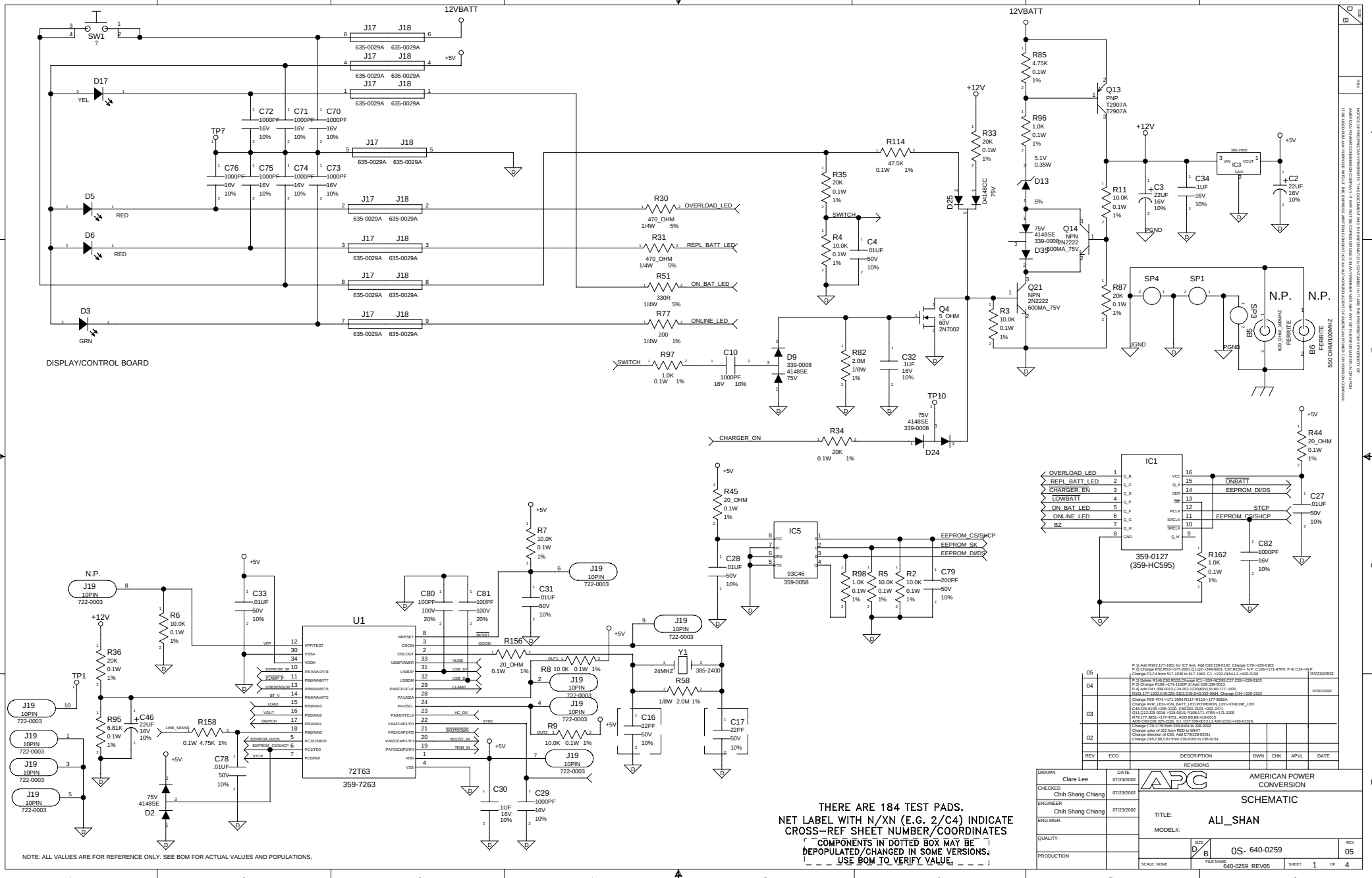
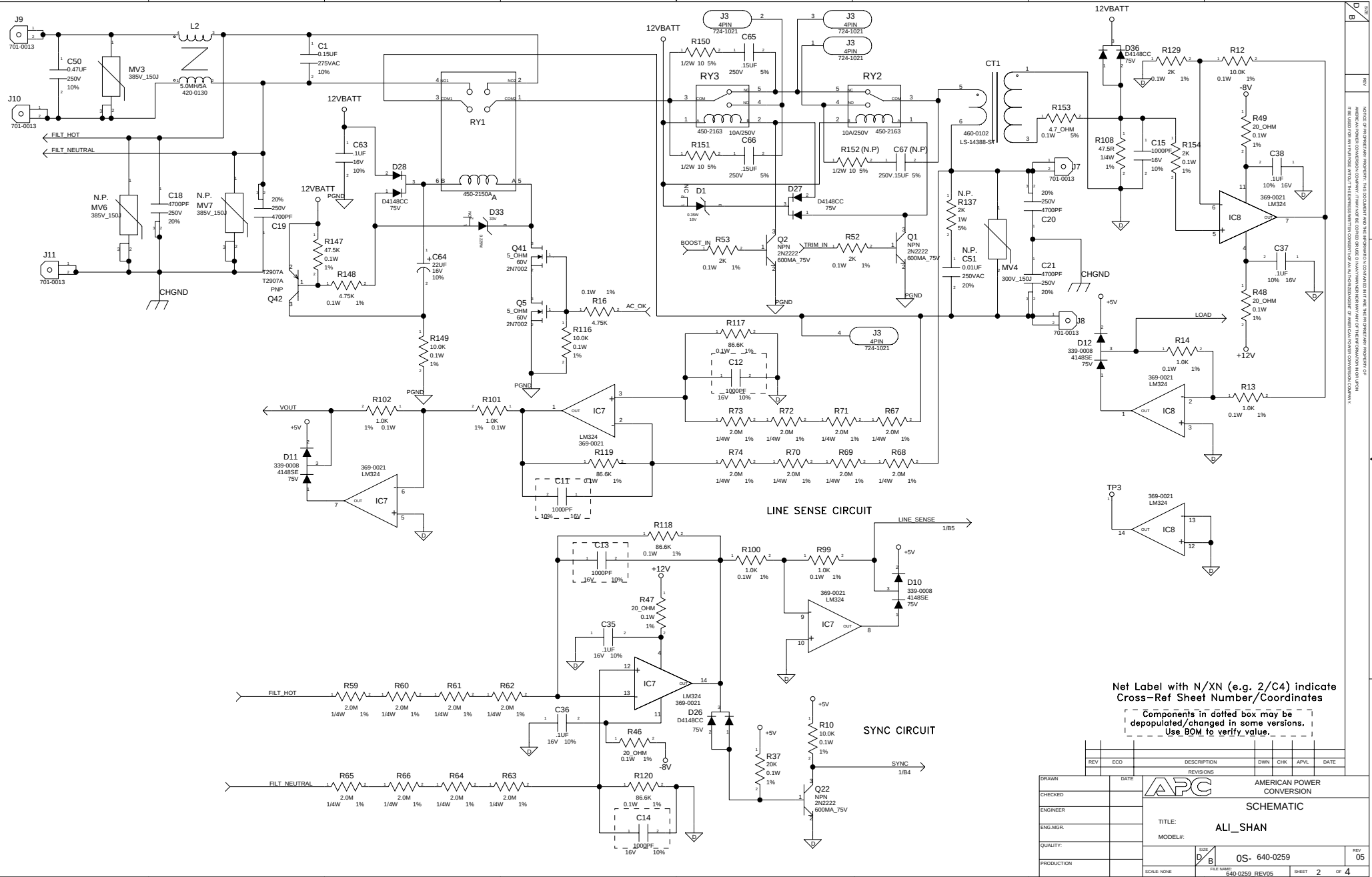
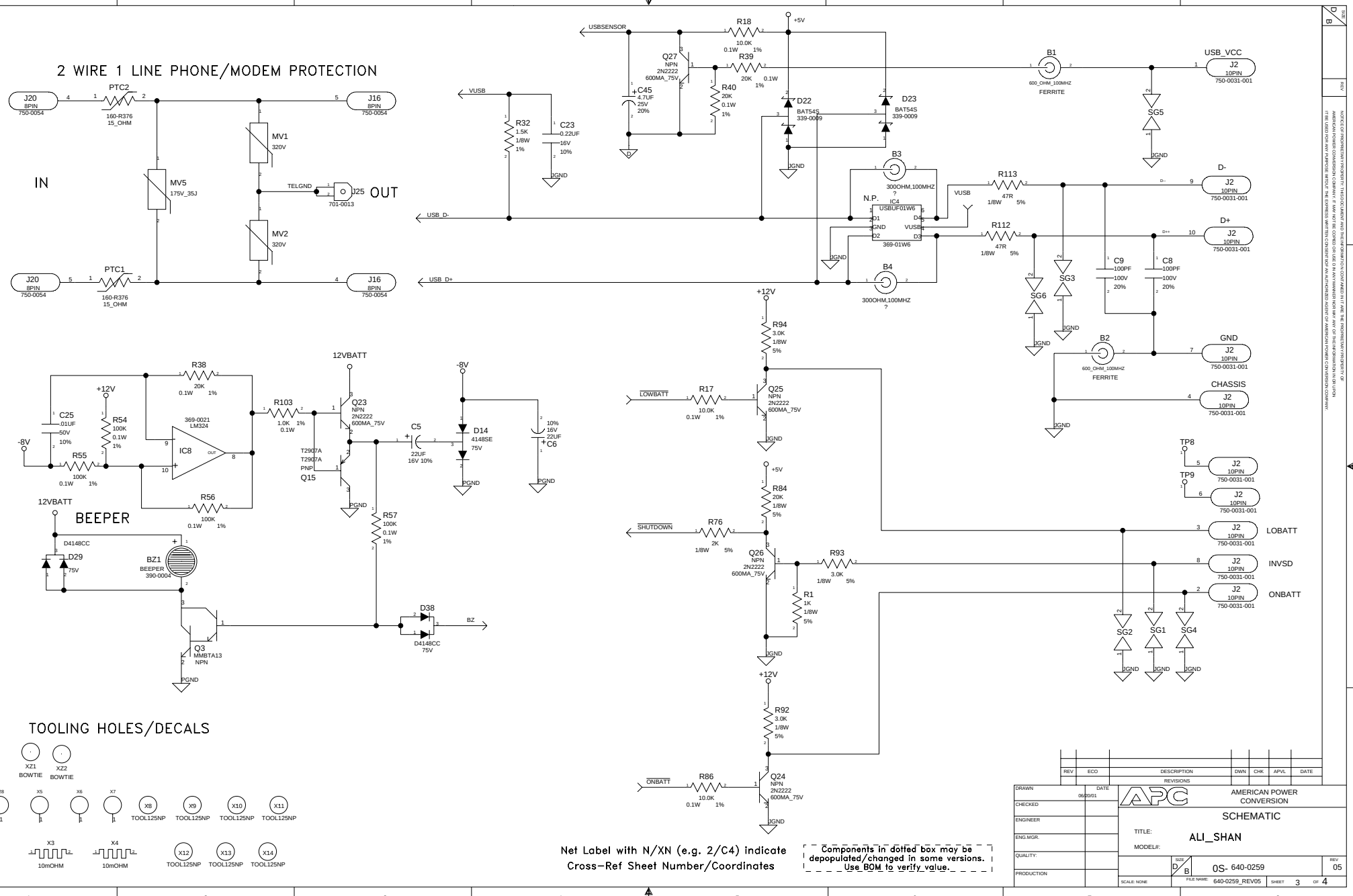
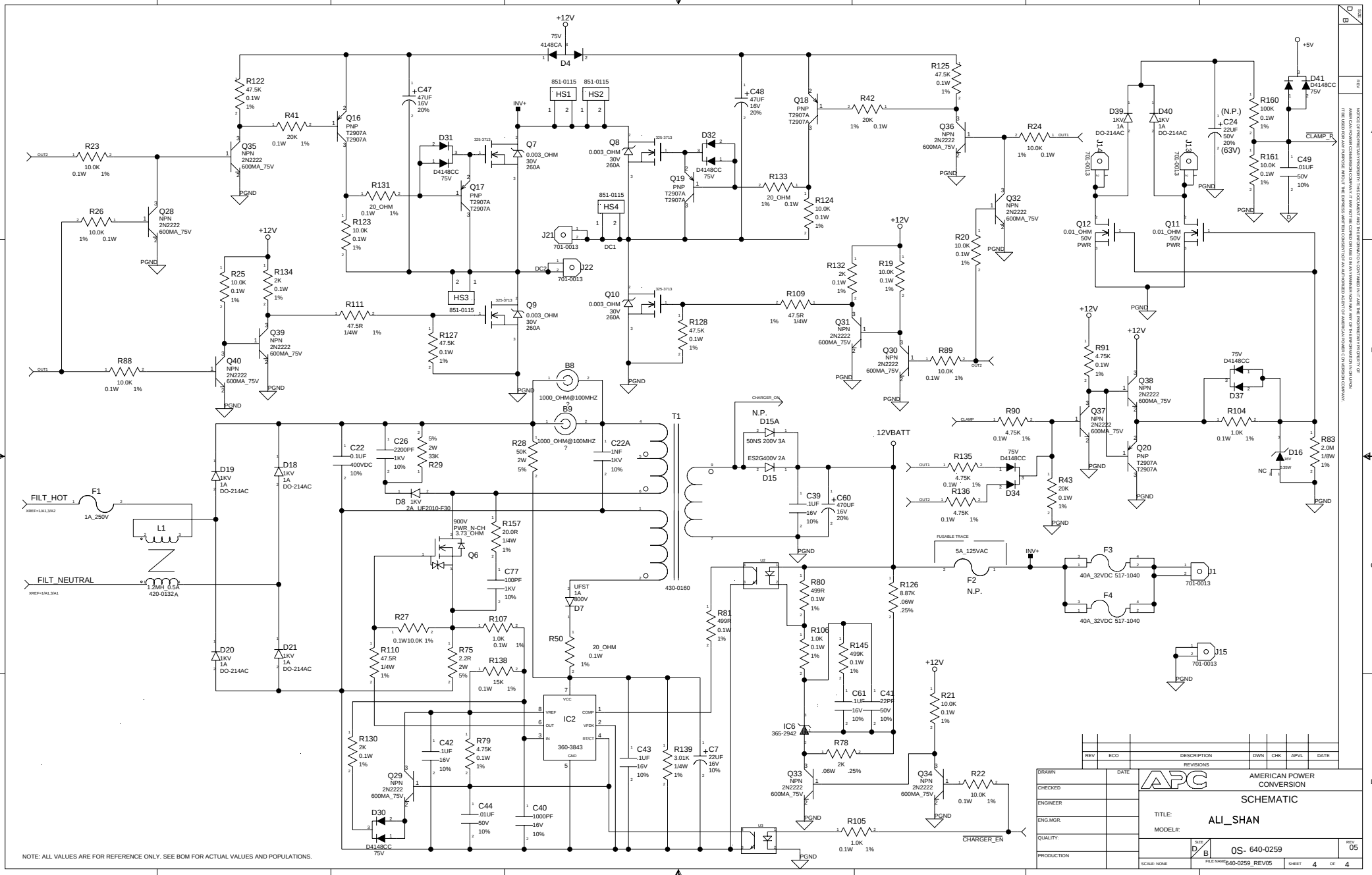

12VBATT
SW1
D17
YEL
D5
RED
D6
RED
D3
GRN
J17 J18
635-0029A
C72 1000PF 16V 10%
C71 1000PF 16V 10%
C70 1000PF 16V 10%
C76 1000PF 16V 10%
C75 1000PF 16V 10%
C74 1000PF 16V 10%
C73 1000PF 16V 10%
TP7
DISPLAY/CONTROL BOARD
R30 470_OHM 1/4W 5%
OVERLOAD_LED
R31 470_OHM 1/4W 5%
REPL_BATT_LED
R51 330R 1/4W 5%
ON_BAT_LED
R77 200 1/4W 1%
ONLINE_LED
R114 47.5K 0.1W 1%
R35 20K 0.1W 1%
SWITCH
R4 10.0K 0.1W 1%
C4 .01UF 50V 10%
D25 D4148CC 75V
R33 20K 0.1W 1%
+12V
R85 4.75K 0.1W 1%
Q13 PNP T2907A T2907A
R96 1.0K 0.1W 1%
5.1V 0.35W
D13 5%
75V 4148SE 339-0008
D35
Q14 NPN 2N2222 600MA_75V
R11 10.0K 0.1W 1%
C3 22UF 16V 10%
C34 1UF 16V 10%
IC3 365-2952
VIN VOUT GND
C2 22UF 16V 10%
+5V
PGND
R87 20K 0.1W 1%
SP4
SP1
SP3
B5
B6
N.P.
FERRITE
550 OHM/100MHZ
600_OHM_100MHZ
Q21 NPN 2N2222 600MA_75V
R3 10.0K 0.1W 1%
Q4 5_OHM 60V 2N7002
D9 339-0008 4148SE 75V
R82 2.0M 1/8W 1%
C32 .1UF 16V 10%
C10 1000PF 16V 10%
R97 1.0K 0.1W 1%
TP10
D24
CHARGER_ON
R34 20K 0.1W 1%
R44 20_OHM 0.1W 1%
IC1
OVERLOAD_LED
REPL_BATT_LED
CHARGER_EN
LOWBATT
ON_BAT_LED
ONLINE_LED
BZ
ONBATT
EEPROM_DI/DS
STCP
EEPROM_CS/SHCP
359-0127
(359-HC595)
R162 1.0K 0.1W 1%
C82 1000PF 16V 10%
C27 01UF 50V 10%
R45 20_OHM 0.1W 1%
C28 .01UF 50V 10%
IC5
93C46
359-0058
EEPROM_CS/SHCP
EEPROM_SK
EEPROM_DI/DS
R98 1.0K 0.1W 1%
R5 10.0K 0.1W 1%
R2 10.0K 0.1W 1%
C79 200PF 50V 10%
R7 10.0K 0.1W 1%
C31 01UF 50V 10%
J19 10PIN 722-0003
C80 100PF 100V 20%
C81 100PF 100V 20%
U1
72T63
359-7263
R156
20_OHM 0.1W 1%
R8 10.0K 0.1W 1%
R9 10.0K 0.1W 1%
Y1
24MHZ
385-2400
R58 1/8W 2.0M 1%
C16 22PF 50V 10%
C17 22PF 50V 10%
C30 1UF 16V 10%
C29 1000PF 16V 10%
N.P.
C33 .01UF 50V 10%
R6 10.0K 0.1W 1%
R36 20K 0.1W 1%
TP1
R95 6.81K 0.1W 1%
C46 22UF 16V 10%
LINE_SENSE
R158 0.1W 4.75K 1%
C78 .01UF 50V 10%
75V 4148SE D2
NOTE: ALL VALUES ARE FOR REFERENCE ONLY. SEE BOM FOR ACTUAL VALUES AND POPULATIONS.
THERE ARE 184 TEST PADS.
NET LABEL WITH N/XN (E.G. 2/C4) INDICATE CROSS-REF SHEET NUMBER/COORDINATES
COMPONENTS IN DOTTED BOX MAY BE DEPOPULATED/CHANGED IN SOME VERSIONS. USE BOM TO VERIFY VALUE.
AMERICAN POWER CONVERSION
SCHEMATIC
TITLE:
ALI_SHAN
MODEL#:
0S- 640-0259
REV 05
SCALE: NONE
FILE NAME: 640-0259_REV05
SHEET 1 OF 4
DRAWN Clare Lee 07/23/2002
CHECKED Chih Shang Chiang 07/23/2002
ENGINEER Chih Shang Chiang 07/23/2002
ENG.MGR.
QUALITY:
PRODUCTION
05 07/23/2002
04 07/02/2002
03
02
REV ECO DESCRIPTION DWN CHK APVL DATE
REVISIONS


LINE SENSE CIRCUIT
SYNC CIRCUIT
Net Label with N/XN (e.g. 2/C4) indicate Cross-Ref Sheet Number/Coordinates
Components in dotted box may be depopulated/changed in some versions. Use BOM to verify value.
AMERICAN POWER CONVERSION
SCHEMATIC
TITLE:
ALI_SHAN
MODEL#:
0S- 640-0259
REV 05
SHEET 2 OF 4
FILE NAME: 640-0259_REV05
SCALE: NONE
DRAWN
CHECKED
ENGINEER
ENG.MGR.
QUALITY:
PRODUCTION
REVISIONS
REV ECO DESCRIPTION DWN CHK APVL DATE


2 WIRE 1 LINE PHONE/MODEM PROTECTION
IN
OUT
PTC2
PTC1
MV1
MV2
MV5
J20
J16
J25
TELGND
USB_D-
USB_D+
USBSENSOR
VUSB
R18
R39
R40
Q27
D22
D23
B1
B2
B3
B4
C45
R32
C23
USB_VCC
D-
D+
GND
CHASSIS
R113
R112
C9
C8
SG3
SG5
SG6
IC4
USBUF01W6
369-01W6
+12V
-8V
12VBATT
R94
R17
Q25
LOWBATT
R84
R76
Q26
SHUTDOWN
R93
R1
R92
R86
Q24
ONBATT
R38
R54
R55
R56
IC8
369-0021
LM324
R103
Q23
Q15
C5
D14
C6
R57
BEEPER
D29
BZ1
Q3
D38
BZ
TP8
TP9
LOBATT
INVSD
ONBATT
SG1
SG2
SG4
TOOLING HOLES/DECALS
XZ1
XZ2
BOWTIE
X3
X4
10mOHM
TOOL125NP
Net Label with N/XN (e.g. 2/C4) indicate Cross-Ref Sheet Number/Coordinates
Components in dotted box may be depopulated/changed in some versions. Use BOM to verify value.
AMERICAN POWER CONVERSION
SCHEMATIC
TITLE:
ALI_SHAN
MODEL#:
0S- 640-0259
REV 05
FILE NAME: 640-0259_REV05
SHEET 3 OF 4


+12V
D4
R122
47.5K
0.1W
1%
R41
20K
0.1W
1%
Q16
PNP
T2907A
T2907A
C47
47UF
16V
20%
INV+
HS1
HS2
851-0115
C48
47UF
16V
20%
Q18
PNP
T2907A
T2907A
R42
20K
1%
0.1W
R125
47.5K
0.1W
1%
Q36
NPN
2N2222
600MA_75V
R24
10.0K
1%
0.1W
OUT1
D39
1KV
1A
DO-214AC
D40
1KV
1A
DO-214AC
+5V
D41
D4148CC
75V
(N.P.)
+C24
22UF
50V
20%
(63V)
R160
100K
0.1W
1%
CLAMP_R
R161
10.0K
0.1W
1%
C49
.01UF
50V
10%
PGND
R23
10.0K
0.1W
1%
OUT2
Q35
NPN
2N2222
600MA_75V
Q31
2N2222
600MA_75V
Q30
2N2222
600MA_75V
Q32
2N2222
600MA_75V
R26
10.0K
1%
0.1W
Q28
NPN
2N2222
600MA_75V
R131
20_OHM
0.1W
1%
Q17
PNP
T2907A
T2907A
D31
D4148CC
75V
Q7
0.003_OHM
30V
260A
Q8
0.003_OHM
30V
260A
D32
D4148CC
75V
Q19
PNP
T2907A
T2907A
R133
20_OHM
1%
0.1W
R124
10.0K
0.1W
1%
R123
10.0K
0.1W
1%
J21
701-0013
DC1
J22
701-0013
DC2
HS4
R20
10.0K
0.1W
1%
R132
2K
0.1W
1%
R19
10.0K
0.1W
1%
R109
47.5R
1/4W
1%
R111
47.5R
1/4W
1%
HS3
Q9
0.003_OHM
30V
260A
Q10
0.003_OHM
30V
260A
R127
47.5K
0.1W
1%
R128
47.5K
0.1W
1%
R25
10.0K
0.1W
1%
R134
2K
0.1W
1%
Q39
NPN
2N2222
600MA_75V
Q40
NPN
2N2222
600MA_75V
R88
10.0K
0.1W
1%
OUT1
B8
1000_OHM@100MHZ
B9
1000_OHM@100MHZ
T1
430-0160
N.P.
D15A
50NS 200V 3A
ES2G400V 2A
D15
CHARGER_ON
12VBATT
C39
1UF
16V
10%
+C60
470UF
16V
20%
R90
4.75K
0.1W
1%
CLAMP
R91
4.75K
0.1W
1%
Q38
NPN
2N2222
600MA_75V
Q37
NPN
2N2222
600MA_75V
Q20
PNP
T2907A
T2907A
R104
1.0K
0.1W
1%
75V
D4148CC
D37
D16
NC
R83
2.0M
1/8W
1%
R135
4.75K
0.1W
1%
R136
4.75K
0.1W
1%
D34
R43
20K
0.1W
1%
R89
10.0K
0.1W
1%
C22
0.1UF
400VDC
10%
C26
2200PF
1KV
10%
R28
50K
2W
5%
C22A
1NF
1KV
10%
R29
5%
2W
33K
D8
1KV
2A_UF2010-E30
D19
1KV
1A
DO-214AC
D18
1KV
1A
DO-214AC
D20
1KV
1A
DO-214AC
D21
1KV
1A
DO-214AC
FILT_HOT
F1
1A_250V
XREF=1/A1,3/A2
L1
1.2MH_0.5A
420-0132A
FILT_NEUTRAL
XREF=1/A1,3/A1
900V
PWR_N-CH
3.73_OHM
Q6
R157
20.0R
1/4W
1%
C77
100PF
1KV
10%
UFST
1A
800V
D7
R27
0.1W10.0K 1%
R107
1.0K
0.1W
1%
R110
47.5R
1/4W
1%
R75
2.2R
2W
5%
R138
15K
0.1W
1%
R50
20_OHM
0.1W
1%
FUSABLE TRACE
5A_125VAC
F2
N.P.
INV+
F3
40A_32VDC 517-1040
F4
40A_32VDC 517-1040
J1
701-0013
J15
701-0013
R80
499R
0.1W
1%
R81
499R
0.1W
1%
R126
8.87K
.06W
.25%
R106
1.0K
0.1W
1%
R145
499K
0.1W
1%
C61
.1UF
16V
10%
C41
22PF
50V
10%
IC6
365-2942
R78
2K
.06W
.25%
R21
10.0K
0.1W
1%
Q33
NPN
2N2222
600MA_75V
Q34
NPN
2N2222
600MA_75V
R22
10.0K
0.1W
1%
R105
1.0K
0.1W
1%
CHARGER_EN
IC2
360-3843
R130
2K
0.1W
1%
C42
1UF
16V
10%
R79
4.75K
0.1W
1%
Q29
NPN
2N2222
600MA_75V
D30
D4148CC
75V
C44
.01UF
50V
10%
C40
1000PF
16V
10%
C43
.1UF
16V
10%
R139
3.01K
1/4W
1%
+C7
22UF
16V
10%
Q12
0.01_OHM
50V
PWR
Q11
0.01_OHM
50V
PWR
J14
701-0013
J13
701-0013
U2
U3
NOTE: ALL VALUES ARE FOR REFERENCE ONLY. SEE BOM FOR ACTUAL VALUES AND POPULATIONS.
REV
ECO
DESCRIPTION
DWN
CHK
APVL
DATE
REVISIONS
DRAWN
CHECKED
ENGINEER
ENG.MGR.
QUALITY:
PRODUCTION
AMERICAN POWER CONVERSION
SCHEMATIC
TITLE:
ALI_SHAN
MODEL#:
0S- 640-0259
REV
05
SCALE: NONE
FILE NAME 640-0259_REV05
SHEET 4 OF 4