B160/SMA (LITEON)RoHS	0.3751	2	1.2458
171-224148-309G	DIODE Switching,1N4148WS-7-F/SOD323(DIODES) RoHS	0.3751	1	0.7247
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	0.3751	1	0.7247
171-360058-210G	DIODE TVS,58V Bidirectional,SMCJ58CA/DO-214AB (SMC)(LITTELFUSE)RoHS	0.3751	2	1.2458
171-368333-200G	DIODE TVS,3.3V 4-CHANNEL ESD SOLUTION,AZ8333-04F/DFN2525P10E(AMAZING) RoHS	0.3751	2	1.2458
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	4.6582	5	28.4535
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	2.0121	2	6.2164
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	2.0121	1	3.5668
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	12.5047	7	102.8615
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	12.5047	1	18.4158
172-318533-200S	MOSFET N-Ch,VDS:60V,ID:17A,VGS:±20V,@10V RDS:4.7mΩ,CSD18533Q5A/SON(TI) RoHS	12.5047	1	18.4158
172-386255-200G	MOSFET N-Ch,VDS:150V,ID:45A,VGS:±20V,10V,RDS:12.4mΩ,F DMS86255/PQFN-8(5x6)(ON)RoHS	12.5047	1	18.4158
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	12.5047	1	18.4158
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	12.5047	1	18.4158
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	0.3759	1	0.7374
212-133086-200G	HYBRID ELEC CAP,33uF/63V,30mΩ,2100mA,SMD,Φ10*10.5,105°C /10000h,M(20%),63HVVH33M(SUNCON)RoHS	1.0368	1	1.3687
213-151005-200C	MLCC 10pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	1	0.1162
213-151015-200C	MLCC 101P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	1	0.1162
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	2	0.2246
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	2	0.2246

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708
Failure Rate: 1,661.9352
Temperature: 45
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	4	0.4382
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	2	0.2246
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	1	0.1162
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1030	11	1.1763
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	1	0.1162
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	2	0.2246
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	1	0.1162
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1030	7	0.7556
213-251029-800C	MLCC 102P/3KV,X7R,K(10%),SMD,1808,(None JP) RoHS	0.1030	1	0.1162
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1030	2	0.2246
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.1030	4	0.4382
213-251048-230J	MLCC 104P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1030	2	0.2246
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.1030	75	7.8360
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1030	22	2.3269
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1030	11	1.1763
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.1030	15	1.5955
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1030	11	1.1763
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1030	37	3.8897
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1030	2	0.2246
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1030	17	1.8047
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1030	2	0.2246
213-251069-520J	MLCC 106P/10V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1030	10	1.0713
213-251069-540J	MLCC 106P/16V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1030	6	0.6501
213-251069-610J	MLCC 106P/25V,X5R,K(10%),SMD,1206,(JP)RoHS	0.1030	12	1.2812
213-251069-680J	MLCC 106P/50V,X5R,K(10%),SMD,1206(JP)RoHS	0.1030	2	0.2246
213-252028-300C	MLCC 202P/50V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.1030	1	0.1162
213-252239-220J	MLCC 223P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1030	1	0.1162
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1030	10	1.0713
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1030	47	4.9294
213-252268-330J	MLCC 226P/10V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1030	2	0.2246
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.1030	4	0.4382
213-252269-620C	MLCC 226P/16V,X5R,K(10%),SMD,1206,(None JP) RoHS	0.1030	1	0.1162
213-253939-240J	MLCC 393P/25V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1030	1	0.1162

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708
Failure Rate: 1,661.9352
Temperature: 45
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1030	5	0.5443
213-254729-80AG	MLCC 4700pF,250V,X7R,K (10%),SMD,1812,SCC1812X472K302TG(HEC)RoHS	0.1030	2	0.2246
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1030	4	0.4382
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1030	4	0.4382
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1030	3	0.3317
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M (20%),T520B107M006ATE040(KEMET)RoHS	1.0368	2	2.5395
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M (20%),B3528(1.9),T520B227M006ATE045(KEMET) RoHS	1.0368	3	3.6789
223-015122-600G	CHOKE 0.15uH,M (20%),RDC ≤ 0.66mΩ,Idc ≤ 36A,Isat=45A,SMD, (7.6*6.6*3.8),PCME064T-R15MS0R667(CYNTEC) RoHS	0.1200	1	0.1487
223-015222-620G	CHOKE 1.5uH,M (20%),RDC ≤ 14mΩ,Idc=9A,Isat=18A,SMD, (7.3x6.6x3),PCMC063T-1R5MN(CYNTEC)RoHS	0.1200	1	0.1487
223-036121-700G	CHOKE 0.36uH,M (20%),DCR ≤ 12mΩ,Irms:9A,Isat:11A,SMD (4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	0.1200	1	0.1487
223-047120-820G	CHOKE 0.47uH,M (20%),RDC ≤ 39mΩ,Irms=3.5A,SMD, (2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	0.1200	2	0.2804
223-047122-620G	CHOKE 0.47uH,M (20%),RDC ≤ 4.2mΩ,Idc=17.5A,Isat=26A,SMD, (7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	0.1200	2	0.2804
223-410040-501S	COMMON CHOKE 90Ω,M (20%),Idc ≤ 330mA,RDC ≤ 350mΩ,SMD (2.05*1.25*1.4mm),After D/C 1936 is the bottom convex,CMM21T-900M-N(CHILISIN)	0.1200	1	0.1487
223-410562-910G	COMMON CHOKE 1000uH,-30%~+50%,SMD, (9.5*5.65*4.9),YT-34058(ELYTONE)RoHS	0.1200	1	0.1487
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC ≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	0.1200	4	0.5361
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	0.1200	2	0.2804
226-134059-200G	TRANSFORMER EP13 SMD 10P,YT-34059(ELYTONE) RoHS	3.2740	1	4.5789
231-171330-200G	REGULATOR GS7133TD-R,3A,TDFN10(GSTEK)RoHS	7.6721	4	45.1514
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.9138	1	6.4515

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Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708

Failure Rate: 1,661.9352

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.9138	1	6.4515
241-432773-314G	X'TAL 32.768kHz,12.5pf,±20ppm,ESR:70KΩ (Max),TOPR=-40°C~+85°C,SMD3215 (2PAD),Q13FC1350000400(EPSON)RoHS	3.9138	1	6.4515
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	4.4349	1	7.2196
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	0.6548	2	2.1784
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	3	1.6363
253-100155-604S	POLYSWITCH,PTC,1.5A/8V,SMD1206,1206L150THW R(LITTELFUSE)	0.4000	1	0.6546
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES ARRAY 150Ω 8P4R J(5%),0402*4,(None JP) RoHS	0.0873	2	0.2152
261-364725-200C	RES ARRAY 4.7KΩ 8P4R J(5%),0402*4,(None JP) RoHS	0.0873	1	0.1162
263-120017-618G	PMS RES 1W,1mΩ,F(1%),SMD,1206,LR1206-21R001F*(RALEC)RoHS	0.0873	2	0.2152
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.0873	37	3.4005
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.0873	30	2.7724
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.0873	7	0.6852
263-180100-110C	RES 10Ω,F(1%),SMD,0201,(None JP)RoHS	0.0873	11	1.0532
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	8	0.7776
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.0873	2	0.2152
263-180100-510C	RES 10Ω,F(1%),SMD,0805,(None JP)RoHS	0.0873	1	0.1162
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.0873	9	0.8697
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-180438-610C	RES 0.43Ω,F(1%),SMD,1206,(None JP)RoHS	0.0873	2	0.2152
263-180479-510C	RES 4.7Ω,F(1%),SMD,0805,(None JP)RoHS	0.0873	1	0.1162
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-180750-510C	RES 75Ω,F(1%),SMD,0805,(None JP)RoHS	0.0873	2	0.2152
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.0873	2	0.2152
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	7	0.6852
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	13	1.2359
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	7	0.6852
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.0873	2	0.2152
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	42	3.8482
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	20	1.8713
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	9	0.8697
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	4	0.4062
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	3	0.3114

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708

Failure Rate: 1,661.9352

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181242-210C	RES 12.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	6	0.5934
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181692-210C	RES 16.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.0873	3	0.3114
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	3	0.3114
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	2	0.2152
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	5	0.5001
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-182152-310C	RES 21.5KΩ,F(1%),SMD,0603,(None JP)RoHS	0.0873	1	0.1162
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	2	0.2152
263-182202-210C	RES 22KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-182400-110C	RES 240Ω,F(1%),SMD,0201,(None JP)RoHS	0.0873	4	0.4062
263-182492-210C	RES 24.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-182553-210C	RES 255KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-182872-210C	RES 28.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-183092-210C	RES 30.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-183099-510C	RES 30.9Ω,F(1%),SMD,0805 (None JP)RoHS	0.0873	1	0.1162
263-183162-210C	RES 31.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-183300-210C	RES 330Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	3	0.3114
263-183301-110C	RES 3.3KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	6	0.5934
263-183301-210C	RES 3.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-183302-110C	RES 33KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	3	0.3114
263-183303-210C	RES 330KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-183305-100C	RES 33Ω,J(5%),SMD,0201,(None JP)RoHS	0.0873	14	1.3270
263-183901-210C	RES 3.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184020-210C	RES 402Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	3	0.3114
263-184021-210C	RES 4.02KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184122-210C	RES 41.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184532-210C	RES 45.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184701-110C	RES 4.7KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	38	3.4901

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Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708

Failure Rate: 1,661.9352

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-184701-210C	RES 4.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	3	0.3114
263-184702-110C	RES 47KΩ,F(1%),SMD,0201,(None JP)RoHS	0.0873	8	0.7776
263-184750-210C	RES 475Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184872-210C	RES 48.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184990-210C	RES 499Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184991-210C	RES 4.99KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-184992-210C	RES 49.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-185102-210C	RES 51KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	4	0.4062
263-185110-210C	RES 511Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-185112-210C	RES 51.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-185230-210C	RES 523Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-185362-210C	RES 53.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-185600-210C	RES 560Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-185621-210C	RES 5.62KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-186040-210C	RES 604Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-186049-210C	RES 60.4Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-186981-210C	RES 6.98KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-187502-210C	RES 75KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-187870-210C	RES 787Ω,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-188062-210C	RES 80.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-188201-210C	RES 8.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-188451-210C	RES 8.45KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-188459-210C	RES 84.5Ω,F(1%),SMD,0402 (None JP)RoHS	0.0873	1	0.1162
263-188871-210C	RES 8.87KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-188872-210C	RES 88.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-189312-210C	RES 93.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
263-189531-210C	RES 9.53KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	2	0.2152
263-189762-210C	RES 97.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.0873	1	0.1162
273-100402-301S	THERM RES 10KΩ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	2.6513	2	8.8927
314-AL05P1-109G	PCB AL05P R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	6.5651	1	12.5107
342-112003-211G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH5(WIN WIN)RoHS	5.5551	1	9.6181
343-500644-140G	Giga LAN CONN RJ45 30μ,R/A W/Transformer&LED G-O/G,DIP,JFM3811Q-FLP1-4F(FOXCONN)RoHS	5.5551	1	9.6181
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	5.5551	1	9.6181
346-120310-201G	PIN PLUG 2*3, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180806P(V-STAR)RoHS	38.8854	2	117.8306
346-120511-201G	PIN PLUG 2*5, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180810P(V-STAR)RoHS	38.8854	3	165.5142
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	38.8854	1	67.3264
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	3.0300	1	4.9378

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 601708

Failure Rate: 1,661.9352

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	3.0300	1	4.9378
622-010140-000G	BATTERY CR2032(MURATA) 3V 220mAh,-30°C ~+70°C,W/CABLE(L=150mm&TAPE),BIN-CR2032-I- CT-SL-PV-01(RE-ENERGY)RoHS Belong to UN3090	25.0000	1	34.9638
682-115090-401G	PRGM AL Series/PIC16F1509-I/ML,CK:E6E4 CL:BROWN File:E184.17A RoHS	7.6721	1	14.9200
143-101300-402G	CPU Intel Atom x5-E3930 1.3GHz C/2M,F1,LH8066803102701 SREKA/FCBGA-1296 (INTEL)RoHS	159.0000	1	159.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000

File Name: AL05P-BC-23E30.rfp

System: 770-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4

MTBF (hrs): 430620

Failure Rate: 2,322.23

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled



Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL05P-BC-23E30	770-AL05P1-000G	1	2322.23	430,620
AL05P-BC-23E30	774-AL05P1-000G	1	2322.23	430,620

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620
Failure Rate: 2,322.2325
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	8.2795	1	12.4540
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	8.2795	5	50.5731
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	8.2795	2	22.4187
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	8.2795	1	12.4540
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	8.2795	6	59.7113
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	8.2795	1	12.4540
121-009406-200G	IC DUAL BIDIRECTIONAL I2C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	8.2795	1	12.4540
121-022976-200G	IC Switch,5.7-V,6-A,14-mΩ On-Resistance Dual-Channel Load,TPS22976DPU/WSO-14(TI)RoHS	8.2795	1	12.4540
121-081439-400G	IC Single 3.3V or 5V RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN-40(5x5)(FINTEK)RoHS	8.2795	1	12.4540
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	8.2795	1	12.4540
131-568192-102G	LPDDR4-3733 SDRAM 8Gb(256M*32),K4F8E304HB-MGCJ/FBGA-200(SAMSUNG)RoHS	18.4992	2	51.3441
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST)RoHS	18.4992	1	28.7152
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8(WINBOND)RoHS	18.4992	1	28.7152
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20(MICROCHIP)RoHS	18.4992	1	28.7152
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS)RoHS	8.2795	1	12.4540
141-059690-400G	IC PWM CTRL MAX5969BETB/TDFN 10(MAXIM)RoHS	8.2795	1	12.4540
141-059740-400G	IC PWM CTRL MAX5974A/TQFN16(MAXIM)RoHS	8.2795	1	12.4540
141-568210-400G	IC Converter,4.5V~17V Input,8A Synchronous Step-Down SWIFT,TPS568215OARNN/VQFN-18(TI)RoHS	8.2795	3	31.9831
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	8.2795	2	22.4187
141-850430-400G	IC PCIE Switch F85043AN/QFN-20(FINTEK)RoHS	8.2795	1	12.4540
147-002110-200G	IC CHIP,Giga LAN CTRL,WGI211AT SLJXZ/QFN-64(INTEL)RoHS	8.2795	1	12.4540
147-818030-200G	IC CHIP,-40~85°C,F81803U-I/TQFP-64(FINTEK)RoHS	8.2795	1	12.4540
148-100432-400G	eMMC 5.1,32G,-25°C~+85°C,SMD,FBGA-153,SDINBDG4-32G-I1(SANDISK)RoHS	18.4992	1	28.7152
171-200001-210G	Bridge Rectifier 100V,800mA,HD01-T/MiniDIP(DIODES)RoHS	0.5385	2	1.7884

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620
Failure Rate: 2,322.2325
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
171-200520-200G	DIODE SCHOTTKY BARRIER RECTIFIER,30V,200mA,SCS520S-C/SOD-523 (SECOS)RoHS	0.5385	8	5.7123
171-200580-200G	DIODE TVS,58V,100A,600W,SMBJ58A-13-F/SMB (DIODES)RoHS	0.5385	2	1.7884
171-201600-200G	DIODE SCHOTTKY BARRIER 60V,1A,B160/SMA (LITEON)RoHS	0.5385	2	1.7884
171-224148-309G	DIODE Switching,1N4148WS-7-F/SOD323(DIODES) RoHS	0.5385	1	1.0403
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	0.5385	1	1.0403
171-360058-210G	DIODE TVS,58V Bidirectional,SMCJ58CA/DO-214AB (SMC)(LITTELFUSE)RoHS	0.5385	2	1.7884
171-368333-200G	DIODE TVS,3.3V 4-CHANNEL ESD SOLUTION,AZ8333-04F/DFN2525P10E(AMAZING) RoHS	0.5385	2	1.7884
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	8.2795	5	50.5731
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	2.8884	2	8.9237
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	2.8884	1	5.1202
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	17.9506	7	147.6590
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	17.9506	1	26.4362
172-318533-200S	MOSFET N-Ch,VDS:60V,ID:17A,VGS:±20V,@10V RDS:4.7mΩ,CSD18533Q5A/SON(TI) RoHS	17.9506	1	26.4362
172-386255-200G	MOSFET N-Ch,VDS:150V,ID:45A,VGS:±20V,10V,RDS:12.4mΩ,F DMS86255/PQFN-8(5x6)(ON)RoHS	17.9506	1	26.4362
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	17.9506	1	26.4362
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	17.9506	1	26.4362
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	1.1876	1	2.3295
212-133086-200G	HYBRID ELEC CAP,33uF/63V,30mΩ,2100mA,SMD,Φ10*10.5,105°C /10000h,M(20%),63HVVH33M(SUNCON)RoHS	1.3266	1	1.7512
213-151005-200C	MLCC 10pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	1	0.1261
213-151015-200C	MLCC 101P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	1	0.1261
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	2	0.2438
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	2	0.2438

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620

Failure Rate: 2,322.2325

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	4	0.4757
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	2	0.2438
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	1	0.1261
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1118	11	1.2770
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	1	0.1261
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	2	0.2438
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	1	0.1261
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1118	7	0.8203
213-251029-800C	MLCC 102P/3KV,X7R,K(10%),SMD,1808,(None JP) RoHS	0.1118	1	0.1261
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1118	2	0.2438
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.1118	4	0.4757
213-251048-230J	MLCC 104P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1118	2	0.2438
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.1118	75	8.5070
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1118	22	2.5262
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1118	11	1.2770
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.1118	15	1.7321
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1118	11	1.2770
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1118	37	4.2227
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1118	2	0.2438
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1118	17	1.9592
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1118	2	0.2438
213-251069-520J	MLCC 106P/10V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1118	10	1.1630
213-251069-540J	MLCC 106P/16V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1118	6	0.7057
213-251069-610J	MLCC 106P/25V,X5R,K(10%),SMD,1206,(JP)RoHS	0.1118	12	1.3909
213-251069-680J	MLCC 106P/50V,X5R,K(10%),SMD,1206(JP)RoHS	0.1118	2	0.2438
213-252028-300C	MLCC 202P/50V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.1118	1	0.1261
213-252239-220J	MLCC 223P/50V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1118	1	0.1261
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1118	10	1.1630
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1118	47	5.3515
213-252268-330J	MLCC 226P/10V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1118	2	0.2438
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.1118	4	0.4757
213-252269-620C	MLCC 226P/16V,X5R,K(10%),SMD,1206,(None JP) RoHS	0.1118	1	0.1261
213-253939-240J	MLCC 393P/25V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1118	1	0.1261

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620
Failure Rate: 2,322.2325
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1118	5	0.5909
213-254729-80AG	MLCC 4700pF,250V,X7R,K (10%),SMD,1812,SCC1812X472K302TG(HEC)RoHS	0.1118	2	0.2438
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1118	4	0.4757
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1118	4	0.4757
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1118	3	0.3601
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M (20%),T520B107M006ATE040(KEMET)RoHS	1.3266	2	3.2494
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M (20%),B3528(1.9),T520B227M006ATE045(KEMET) RoHS	1.3266	3	4.7073
223-015122-600G	CHOKE 0.15uH,M (20%),RDC ≤ 0.66mΩ,Idc ≤ 36A,Isat=45A,SMD, (7.6*6.6*3.8),PCME064T-R15MS0R667(CYNTEC) RoHS	0.1536	1	0.1903
223-015222-620G	CHOKE 1.5uH,M (20%),RDC ≤ 14mΩ,Idc=9A,Isat=18A,SMD, (7.3x6.6x3),PCMC063T-1R5MN(CYNTEC)RoHS	0.1536	1	0.1903
223-036121-700G	CHOKE 0.36uH,M (20%),DCR ≤ 12mΩ,Irms:9A,Isat:11A,SMD (4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	0.1536	1	0.1903
223-047120-820G	CHOKE 0.47uH,M (20%),RDC ≤ 39mΩ,Irms=3.5A,SMD, (2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	0.1536	2	0.3588
223-047122-620G	CHOKE 0.47uH,M (20%),RDC ≤ 4.2mΩ,Idc=17.5A,Isat=26A,SMD, (7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	0.1536	2	0.3588
223-410040-501S	COMMON CHOKE 90Ω,M (20%),Idc ≤ 330mA,RDC ≤ 350mΩ,SMD (2.05*1.25*1.4mm),After D/C 1936 is the bottom convex,CMM21T-900M-N(CHILISIN)	0.1536	1	0.1903
223-410562-910G	COMMON CHOKE 1000uH,-30%~+50%,SMD, (9.5*5.65*4.9),YT-34058(ELYTONE)RoHS	0.1536	1	0.1903
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC ≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	0.1536	4	0.6860
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	0.1536	2	0.3588
226-134059-200G	TRANSFORMER EP13 SMD 10P,YT-34059(ELYTONE) RoHS	4.1892	1	5.8589
231-171330-200G	REGULATOR GS7133TD-R,3A,TDFN10(GSTEK)RoHS	19.2561	4	113.3251
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	7.5521	1	12.4488

File Name: AL05P-BC-23E30.rfp
Assembly: 774-AL05P1-000G
Ref Des:
Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620
Failure Rate: 2,322.2325
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	7.5521	1	12.4488
241-432773-314G	X'TAL 32.768kHz,12.5pf,±20ppm,ESR:70KΩ(Max),TOPR=-40°C~+85°C,SMD3215(2PAD),Q13FC1350000400(EPSON)RoHS	7.5521	1	12.4488
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	11.1310	1	18.1204
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	0.8378	2	2.7874
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	3	1.6363
253-100155-604S	POLYSWITCH,PTC,1.5A/8V,SMD1206,1206L150THW R(LITTELFUSE)	0.4000	1	0.6546
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES ARRAY 150Ω 8P4R J(5%),0402*4,(None JP) RoHS	0.1117	2	0.2753
261-364725-200C	RES ARRAY 4.7KΩ 8P4R J(5%),0402*4,(None JP) RoHS	0.1117	1	0.1487
263-120017-618G	PMS RES 1W,1mΩ,F(1%),SMD,1206,LR1206-21R001F*(RALEC)RoHS	0.1117	2	0.2753
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.1117	37	4.3511
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.1117	30	3.5474
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.1117	7	0.8767
263-180100-110C	RES 10Ω,F(1%),SMD,0201,(None JP)RoHS	0.1117	11	1.3476
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	8	0.9949
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.1117	2	0.2753
263-180100-510C	RES 10Ω,F(1%),SMD,0805,(None JP)RoHS	0.1117	1	0.1487
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.1117	9	1.1128
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-180438-610C	RES 0.43Ω,F(1%),SMD,1206,(None JP)RoHS	0.1117	2	0.2753
263-180479-510C	RES 4.7Ω,F(1%),SMD,0805,(None JP)RoHS	0.1117	1	0.1487
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-180750-510C	RES 75Ω,F(1%),SMD,0805,(None JP)RoHS	0.1117	2	0.2753
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.1117	2	0.2753
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	7	0.8767
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	13	1.5813
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	7	0.8767
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.1117	2	0.2753
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	42	4.9239
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	20	2.3943
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	9	1.1128
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	4	0.5198
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	3	0.3984

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620

Failure Rate: 2,322.2325

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181242-210C	RES 12.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	6	0.7593
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181692-210C	RES 16.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.1117	3	0.3984
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	3	0.3984
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	2	0.2753
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	5	0.6399
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-182152-310C	RES 21.5KΩ,F(1%),SMD,0603,(None JP)RoHS	0.1117	1	0.1487
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	2	0.2753
263-182202-210C	RES 22KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-182400-110C	RES 240Ω,F(1%),SMD,0201,(None JP)RoHS	0.1117	4	0.5198
263-182492-210C	RES 24.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-182553-210C	RES 255KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-182872-210C	RES 28.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-183092-210C	RES 30.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-183099-510C	RES 30.9Ω,F(1%),SMD,0805 (None JP)RoHS	0.1117	1	0.1487
263-183162-210C	RES 31.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-183300-210C	RES 330Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	3	0.3984
263-183301-110C	RES 3.3KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	6	0.7593
263-183301-210C	RES 3.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-183302-110C	RES 33KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	3	0.3984
263-183303-210C	RES 330KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-183305-100C	RES 33Ω,J(5%),SMD,0201,(None JP)RoHS	0.1117	14	1.6979
263-183901-210C	RES 3.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184020-210C	RES 402Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	3	0.3984
263-184021-210C	RES 4.02KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184122-210C	RES 41.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184532-210C	RES 45.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184701-110C	RES 4.7KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	38	4.4657

File Name: AL05P-BC-23E30.rfp

Assembly: 774-AL05P1-000G

Ref Des:

Calculation Model: Telcordia Issue 4



MTBF (hrs): 430620

Failure Rate: 2,322.2325

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-184701-210C	RES 4.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	3	0.3984
263-184702-110C	RES 47KΩ,F(1%),SMD,0201,(None JP)RoHS	0.1117	8	0.9949
263-184750-210C	RES 475Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184872-210C	RES 48.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184990-210C	RES 499Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184991-210C	RES 4.99KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-184992-210C	RES 49.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-185102-210C	RES 51KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	4	0.5198
263-185110-210C	RES 511Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-185112-210C	RES 51.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-185230-210C	RES 523Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-185362-210C	RES 53.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-185600-210C	RES 560Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-185621-210C	RES 5.62KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-186040-210C	RES 604Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-186049-210C	RES 60.4Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-186981-210C	RES 6.98KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-187502-210C	RES 75KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-187870-210C	RES 787Ω,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-188062-210C	RES 80.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-188201-210C	RES 8.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-188451-210C	RES 8.45KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-188459-210C	RES 84.5Ω,F(1%),SMD,0402 (None JP)RoHS	0.1117	1	0.1487
263-188871-210C	RES 8.87KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-188872-210C	RES 88.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-189312-210C	RES 93.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
263-189531-210C	RES 9.53KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	2	0.2753
263-189762-210C	RES 97.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.1117	1	0.1487
273-100402-301S	THERM RES 10KΩ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	5.1159	2	17.1593
314-AL05P1-109G	PCB AL05P R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	12.6680	1	24.1406
342-112003-211G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH5(WIN WIN)RoHS	10.7191	1	18.5590
343-500644-140G	Giga LAN CONN RJ45 30μ,R/A W/Transformer&LED G-O/G,DIP,JFM3811Q-FLP1-4F(FOXCONN)RoHS	10.7191	1	18.5590
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	10.7191	1	18.5590
346-120310-201G	PIN PLUG 2*3, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180806P(V-STAR)RoHS	75.0334	2	227.3661
346-120511-201G	PIN PLUG 2*5, 1.27mm, H=5mm, 180D, SMD, SHY- JCL180810P(V-STAR)RoHS	75.0334	3	319.3764
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	75.0334	1	129.9132
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	5.8468	1	9.5280

File Name: AL05P-BC-23E30.rfp**Assembly:** 774-AL05P1-000G**Ref Des:****Calculation Model:** Telcordia Issue 4**MTBF (hrs):** 430620**Failure Rate:** 2,322.2325**Temperature:** 60**Environment:** GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	5.8468	1	9.5280
622-010140-000G	BATTERY CR2032(MURATA) 3V 220mAh,-30°C ~+70°C,W/CABLE(L=150mm&TAPE),BIN-CR2032-I- CT-SL-PV-01(RE-ENERGY)RoHS Belong to UN3090	25.0000	1	34.9638
682-115090-401G	PRGM AL Series/PIC16F1509-I/ML,CK:E6E4 CL:BROWN File:E184.17A RoHS	19.2561	1	37.4477
143-101300-402G	CPU Intel Atom x5-E3930 1.3GHz C/2M,F1,LH8066803102701 SREKA/FCBGA-1296 (INTEL)RoHS	159.0000	1	159.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000