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SIZE
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SC2038

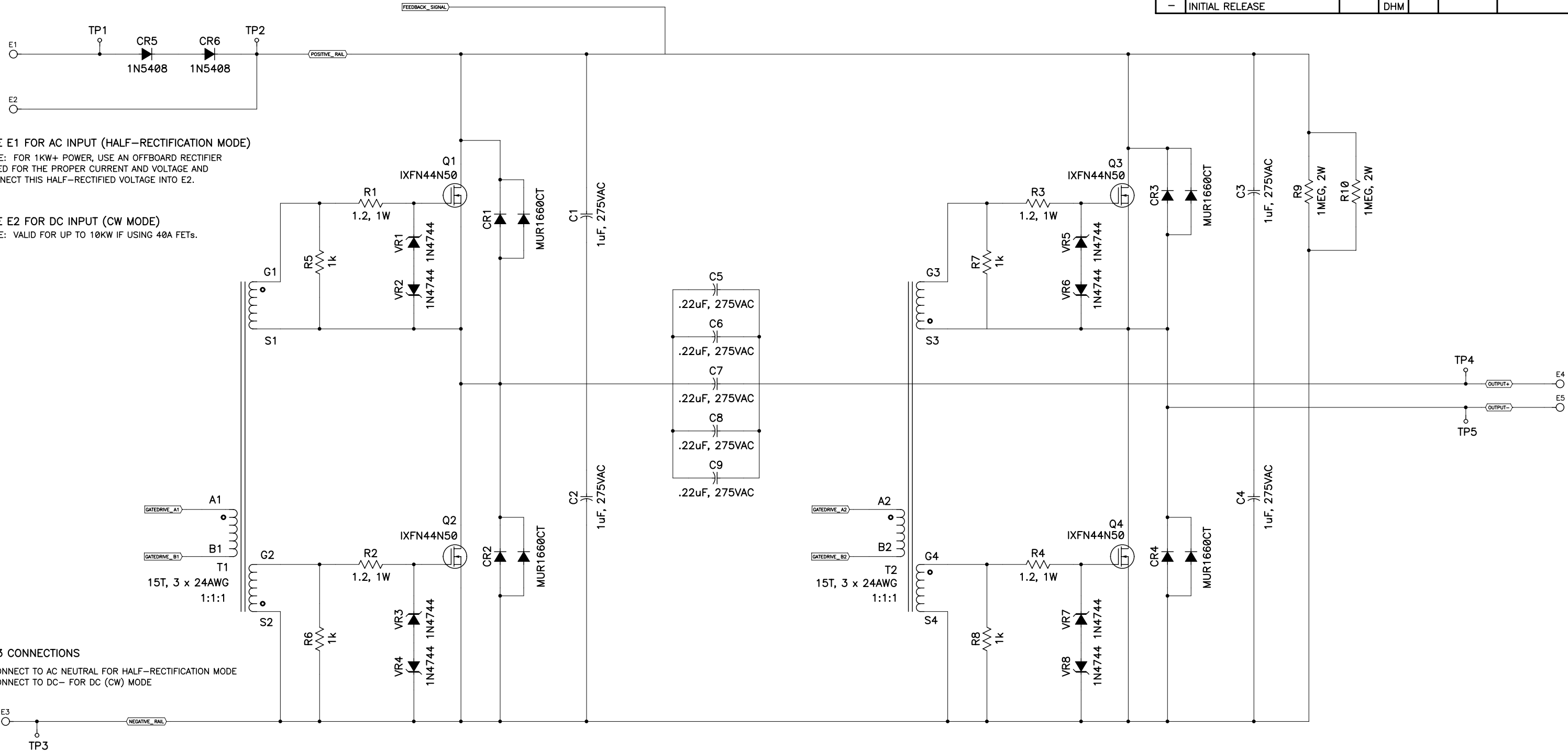
REV
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REVISIONS						
LTR	DESCRIPTION	ZONE	ENG	DWG	DATE	APPROVED
-	INITIAL RELEASE		DHM			



USE E1 FOR AC INPUT (HALF-RECTIFICATION MODE)

NOTE: FOR 1KW+ POWER, USE AN OFFBOARD RECTIFIER RATED FOR THE PROPER CURRENT AND VOLTAGE AND CONNECT THIS HALF-RECTIFIED VOLTAGE INTO E2.

USE E2 FOR DC INPUT (CW MODE)

NOTE: VALID FOR UP TO 10KW IF USING 40A FETs.

E3 CONNECTIONS

CONNECT TO AC NEUTRAL FOR HALF-RECTIFICATION MODE
CONNECT TO DC- FOR DC (CW) MODE

NOTES:

- T1, T2 TOROID CORES
FAIR-RITE P/N 5978006401
www.fair-rite.com
CWS BYTEMARK P/N F-114A-77
www.cwsbytemark.com
- NEVER CONNECT E4 OR E5 TO GROUND!

10KW FULL-BRIDGE SWITCHING POWER SUPPLY

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TITLE		PLASMASONIC II SOLID STATE TESLA COIL FULL BRIDGE POWER SECTION			
SIZE C	CAGE CODE IDENT NO.	DWG NO. SC2038		REV -	
SCALE NTS	ACT WT	CALC WT	SHEET 1 OF 3		
ACCEL CAD file: SC2038					

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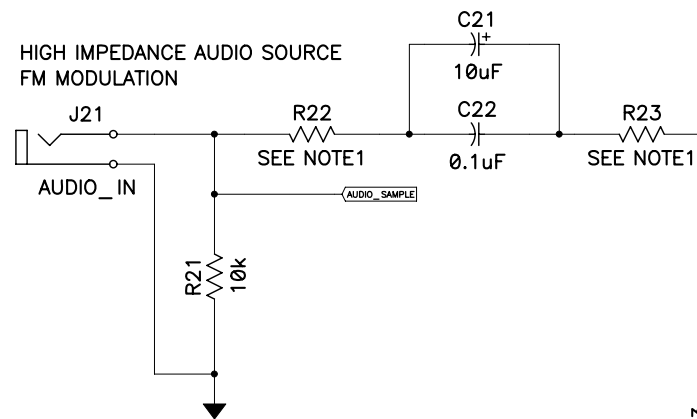
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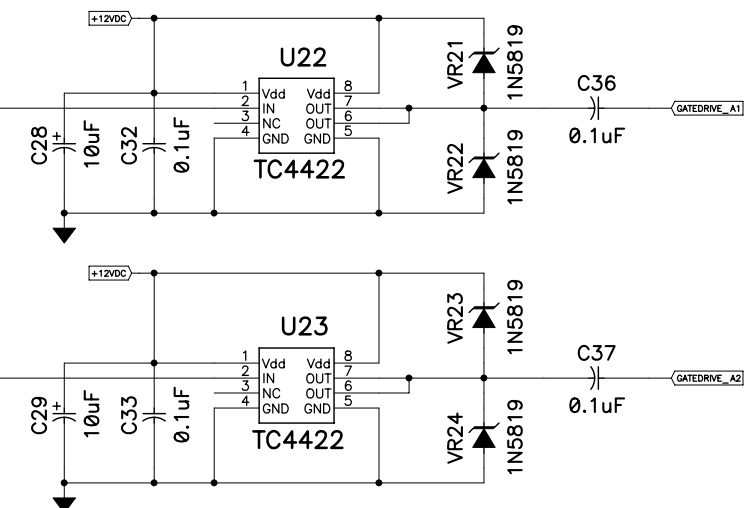
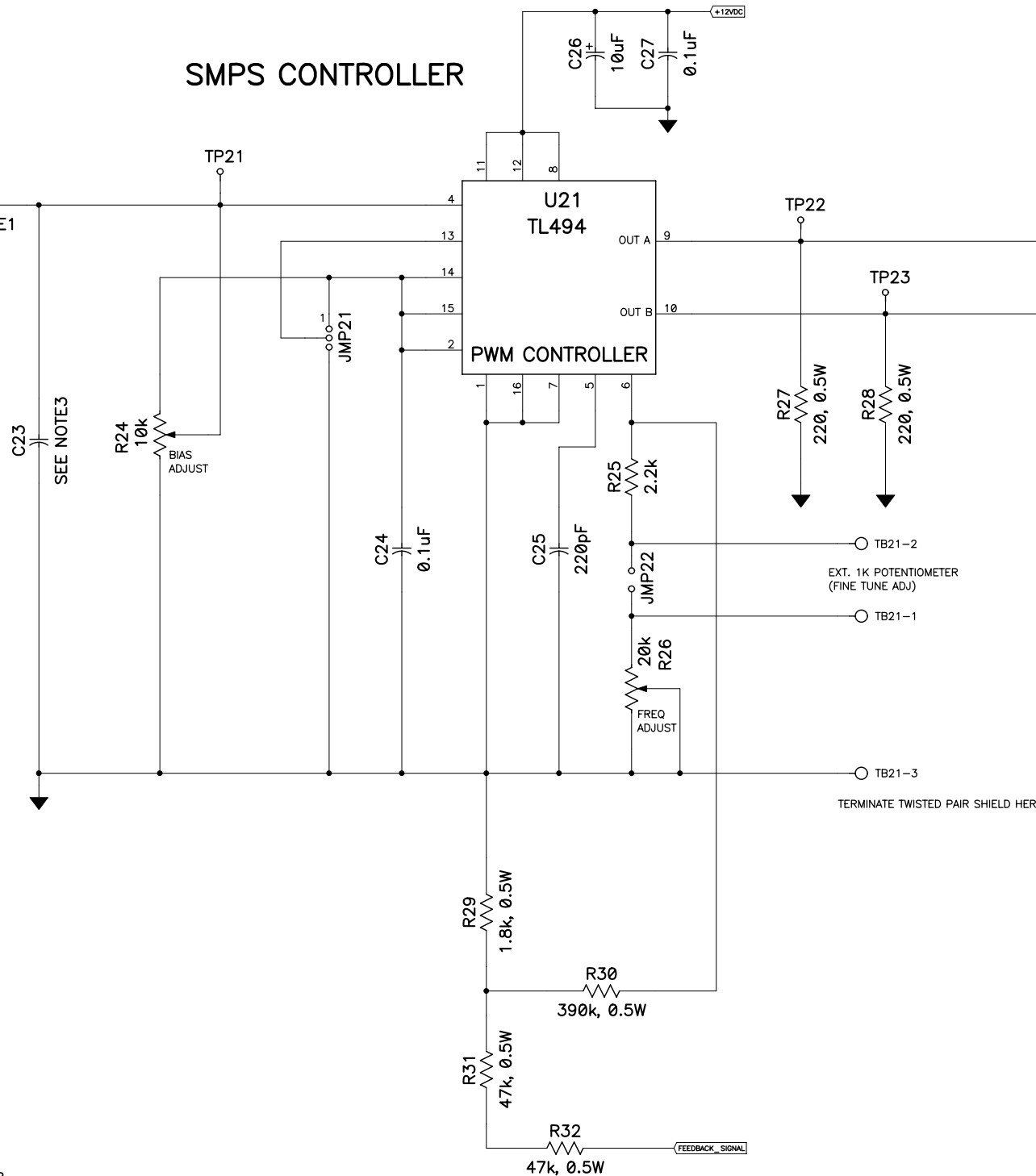
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-	INITIAL RELEASE		DHM			

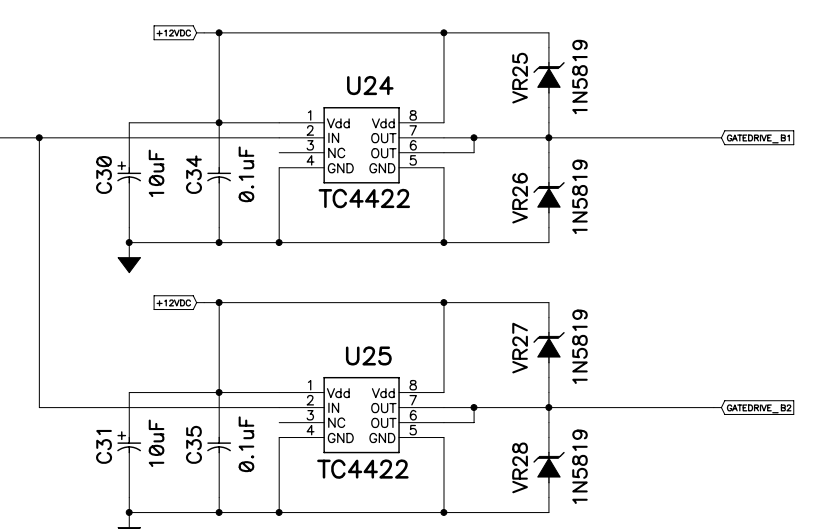
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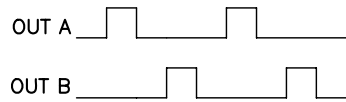
SMPS CONTROLLER



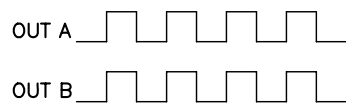
HIGH CURRENT GATE DRIVERS



GATE DRIVE TIMING DIAGRAMS (PUSH-PULL MODE)



(SINGLE-ENDED MODE)



NOTES:

- FOR NORMAL OPERATION, USE A ZERO OHM JUMPER FOR R21 AND R23 AND LEAVE C21 OPEN.
- J21 MUST USE A LINE-LEVEL (HIGH IMPEDANCE) AUDIO SOURCE SUCH AS THE RCA OUTPUTS OF A CD PLAYER, RECEIVER, ETC...
- C23 DETERMINES THE HIGH FREQUENCY ROLL-OFF POINT OF THE FREQUENCY RESPONSE OF THE AUDIO. NORMALLY, C23 SHOULD BE LEFT OPEN.
- JMP22 SHOULD BE SHORTED IF AN EXTERNAL FINE TUNE POTENTIOMETER IS NOT USED.
- FOR AUDIO MODULATION, PUSH-PULL MODE SHOULD BE USED. TO GET LONGEST OUTPUT ARCS, SINGLE-ENDED MODE SHOULD BE USED.
- TO ENABLE PUSH-PULL MODE, U22-U25 SHOULD BE ALL TC4422s AND PIN 13 OF U21 SHOULD BE TIED TO PIN14 THROUGH JMP21. JMP23 SHOULD BE LEFT OPEN.
- TO ENABLE SINGLE-ENDED MODE, U22-U23 SHOULD BE TC4422s AND U24-U25 SHOULD BE TC4421s. PIN 13 OF U21 SHOULD BE TIED TO GND THROUGH JMP21 AND JMP23 SHOULD BE SHORTED AND R28 SHOULD BE REMOVED.

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TITLE		PLASMASONIC II SOLID STATE TESLA COIL SMPS CONTROLLER			
SIZE C	CAGE CODE IDENT NO.	DWG NO. SC2038		REV -	
SCALE NTS	ACT WT	CALC WT	SHEET 2 OF 3		
		ACCEL CAD file: SC2038			

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SC2038

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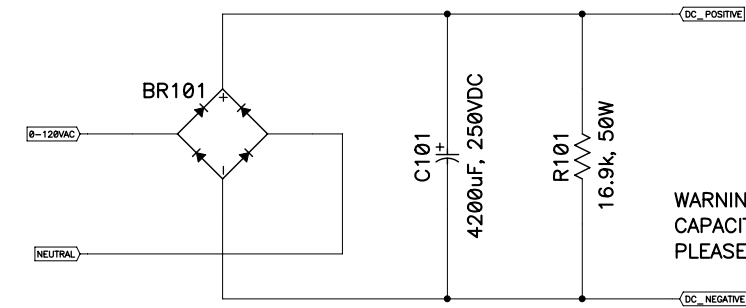
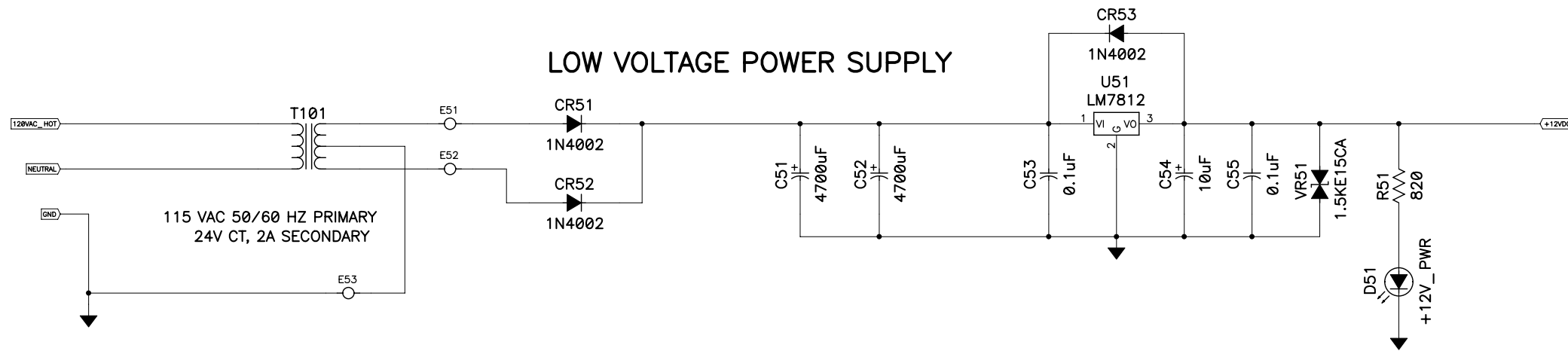
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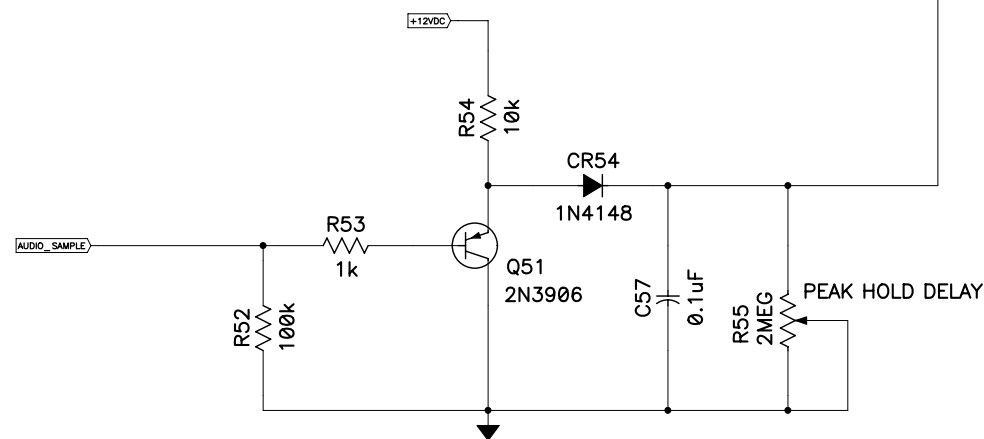
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-	INITIAL RELEASE		DHM			

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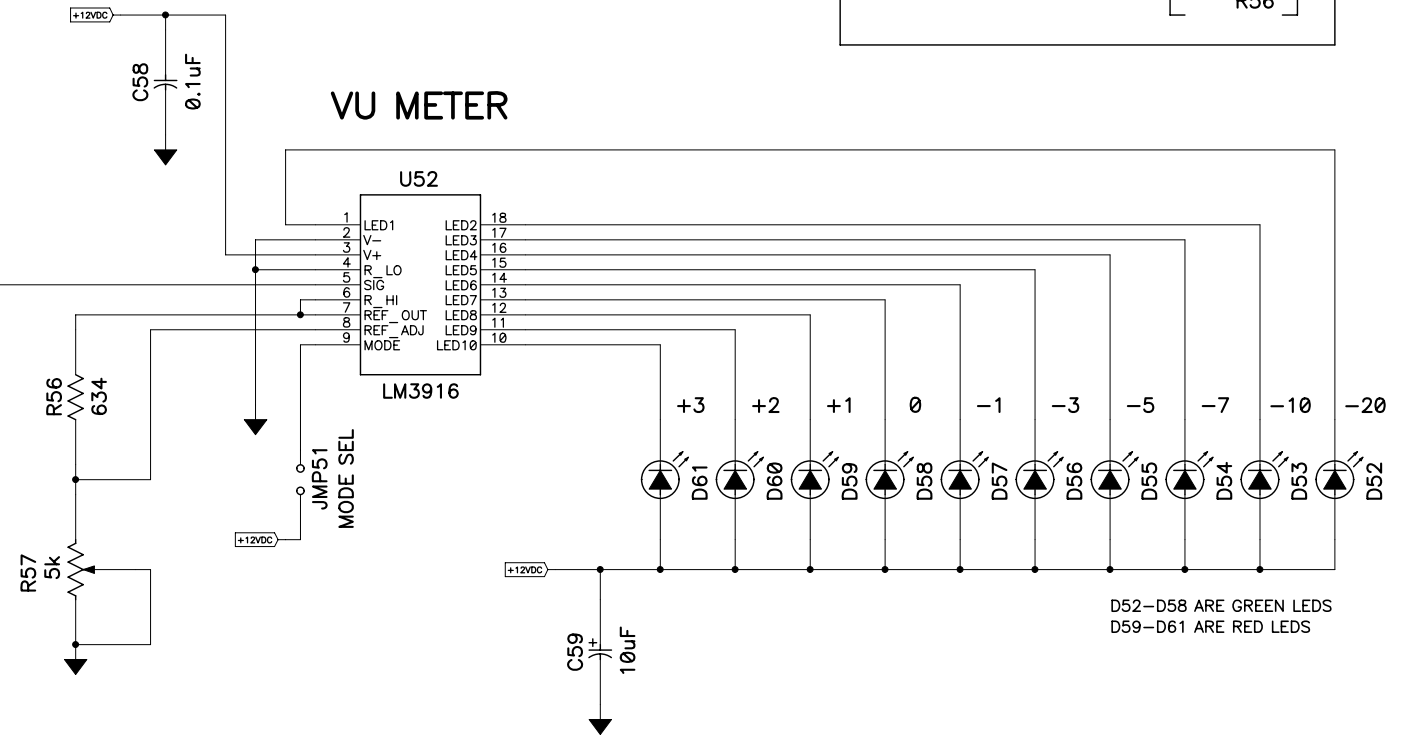


WARNING:
CAPACITOR MAY STORE A LETHAL CHARGE.
PLEASE DISCHARGE PRIOR TO HANDLING!

EXTERNAL DC POWER SUPPLY
(FOR H-BRIDGE)



PEAK AND HOLD CIRCUIT



VU METER

JMP51 MODE SELECT

OPEN - DOT MODE (RECOMMENDED)
SHORTED - BAR GRAPH MODE

VU METER EQUATIONS

$$\text{LED CURRENT} = \frac{12.5}{R56}$$

$$\text{FULL SCALE VOLTAGE} = 1.25 \left[1 + \frac{R57}{R56} \right]$$

D52-D58 ARE GREEN LEDS
D59-D61 ARE RED LEDS

- NOTES:
- R101 IS A SAFETY BLEEDER RESISTOR FOR C101.
 - ALL COMPONENTS WITH REFDES HIGHER THAN 100 ARE EXTERNALLY MOUNTED COMPONENTS.

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TITLE		PLASMASONIC II SOLID STATE TESLA COIL LVPS SUPPLY		
SIZE C	CAGE CODE IDENT NO.	DWG NO. SC2038	REV -	
SCALE NTS	ACT WT	CALC WT	SHEET 3 OF 3	
ACCEL CAD file: SC2038				