

Table 18. A1 Main PCA

Reference Designator	Description	Part Number	Cage	Manufacturer's Part Number	Qty
C1	CAPACITOR,FILM,POLYESTER,0.022UF, +-10%,1000V,10MM LS RADIAL,BULK	2117948	65964	MMK10223K1000A04L4	1
C2 C39 C57	CAPACITOR, SMR,CAP,CER,0.01UF, +-10%,50V,X7R,0603	644838	04222	06035C103KAT2A	3
C3	CAPACITOR, SMR,CAP,CER,180PF, +-5%,100V,C0G,0805	689588	04222	08051A181JAT1A	1
C4-5 C8 C12 C14 C19-21 C25 C28	CAPACITOR,CERAMIC,0.1UF, +-10%,25V,X7R,0805,TAPE	942529	04222	08053C104KAT3A	10
C6	CAPACITOR,ELECTROLYTIC,TANTALUM, 22UF,+-10%,6V,3216,TAPE	2053857	04222	TAJA226K006R	1
C7	CAPACITOR,ELECTROLYTIC,TANTALUM, 33UF,+-20%,16V,6032,0.300 OHM ESR,TAPE	1614265	31433	T495C336_016AS	1
C9-10	CAPACITOR, FILM,POLYPHENYLENE,0.022UF, +-10%,50V,5750,TAPE	802501	65964	SMC5.7 223K50J31 TR12	2
C11	CAPACITOR, SMR,CAP,CER,470PF, +-5%,50V,C0G,1206	943365	04222	12065A471JAT1A	1
C15	CAPACITOR, SMR,CAP,TA,4.7UF, +-20%,16V,3528	745976	04222	TAJB475M016R	1
C16	CAPACITOR,ELECTROLYTIC,TANTALUM, 47UF,+-20%,10V,3528,TAPE	1663963	04222	TAJB476K010R	1
C17	CAPACITOR,CERAMIC,0.1UF, +-20%,16V,X7R,0603,TAPE	1579869	04222	0603YC104MAT2A	1
C18 C22 C27 C29	CAPACITOR, SMR,CAP,TA,10UF, +-20%,10V,3528	603032	04222	TAJB106M010R	4
C26 C31	CAPACITOR, SMR,CAP,CER,0.01UF, +-10%,50V,X7R,1206	747261	04222	12061C103KAT1A	2
C32-35	CAPACITOR, SMR,CAP,CER,1000PF, +-10%,50V,X7R,0603	605342	04222	06035C102KAT2A	4
C36	CAPACITOR,CERAMIC,2700PF, +-5%,50V,C0G,1206,TAPE	688986	04222	12065A272JAT1A	1
C37	CAPACITOR,CERAMIC,390PF, +-5%,50V,C0G,1206,TAPE	887278	04222	12065A391JAT1A	1
C38	CAPACITOR, SMR,CAP,CER,6800PF, +-10%,50V,X7R,0805	604238	04222	08055C682KAT1A	1
C43	CAPACITOR,CERAMIC,1.5PF, +0.1PF,1KVAC/DC,COK,5MMLS,RADIAL, BULK	2138739	89536	2138739	1
C50	CAPACITOR,CERAMIC,100PF, +-5%,100V,C0G,0805,TAPE	601028	04222	08051A101JAT1A	1
C56	CAPACITOR SMR,CAP,CER,100PF, +-10%,50V,C0G,1206	740571	04222	12065A101KAT1A	1
CR1 CR3	DIODE,GF1B SMR,DIODE,SI,100V,1A, DO-214	912451	24444	GF1B	2
CR2	DIODE,SI,PN,DF01S,100V,1A,BRIDGE, 4 PIN SURFACE MOUNT,3530,TAPE	912456	0KTV3	DB104S-T	1
CR5-6 CR8-10	DIODE,SI,PN,BAV199,70V,140MA,3US, DUAL,SERIES,SOT-23,TAPE	605805			5
DS3	LED,WHITE,NICHIA NSCW100,310MCD,20MA,4V,IV RANK S-T,COLOR RANK B1-B2,1208,TAPE	2096202	1B1N5	NSCW100 (RANK S- T,B1-B2)	1
J1	INPUT RCPT ASSY	826214	89536	826214	1
J3	CONNECTOR,HEADER, CONNECTOR, 1 ROW, 2MM CTR, VERTICAL PCB MOUNT, 2 PIN, BULK	2002420	27264	87553-0210	1
L1	INDUCTOR,BEAD,60 OHMS@100MHZ,6ADC,10MOHM,1806,TAPE	944645	32897	BLM41PG600SN1D (T/R)	1
L2 L4	INDUCTOR,BEAD,220 OHMS@100MHZ,200MA,0603,TAPE	1554422	32897	BLM18AG221SN1D	2
Q13	MOSFET,SI,P,IRLML6302,20V,780MA,600 MOHMS,540MW,SOT-23,TAPE	1641929	81483	IRLML6302TR	1

Table 18. A1 Main PCA (cont.)

Reference Designator	Description	Part Number	Cage	Manufacturer's Part Number	Qty
Q3 Q6 Q14	NPN,MMBT3904 SMR,TRANSISTOR,SI,NPN,60V,350MW,SO T-23	742676	89536	742676	3
Q4-5 Q8 Q17	TRANSISTOR,SI,NPN,MMBT5089,30V,50M A,50MHZ,200MW,SOT-23,TAPE	820902	65940	SST5089	4
Q7	TRANSISTOR,SI,PNP,MMBT3906,40V,200 MA,250MHZ,225MW,SOT-23,TAPE	742684	89536	742684	1
R1	RESISTOR,CERMET COMPOSITION,1K, +-10%,1W,-1300+-300PPM,TAPE	1275713	59124	PCF1-102K-T631 <D>	1
R2	RESISTOR, SMR,RES,CERM,1K, +-5%,1W,200PPM,2512	601176	18612	CRCW2512-102JR82	1
R3	RESISTOR,CERMET,2K, +-1%,0.1W,100PPM,0805,TAPE	928742	18612	CRCW-0805-2001F-RT1	1
R4	RESISTOR,METAL FILM,110,+- 0.1%,0.25W,25PPM,1210,TAPE	2064399	59124	RN732ELTD1100B25	1
R5	RESISTOR, SMR,RES,WW,1, +-1%,2W,75PPM,1270	642790	18612	WSR-2,1-OHM,+-1%	1
R6	RESISTOR,WIREWOUND,0.010,+- 2%,1W,100PPM,RADIAL,BULK	2117705	18612	SPU101R01000GD	1
R7 R10	RESISTOR, RES,CERM,1M,+ 5%,1W,200PPM	912589	ODBE5	RG1/2-1M-5%(W/LEAD)	2
R8	RESISTOR,METAL FILM,856,+ 0.5%,0.1W,50PPM,0805,TAPE	2093973	59124	RN732ALTD8560D50	1
R9	RESISTOR, SMR,RES,CERM,1M, +-1%,.125W,100PPM,1206	836387	18612	CRCW-1206-1004F-RT2	1
R11 R48	RESISTOR,CERMET,10M, +-1%,0.1W,400PPM,0805,TAPE	943659	18612	CRCW-0805-1005F-RT2	2
R12	RESISTOR,CERMET,3.01K, +-1%,0.125W,100PPM,0805,TAPE	1591278	18612	CRCW08053011FRT1	1
R14 R99	RESISTOR, SMR,RES,CERM,5.62K, +-1%,0.1W,100PPM,0805	930110	18612	CRCW-0805-5621F-RT1	2
R15	RESISTOR,CERMET,845K, +-1%,0.1W,100PPM,0805,TAPE	1292164	18612	CRCW08058453FRT1	1
R16 R29-30 R32	RESISTOR, SMR,RES,CERM,226K, +-1%,.063W,100PPM,0603	643871	18612	CRCW-0603-2263FRT1	4
R17-18 R33 R73-74 R80	RESISTOR, SMR,RES,CERM,1M, +-1%,.063W,100PPM,0603	643848	18612	CRCW-0603-1004FRT1	6
R19	RESISTOR, SMR,RES,CERM,40.2K, +-1%,.063W,100PPM,0603	689700	18612	CRCW-0603-4022FRT1	1
R20 R25-26 R35-37 R40 R43 R53-55 R58-61 R68 R98	RESISTOR, SMR,RES,CERM,100K, +-1%,.063W,100PPM,0603	643863	18612	CRCW-0603-1003FRT1	17
R21 R63	RESISTOR, SMR,RES,CERM,10K, +-1%,.063W,100PPM,0603	605052	18612	CRCW-0603-1002FRT1	2
R22 R103	RESISTOR, SMR,RES,CERM,1M, +-1%,0.1W,200PPM,0805	928945	18612	CRCW-0805-1004F-RT2	2
R27	RESISTOR, SMR,RES,CERM,4.32K, +-1%,.063W,100PPM,0603	605250	18612	CRCW-0603-4321FRT1	1
R28	RESISTOR, SMR,RES,MF,1K, +-0.1%,0.1W,50PPM,0805	802469	ODBE5	PCF-W0805R-02-1001-B	1
R31	RESISTOR, SMR,RES,CERM,49.9K, +-1%,.063W,100PPM,0603	643921	18612	CRCW-0603-4992FRT1	1
R34 R84	RESISTOR,CERMET,200K, +-1%,0.063W,100PPM,0603,TAPE	1562307	18612	CRCW06032003FRT1	2
R41	RESISTOR, SMR,RES,CERM,21.0K, +-1%,.063W,100PPM,0603	642261	18612	CRCW-0603-2102FRT1	1

Table 18. A1 Main PCA (cont.)

Reference Designator	Description	Part Number	Cage	Manufacturer's Part Number	Qty
R44 R47	RESISTOR, SMR,RES,CERM,475K, +-1%,.125W,100PPM,1206	943530	18612	CRCW-1206-4753F-RT2	2
R46	RESISTOR, SMR,RES,CERM,1K, +-1%,.063W,100PPM,0603	649720	18612	CRCW-0603-1001FRT1	1
R50	RESISTOR, SMR,RES,CERM,12.1,+-1%,0.1W,100PPM,0805	930081	18612	CRCW-0805-12R1F-RT1	1
R51	RESISTOR,METAL FILM,24.9K,+-0.5%,0.063W,50PPM,0603,TAPE	2094011	59124	RN731JLTD2492D50	1
R52	RESISTOR,METAL FILM,249K,+-0.5%,0.063W,50PPM,0603,TAPE	2126890	18612	TNPW0603-2493DT2RT1	1
R85	RESISTOR, SMR,RES,CERM,49.9K, +-1%,0.1W,100PPM,0805	928697	18612	CRCW-0805-4992F-RT1	1
R86	RESISTOR, SMR,RES,CERM,102K, +-1%,.063W,100PPM,0603	605060	18612	CRCW-0603-1023FRT1	1
R87	RESISTOR, SMR,RES,CERM,107K, +-1%,0.1W,100PPM,0805	686748	18612	CRCW-0805-1073F-RT1	1
R88	RESISTOR,CERMET,97.6K, +-1%,0.063W,100PPM,0603,TAPE	2065578	18612	CRCW06039762F-RT1	1
R94	RESISTOR SMR,RES,CERM,499K,+-1%,.125W,100PPM,1206	821678	18612	CRCW-1206-4993F-RT2	1
R96	RESISTOR, SMR,RES,CERM,32.4, +-1%,0.1W,100PPM,0805	641974	18612	CRCW-0805-32R4F-RT1	1
R100-101	RESISTOR, SMR,RES,CERM,499K, +-1%,0.1W,100PPM,0805	944285	18612	CRCW-0805-4993F-RT1	2
R105	RESISTOR, SMR,RES,CERM,2.8K, +-1%,.063W,100PPM,0603	688572	18612	CRCW-0603-2801FRT1	1
R108	RESISTOR,CERMET,JUMPER,0,+0.05 MAX,0.063W,0603,TAPE	604394	18612	CRCW-0603-000-RT1	1
R109	RESISTOR, SMR,RES,CERM,10, +-1%,0.1W,100PPM,0805	928924	18612	CRCW-0805-10R0-RT1	1
RT1	THERMISTOR,POSITIVE,1.1K,+-20%,COATED,RADIAL,TAPE	1277360	58090	YS3961	1
RT2	THERMISTOR, SMR,THERMISTOR,CHIP,NEG,50K,+-5%	807875	18612	NTHS1005N01(50K-5%)	1
RV1-3	VARISTOR, R05R,VARISTOR,910, +-10%,1.0MA	876193	34371	V910LSX1399	3
U1	IC,ASIC,LTC984-1,+2.5V,DMM FUNCTIONS W/O AD OR RMS CONVERTERS,SSOP36,TAPE	2103969	64155	LTC984-1 (SL10327)	1
U2	IC,MICROCONTROLLER,MSP430F448,16 BIT,1.8-3.6V,3.3MHZ,FLASH,PQFP100,TRAY	2155866	01295	MSP430F448IPZ (TRAYS)	1
U3	IC,ADC,LTC2435-1,2.7/5.5V,20-BIT,DIFF,SERIAL,DELTA SIGMA,SSOP16,TAPE	2063400	64155	LTC2435-1CGN	1
U4	IC,OP AMP,OPA2347,2.3 - 5.5V,6MV OFFSET,350KHZ,DUAL,U-PWR,R/R,SO8,TAPE	1618826	01295	OPA2347UA/2K5	1
U5	CMOS 4069 SMR,IC,CMOS,HEX INVERTER,SOIC	838375	07263	CD4069UBCM	1
U6	IC,VOLTAGE REGULATOR, LINEAR, TPS71533,3.3V,50MA,LDO,LOW POWER,SOT-323-5,TAPE	1999667	01295	BQ71533DCKR	1

**Table 18. A1 Main PCA (cont.)**

Reference Designator	Description	Part Number	Cage	Manufacturer's Part Number	Qty
U7	IC,RMS CONVERTER,AD737J-5,+2.5V,LOW POWER,LOW SUPPLY VOLTAGE,SO8,TAPE	2089072	24355	AD737JR-5	1
U8	IC,VOLTAGE REFERENCE,LT1790,2.5V,0.1%,25PPM/C,60 UA,SOT-23-6,TAPE	1622188	64155	LT1790ACS6-2.5	1
U10	IC,VOLTAGE REGULATOR, LINEAR, TPS77050,5V,50MA,LDO,LOW POWER,SOT-23-5,TAPE	1642135	01295	TPS77050DBVR	1
U12	IC,ANALOG SWITCH,74HCT4053,5V,140 OHMS,TRIPPLE,SPDT,TSSOP16,TAPE	2064876	01295	CD74HCT4053PWR	1
U14	IC,LOGIC,7S08,2.0V-6.0V,SINGLE AND GATE,SC70-5,TAPE	2075176	07263	NC7S08P5X	1
VR1	ZENER,UNCOMP,MMSZ5237B,8.2V,5%, 20MA,500MW,SOD-123,TAPE	1597952	89536	1597952	1
XF1- XF2	FUSE CONTACT	659524	89536	659524	2
XF3 XF4	FUSE CONTACT	707190	89536	707190	2
Y1	CRYSTAL,32.768KHZ,30/105PPM,7PF,CLIP CAN,SMD,TAPE	1627036	89536	1627036	1
Z1	OEIGHTY-4R01T-N,R-NET, MF, POLY, SIP, OEIGHTY HI V DIVIDER	2057204	89536	2057204	1
Z2	76-4R01T-K,R-NET, CERM, SIP, HI V PROTECT	103454	89536	103454	1

## **Schematic Diagrams**

Reference designator drawings and schematic diagrams are provided on the following pages.

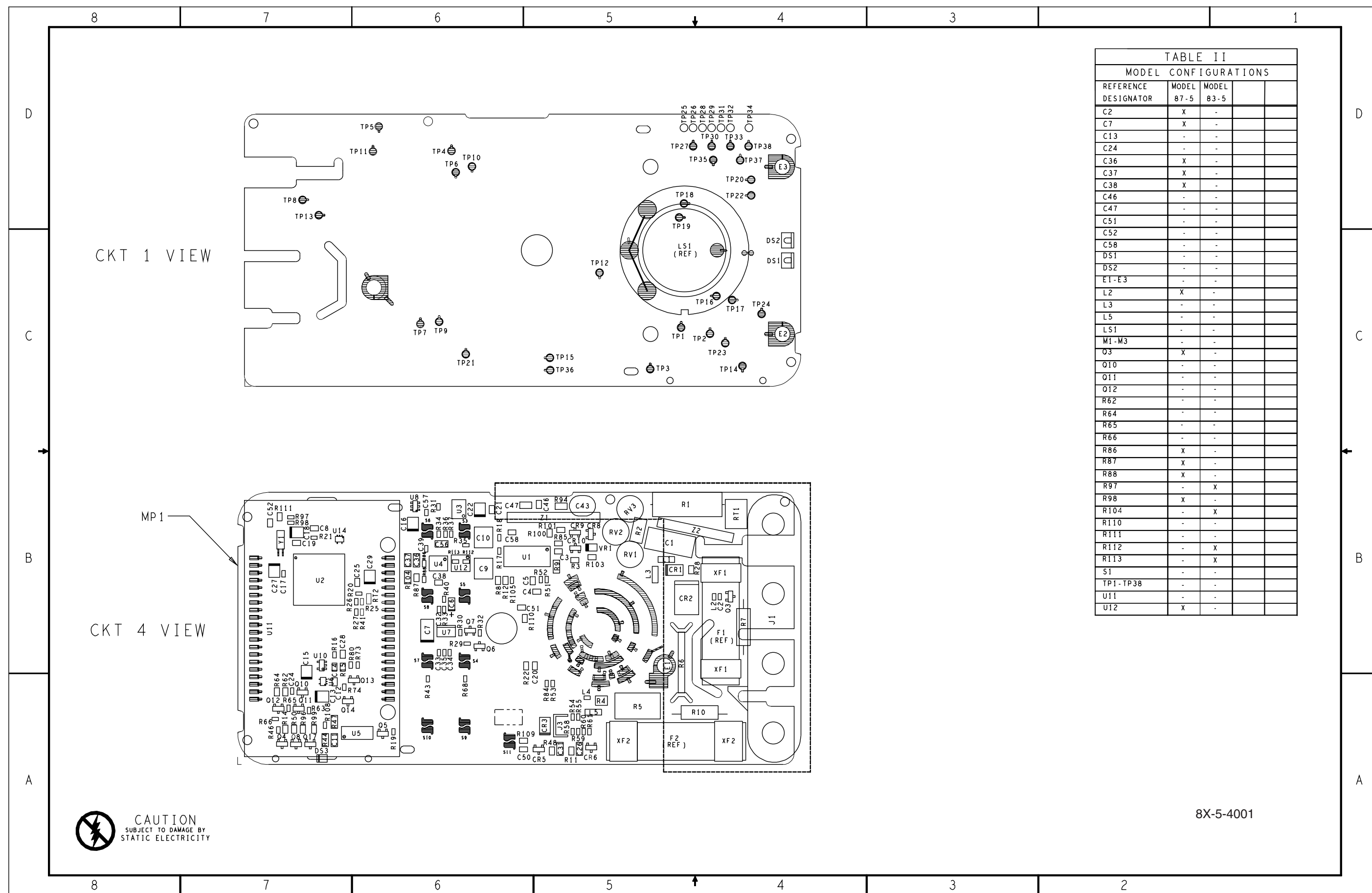
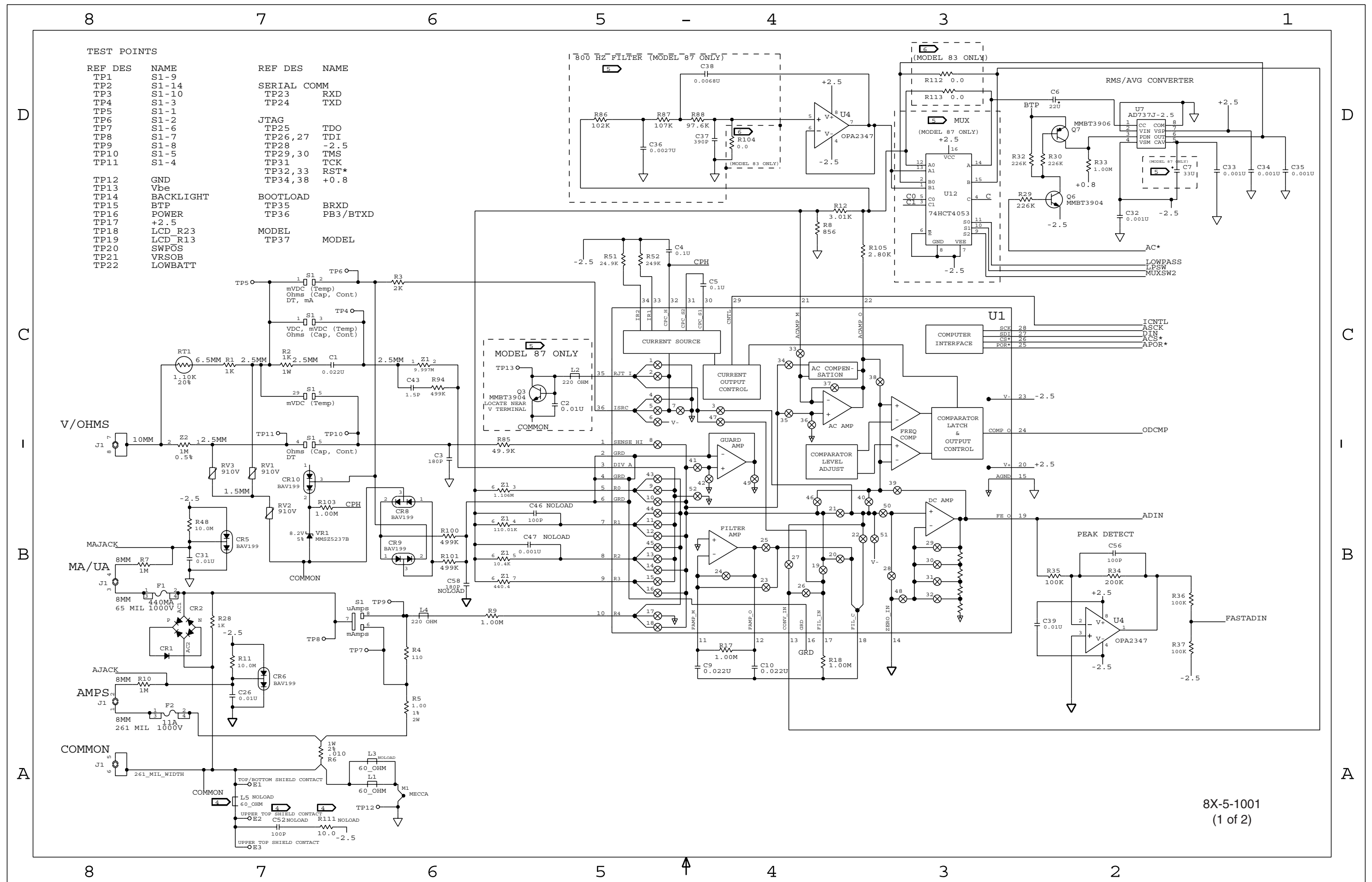


TABLE II  
MODEL CONFIGURATIONS

REFERENCE DESIGNATOR	MODEL 87-5	MODEL 83-5
C2	X	-
C7	X	-
C13	-	-
C24	-	-
C36	X	-
C37	X	-
C38	X	-
C46	-	-
C47	-	-
C51	-	-
C58	-	-
DS1	-	-
DS2	-	-
E1-E3	-	-
L2	X	-
L3	-	-
L5	-	-
LS1	-	-
M1-M3	-	-
O3	X	-
O10	-	-
O11	-	-
O12	-	-
R62	-	-
R64	-	-
R65	-	-
R66	-	-
R86	X	-
R87	X	-
R88	X	-
R97	-	X
R98	X	-
R104	-	X
R110	-	-
R111	-	-
R112	-	X
R113	-	X
S1	-	-
TP1-TP38	-	-
U11	-	-
U12	X	-

8X-5-4001

Figure 8. A1 LED PCA



8X-5-1001  
(1 of 2)

Figure 8. A1 LED PCA (cont)

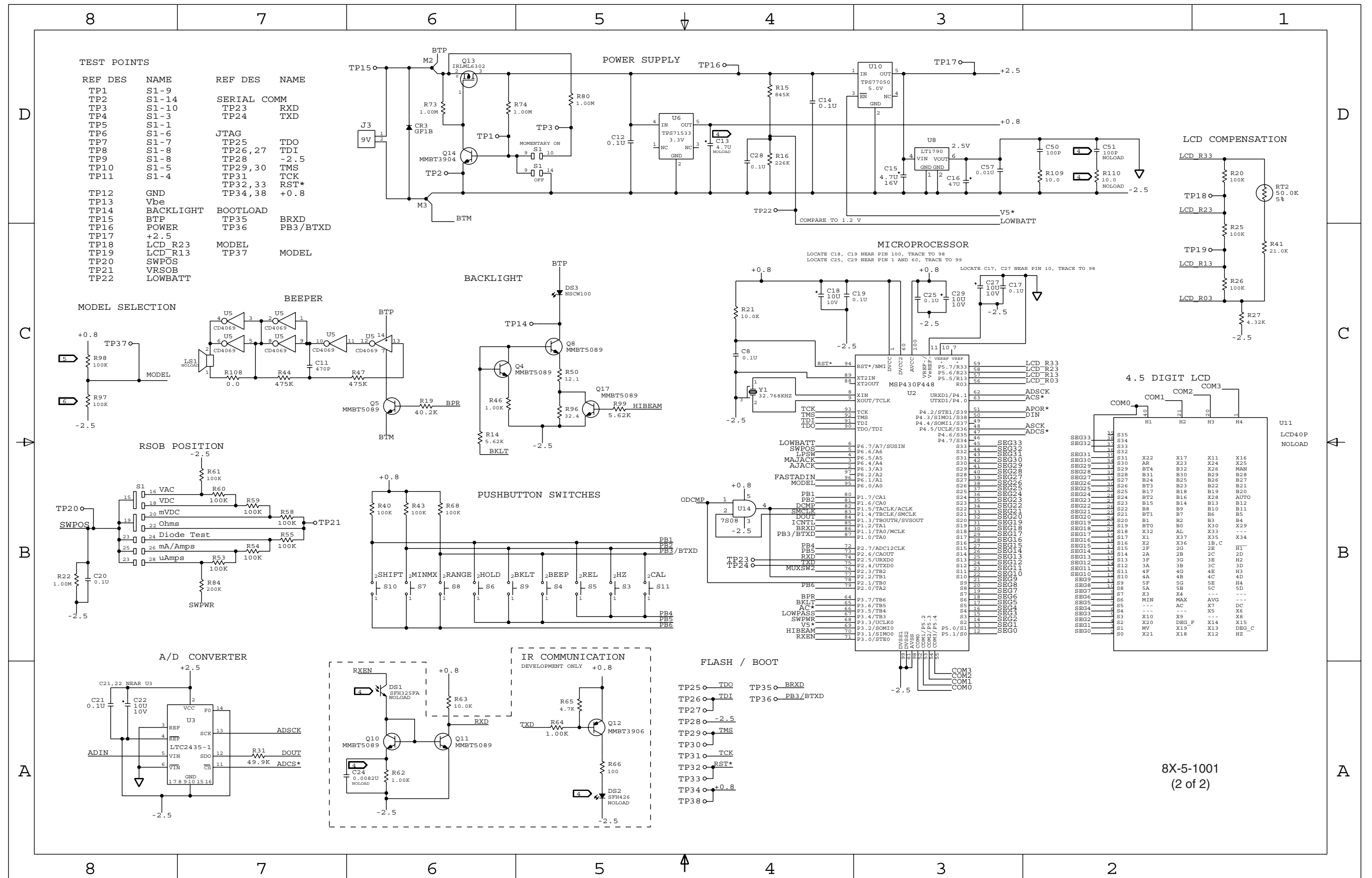


Figure 8. A1 LED PCA (cont)

