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SERVICE MANUAL

AP4K REV1

AP4K REV2

SMT Disclaimer

Due to the complex nature of the use of SMT installed components in Yorkville equipment, we highly caution all service technicians in attempting to repair or replace SMT factory installed components.

Many of these components may be glued prior to initial soldering.

Replacing SMT components requires expensive specialized de-soldering equipment and training.

Yorkville Sound will repair and replace defective SMT components to ensure proper quality assurance and installation is maintained.

Quality and Innovation Since 1963
Printed in Canada

IMPORTANT SAFETY INSTRUCTIONS



This lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Ce symbole d'éclair avec tête de flèche dans un triangle équilatéral est prévu pour alerter l'utilisateur de la présence d'un «voltage dangereux» non-isolé à proximité de l'enceinte du produit qui pourrait être d'ampleur suffisante pour présenter un risque de choc électrique.



The DO NOT STACK symbol is intended to alert the user that the product shall not be vertically stacked because of the nature of the product.

La symbole NE PAS EMPIILER est pour alerter l'utilisateur que le produit ne doit pas être empilé verticalement en raison de la nature du produit.



SEPARATE COLLECTION WEEE

CAUTION • AVIS

**RISK OF ELECTRIC SHOCK
DO NOT OPEN
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR**



DO NOT PUSH OR PULL



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Le point d'exclamation à l'intérieur d'un triangle équilatéral est prévu pour alerter l'utilisateur de la présence d'instructions importantes dans la littérature accompagnant l'appareil en ce qui concerne l'opération et la maintenance de cet appareil.



CAUTION: HOT SURFACE
ATTENTION: SURFACE CHAUDE



NOT TO BE SERVICED BY USERS

FOLLOW ALL INSTRUCTIONS

Instructions pertaining to a risk of fire, electric shock, or injury to a person

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. THIS DEVICE IS FOR INDOOR USE ONLY!

INSTALLED BATTERY PACKS SHALL NOT BE EXPOSED TO EXCESSIVE HEAT SUCH AS SUNSHINE, FIRE OR THE LIKE.

SUIVEZ TOUTES LES INSTRUCTIONS

Instructions relatives au risque de feu, choc électrique, ou blessures aux personnes

AVIS: AFIN DE REDUIRE LES RISQUE DE CHOC ELECTRIQUE, N'ENLEVEZ PAS LE COUVERT (OU LE PANNEAU ARRIERE) NE CONTIENT AUCUNE PIECE REPARABLE PAR L'UTILISATEUR. CONSULTEZ UN TECHNICIEN QUALIFIE POUR L'ENTRETIEN CE PRODUIT EST POUR L'USAGE A L'INTERIEUR SEULEMENT. LES PACKS BATTERIES INSTALLEES NE DOIVENT PAS ETRE EXPOSES A UNE CHALEUR EXCESSIVE TELLE QUE LE ENSOLEILLEMENT, LE FEU OU SIMILAIRES.

Read Instructions: The Owner's Manual should be read and understood before operation of your unit. Please, save these instructions for future reference and heed all warnings.

Clean only with dry cloth.

Packaging: Keep the box and packaging materials, in case the unit needs to be returned for service.

Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. *Do not use this apparatus near water!*

Warning: When using electric products, basic precautions should always be followed, including the following:

Power Sources

Your unit should be connected to a power source only of the voltage specified in the owners manual or as marked on the unit. This unit has a polarized plug. Do not use with an extension cord or receptacle unless the plug can be fully inserted. Precautions should be taken so that the grounding scheme on the unit is not defeated. An apparatus with CLASS I construction shall be connected to a Mains socket outlet with a protective earthing connection. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

Hazards

Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious personal injury and serious damage to the product. Use only with cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Follow the manufacturer's instructions when installing the product and use mounting accessories recommended by the manufacturer. Only use attachments/accessories specified by the manufacturer. Note: Prolonged use of headphones at a high volume may cause health damage on your ears.

The apparatus should not be exposed to dripping or splashing water; no objects filled with liquids should be placed on the apparatus.

Terminals marked with the "lightning bolt" are hazardous live; the external wiring connected to these terminals require installation by an instructed person or the use of ready made leads or cords.

Ensure that proper ventilation is provided around the appliance. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

Power Cord

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. The AC supply cord should be routed so that it is unlikely that it will be damaged. Protect the power cord from being walked on or pinched particularly at plugs. If the AC supply cord is damaged DO NOT OPERATE THE UNIT. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle. The mains plug of the power supply cord shall remain readily operable.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Service

The unit should be serviced only by qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Disconnect power before servicing!

Veillez Lire le Manuel: Il contient des informations qui devraient être comprises avant l'opération de votre appareil.

Conservez. Gardez S.V.P. ces instructions pour consultations ultérieures et observez tous les avertissements.

Nettoyez seulement avec le tissu sec.

Emballage: Conservez la boîte au cas où l'appareil devait être retourner pour réparation.

Avertissement: Pour réduire le risque de feu ou la décharge électrique, n'exposez pas cet appareil à la pluie ou à l'humidité. *N'utilisez pas cet appareil près de l'eau!*

Attention: Lors de l'utilisation de produits électrique, assurez-vous d'adhérer à des précautions de bases incluant celle qui suivent:

Alimentation - L'appareil ne doit être branché qu'à une source d'alimentation correspondant au voltage spécifié dans le manuel ou tel qu'indiqué sur l'appareil. Cet appareil est équipé d'une prise d'alimentation polarisée. Ne pas utiliser cet appareil avec un cordon de raccordement à moins qu'il soit possible d'insérer complètement les trois lames. Des précautions doivent être prises afin d'éviter que le système de mise à la terre de l'appareil ne soit désengagé. Un appareil construit selon les normes de CLASS I devrait être raccordé à une prise murale d'alimentation avec connexion intacte de mise à la masse. Lorsqu'une prise de branchement ou un coupleur d'appareils est utilisée comme dispositif de débranchement, ce dispositif de débranchement devra demeurer pleinement fonctionnel avec raccordement à la masse.

Risque - Ne pas placer cet appareil sur un chariot, un support, un trépied ou une table instables. L'appareil pourrait tomber et blesser quelqu'un ou subir des dommages importants. Utiliser seulement un chariot, un support, un trépied ou une table recommandés par le fabricant ou vendus avec le produit. Suivre les instructions du fabricant pour installer l'appareil et utiliser les accessoires recommandés par le fabricant. Utilisez seulement les attachments/accessoires indiqués par le fabricant. Note: L'utilisation prolongée des écouteurs à un volume élevé peut avoir des conséquences néfastes sur la santé sur vos oreilles.

Il convient de ne pas placer sur l'appareil de sources de flammes nues, telles que des bougies allumées.

L'appareil ne doit pas être exposé à des égouttements d'eau ou des éclaboussures et qu'aucun objet rempli de liquide tel que des vases ne doit être placé sur l'appareil.

Assurez que l'appareil est fourni de la propre ventilation. Ne procédez pas à l'installation près de source de chaleur tels que radiateurs, registre de chaleur, fours ou autres appareils (incluant les amplificateurs) qui produisent de la chaleur.

Les dispositifs marqués d'une symbole "d'éclair" sont des parties dangereuses au toucher et que les câblages extérieurs connectés à ces dispositifs de connection extérieure doivent être effectués par un opérateur formé ou en utilisant des cordons déjà préparés.

Cordon d'Alimentation - Ne pas enlever le dispositif de sécurité sur la prise polarisée ou la prise avec tige de mise à la masse du cordon d'alimentation. Une prise polarisée dispose de deux lames dont une plus large que l'autre. Une prise avec tige de mise à la masse dispose de deux lames en plus d'une troisième tige qui connecte à la masse. La lame plus large ou la tige de mise à la masse est prévu pour votre sécurité. La prise murale est désuète si elle n'est pas conçue pour accepter ce type de prise avec dispositif de sécurité. Dans ce cas, contactez un électricien pour faire remplacer la prise murale. Évitez d'endommager le cordon d'alimentation. Protégez le cordon d'alimentation. Assurez-vous qu'on ne marche pas dessus et qu'on ne le pince pas en particulier aux prises. N'UTILISEZ PAS L'APPAREIL si le cordon d'alimentation est endommagé. Pour débrancher complètement cet appareil de l'alimentation CA principale, déconnectez le cordon d'alimentation de la prise d'alimentation murale. Le cordon d'alimentation du bloc d'alimentation de l'appareil doit demeurer pleinement fonctionnel.

Débranchez cet appareil durant les orages ou si inutilisé pendant de longues périodes.

Service - Consultez un technicien qualifié pour l'entretien de votre appareil. L'entretien est nécessaire quand l'appareil a été endommagé de quelque façon que se soit. Par exemple si le cordon d'alimentation ou la prise du cordon sont endommagés, si il y a eu du liquide qui a été renversé à l'intérieur ou des objets sont tombés dans l'appareil, si l'appareil a été exposé à la pluie ou à l'humidité, si il ne fonctionne pas normalement, ou a été échappé. Débrancher l'appareil avant d'enlever les couvercles!

IMPORTANT SAFETY INSTRUCTIONS



The Lightning Flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product



Le symbole représentant un éclair avec une flèche à l'intérieur d'un triangle équilatéral est utilisé pour prévenir l'utilisateur de la présence d'une tension électrique dangereuse non isolée à l'intérieur de l'appareil. Cette tension est d'un niveau suffisamment élevé pour représenter un risque d'électrocution



Le symbole représentant un point d'exclamation à l'intérieur d'un triangle équilatéral, signale à l'utilisateur la présence d'instructions importantes relatives au fonctionnement et à l'entretien de l'appareil dans cette notice d'installation

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prongs are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING:

- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.
- To completely disconnect this apparatus from the ac mains, disconnect the power supply cord plug from the ac receptacle.
- The mains plug of the power supply cord or appliance coupler shall remain readily accessible.

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Respecter tous les avertissements.
4. Suivez toutes les instructions.
5. N'utilisez pas l'appareil près de l'eau.
6. Nettoyer uniquement avec chiffon sec.
7. Ne bloquez pas les ouvertures de ventilation. Installer en suivant les instructions du fabricant.
8. Ne pas installer près des sources de chaleur telles que radiateurs, bouches de chaleur, four ou autres appareils (y compris les amplificateurs) produisant de la chaleur.
9. N'annulez pas l'objectif sécuritaire de la fiche polarisée ou de la tige de mise à la terre. Une fiche polarisée possède deux lames avec une plus large que l'autre. Une prise avec mise à la terre possède deux lames et une troisième tige. La lame large ou la troisième tige sont fournis pour votre sécurité. Si la fiche n'entre pas dans votre prise, consultez un électricien pour remplacer la prise obsolète.
10. Protéger le cordon d'alimentation des piétinements ou pincements en particulier près des fiches, des prises de courant et au point de sortie de l'appareil.
11. Utilisez uniquement les accessoires spécifiés par le fabricant.
12. Utiliser uniquement avec un charriot, stand, trépied ou une table spécifiée par le fabricant, ou vendus avec l'appareil.
13. Débranchez l'appareil durant un orage ou lorsqu'il reste inutilisé pendant de longues périodes de temps.
14. Confiez toute réparation à un technicien qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque façon que ce soit; comme lorsque le cordon d'alimentation ou la fiche est endommagé, lorsque du liquide a été renversé ou des objets sont tombés à l'intérieur, lorsque l'appareil a été exposé à la pluie ou l'humidité, ne fonctionne pas normalement, ou est tombé.

AVERTISSEMENT:

- Pour réduire les risques d'incendie ou de choc électrique, ne pas exposer cet appareil à la pluie ou à l'humidité et ne placez pas d'objets contenant des liquides, tels que des vases, sur l'appareil.
- Pour isoler totalement cet appareil de l'alimentation secteur, débranchez totalement son cordon d'alimentation du réceptacle CA.
- La prise du cordon d'alimentation ou du prolongateur, si vous en utilisez un comme dispositif de débranchement, doit rester facilement accessible

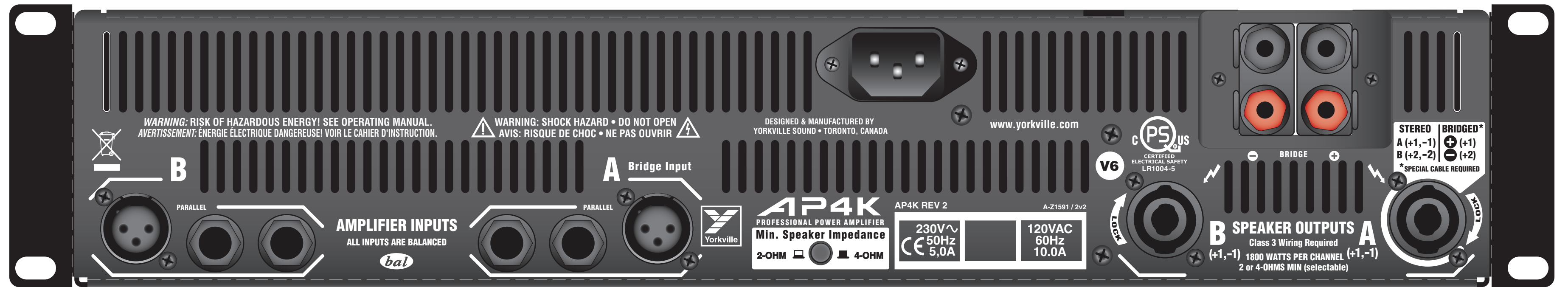
CAUTION

TO PREVENT ELECTRIC SHOCK HAZARD,
DO NOT CONNECT TO MAINS POWER SUPPLY
WHILE GRILLE IS REMOVED.

AVIS

POUR PRÉVENIR LES RISQUES D'ÉLECTROCUTION,
NE PAS RACCORDER A L'ALIMENTATION ÉLECTRIQUE ALORS
QUE LA GRILLE EST RETIRÉE.





M1500 06 P1 Parts Reference List 10/29/2020

REF	YS #	Description	REF	YS #	Description	REF	YS #	Description	REF	YS #	Description	REF	YS #	Description
C1	6451	4N7 250V 20%CAP BLK Y 10MM AC	C71	5197	220P 100V 2%CAP T&R RAD CER 2NPO	D42B	6934	MR854 400V 3A0 DIODE FASREC	R3	6931	IRFP140N TO247 NCH MFET TM	R13	2039	W250 22R0 FUSIBLE T&R RES
C1A	5412	220P 100V 10%CAP T&R BEAD NPO	C72	5197	220P 100V 2%CAP T&R RAD CER 2NPO	D43A	6934	MR854 400V 3A0 DIODE FASREC	Q4	6931	IRFP140N TO247 NCH MFET TM	R14	2044	W250 100R0 FUSIBLE T&R RES
C1B	5412	220P 100V 10%CAP T&R BEAD NPO	D1	6436	1N753ARL 6V2 0W5 ZENER 5% T&R	D43B	6934	MR854 400V 3A0 DIODE FASREC	Q5	6932	IRFP9140N TO247 PCH MFET TM	R15	2044	W250 100R0 FUSIBLE T&R RES
C2	5986	4700U 80V 20%CAP BLK 25X50MM ELS	D2	6825	1N4148 75V 0A45 DIODE T&R	D44A	6934	MR854 400V 3A0 DIODE FASREC	Q6	6932	IRFP9140N TO247 PCH MFET TM	R16	2039	W250 22R0 FUSIBLE T&R RES
C2A	5412	220P 100V 10%CAP T&R BEAD NPO	D3	6825	1N4148 75V 0A45 DIODE T&R	D44B	6934	MR854 400V 3A0 DIODE FASREC	Q7	6932	IRFP9140N TO247 PCH MFET TM	R17	4775	W250 14K0 1% T&R RES
C2B	5412	220P 100V 10%CAP T&R BEAD NPO	D4	6825	1N4148 75V 0A45 DIODE T&R	D45A	6825	1N4148 75V 0A45 DIODE T&R	Q7A	5106	MPSA63 TO92 PNP DARL BLK TA	R18	2027	W250 390R 5%FLAME PROOF T&R RES
C3	5266	680N 250V 20%CAP BLK X2 27MM AC	D5	6825	1N4148 75V 0A45 DIODE T&R	D45B	6825	1N4148 75V 0A45 DIODE T&R	Q7B	5106	MPSA63 TO92 PNP DARL BLK TA	R19	2010	W167 10R0 2%FLAME PROOF T&R RES
C4	5961	33U 16V 20%CAP T&R RAD 2IN NP	D6	6825	1N4148 75V 0A45 DIODE T&R	D46A	6825	1N4148 75V 0A45 DIODE T&R	R8	6932	IRFP9140N TO247 PCH MFET TM	R20	2010	W167 10R0 2%FLAME PROOF T&R RES
C5	5961	33U 16V 20%CAP T&R RAD 2IN NP	D7	6825	1N4148 75V 0A45 DIODE T&R	D46B	6825	1N4148 75V 0A45 DIODE T&R	Q9	6931	IRFP140N TO247 NCH MFET TM	R21	2010	W167 10R0 2%FLAME PROOF T&R RES
C6	5412	220P 100V 10%CAP T&R BEAD NPO	D8	6825	1N4148 75V 0A45 DIODE T&R	D47A	6825	1N4148 75V 0A45 DIODE T&R	Q10	6931	IRFP140N TO247 NCH MFET TM	R22	2010	W167 10R0 2%FLAME PROOF T&R RES
C7	5417	330P 50V 10%CAP T&R BEAD NPO	D8A	6450	1N5242B 12V0 0W5 ZENER 5% T&R	D47B	6825	1N4148 75V 0A45 DIODE T&R	Q10A	5103	MPSA06 TO92 NPN TRAN T&R TA	R23	2032	W250 1K 2%FLAME PROOF T&R RES
C8	5206	1N 400V 5%CAP T&R RAD 2FLM	D8B	6450	1N5242B 12V0 0W5 ZENER 5% T&R	D49A	6450	1N5242B 12V0 0W5 ZENER 5% T&R	Q10B	5103	MPSA06 TO92 NPN TRAN T&R TA	R24	2030	W167 681R 1%FLAME PROOF T&R RES
C9	5208	2N2 400V 5%CAP T&R RAD 2FLM	D9	6486	1N5244B 14V0 0W5 ZENER 5% T&R	D49B	6450	1N5242B 12V0 0W5 ZENER 5% T&R	Q11	6931	IRFP140N TO247 NCH MFET TM	R25	4979	W250 15K 5%MINI T&R RES
C10	5208	2N2 400V 5%CAP T&R RAD 2FLM	D9A	6486	1N5244B 14V0 0W5 ZENER 5% T&R	D50A	6425	BAV21 200V 0A25 DIODE T&R	Q11A	5104	MPSA56 TO92 PNP TRAN T&R TA	R26	4979	W250 15K 5%MINI T&R RES
C10A	5212	100N 100V 5%CAP T&R RAD 2FLM	D9B	6486	1N5244B 14V0 0W5 ZENER 5% T&R	D50A1	6425	BAV21 200V 0A25 DIODE T&R	Q11B	5104	MPSA56 TO92 PNP TRAN T&R TA	R27	6120	W250 100K 5%MINI T&R RES
C10A1	5210	22N 100V 10%CAP T&R RAD 2FLM	D10	6438	1N4007 1000V 1A0 DIODE T&R	D50A2	6425	BAV21 200V 0A25 DIODE T&R	Q12	6931	IRFP140N TO247 NCH MFET TM	R28	6120	W250 100K 5%MINI T&R RES
C10A2	5210	22N 100V 10%CAP T&R RAD 2FLM	D11	6438	1N4007 1000V 1A0 DIODE T&R	D50B	6425	BAV21 200V 0A25 DIODE T&R	Q12A	6988	MJL21194 TO3P NPN TRAN TK	R29	6116	W250 10K0 1%MINI MF T&R RES
C10B	5212	100N 100V 5%CAP T&R RAD 2FLM	D12	6825	1N4148 75V 0A45 DIODE T&R	D50B1	6425	BAV21 200V 0A25 DIODE T&R	Q12B	6988	MJL21194 TO3P NPN TRAN TK	R30	4877	W250 49K90 0.1% T&R RES
C11	5816	680P 100V 5%CAP T&R RAD CER 2NPO	D13	6825	1N4148 75V 0A45 DIODE T&R	D51A	6425	BAV21 200V 0A25 DIODE T&R	Q13	6932	IRFP9140N TO247 PCH MFET TM	R31	6104	W250 2K2 5%MINI T&R RES
C12	5630	330U 25V 20%CAP BLK 10X13MM EL	D14	6825	1N4148 75V 0A45 DIODE T&R	D51B	6425	BAV21 200V 0A25 DIODE T&R	Q13A	6991	MJL21193 TO3P PNP TRAN TK	R31A	4829	W250 10K 5% T&R RES
C13	5630	330U 25V 20%CAP BLK 10X13MM EL	D14A	6425	BAV21 200V 0A25 DIODE T&R	D51B1	6425	BAV21 200V 0A25 DIODE T&R	Q13B	6991	MJL21193 TO3P PNP TRAN TK	R31B	4829	W250 10K 5% T&R RES
C14	5433	5N6 50V 10%CAP T&R BEAD X7R	D14B	6425	BAV21 200V 0A25 DIODE T&R	D52A	6425	BAV21 200V 0A25 DIODE T&R	Q14	6932	IRFP9140N TO247 PCH MFET TM	R32	4764	W250 2K74 0.1% T&R RES
C15	5433	5N6 50V 10%CAP T&R BEAD X7R	D15	6825	1N4148 75V 0A45 DIODE T&R	D52B	6425	BAV21 200V 0A25 DIODE T&R	Q15	6932	IRFP9140N TO247 PCH MFET TM	R32A	6118	W250 22K 5%MINI T&R RES
C16	5961	33U 16V 20%CAP T&R RAD 2IN NP	D15A	6425	BAV21 200V 0A25 DIODE T&R	D52B1	6425	BAV21 200V 0A25 DIODE T&R	Q16	6932	IRFP9140N TO247 PCH MFET TM	R32B	6118	W250 22K 5%MINI T&R RES
C16A	5210	22N 100V 10%CAP T&R RAD 2FLM	D15B	6425	BAV21 200V 0A25 DIODE T&R	D53A	6425	BAV21 200V 0A25 DIODE T&R	Q16A	6808	MJE15032 TO220 NPN TRAN TE	R33	5015	W250 475R 0.1% T&R RES
C16B	5210	22N 100V 10%CAP T&R RAD 2FLM	D16	6825	1N4148 75V 0A45 DIODE T&R	D53B	6425	BAV21 200V 0A25 DIODE T&R	Q16B	6808	MJE15032 TO220 NPN TRAN TE	R33A	6124	W250 3K 5%MINI T&R RES
C17	5961	33U 16V 20%CAP T&R RAD 2IN NP	D17	6825	1N4148 75V 0A45 DIODE T&R	D54A	6425	BAV21 200V 0A25 DIODE T&R	Q17	5104	MPSA56 TO92 PNP TRAN T&R TA	R33B	6124	W250 3K 5%MINI T&R RES
C17A	5210	22N 100V 10%CAP T&R RAD 2FLM	D18	6825	1N4148 75V 0A45 DIODE T&R	D54B	6425	BAV21 200V 0A25 DIODE T&R	Q17A	6809	MJE15033 TO220 PNP TRAN TE	R34	5016	1W00 9K760 0.5% T&R RES
C17B	5210	22N 100V 10%CAP T&R RAD 2FLM	D18A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D55A	6425	BAV21 200V 0A25 DIODE T&R	Q17B	6809	MJE15033 TO220 PNP TRAN TE	R34A	6124	W250 3K 5%MINI T&R RES
C18	5206	1N 400V 5%CAP T&R RAD 2FLM	D18B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D55A1	6425	BAV21 200V 0A25 DIODE T&R	Q18	5103	MPSA06 TO92 NPN TRAN T&R TA	R34B	6124	W250 3K 5%MINI T&R RES
C19	5412	220P 100V 10%CAP T&R BEAD NPO	D19	6825	1N4148 75V 0A45 DIODE T&R	D55A2	6425	BAV21 200V 0A25 DIODE T&R	Q19	5104	MPSA56 TO92 PNP TRAN T&R TA	R35	2026	W250 332R0 1%FLAME PROOF T&R RES
C20	5417	330P 50V 10%CAP T&R BEAD NPO	D19A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D55B	6425	BAV21 200V 0A25 DIODE T&R	Q20	5103	MPSA06 TO92 NPN TRAN T&R TA	R36	2044	W250 100R0 FUSIBLE T&R RES
C21	5433	5N6 50V 10%CAP T&R BEAD X7R	D19B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D55B1	6425	BAV21 200V 0A25 DIODE T&R	Q21	5105	MPSA13 TO92 NPN DARL T&R TA	R37	2039	W250 22R0 FUSIBLE T&R RES
C22	5433	5N6 50V 10%CAP T&R BEAD X7R	D20	6438	1N4007 1000V 1A0 DIODE T&R	D56	6825	1N4148 75V 0A45 DIODE T&R	Q22	5105	MPSA13 TO92 NPN DARL T&R TA	R38	2044	W250 100R0 FUSIBLE T&R RES
C23	5208	2N2 400V 5%CAP T&R RAD 2FLM	E20A	6934	MR854 400V 3A0 DIODE FASREC	D57	6825	1N4148 75V 0A45 DIODE T&R	Q23	6988	MJL21194 TO3P NPN TRAN TK	R39	2044	W250 100R0 FUSIBLE T&R RES
C24	5208	2N2 400V 5%CAP T&R RAD 2FLM	E20B	6934	MR854 400V 3A0 DIODE FASREC	D58	6825	1N4148 75V 0A45 DIODE T&R	Q24	6991	MJL21193 TO3P PNP TRAN TK	R40	2039	W250 22R0 FUSIBLE T&R RES
C24A	5840	22N 400V 10%CAP BLK RAD POLY FLM	E21	6438	1N4007 1000V 1A0 DIODE T&R	D59	6772	BRIDGE 25A 400V WIRE LEAD SIP	Q25	6932	IRFP9140N TO247 PCH MFET TM	R41	2027	W250 390R 5%FLAME PROOF T&R RES
C24B	5840	22N 400V 10%CAP BLK RAD POLY FLM	E21A	6934	MR854 400V 3A0 DIODE FASREC	D60	6772	BRIDGE 25A 400V WIRE LEAD SIP	Q26	6932	IRFP9140N TO247 PCH MFET TM	R42	4775	W250 14K0 1% T&R RES
C25	5630	330U 25V 20%CAP BLK 10X13MM EL	E21B	6934	MR854 400V 3A0 DIODE FASREC	D61	6772	BRIDGE 25A 400V WIRE LEAD SIP	Q26A	6988	MJL21194 TO3P NPN TRAN TK	R43	4979	W250 15K 5%MINI T&R RES
C26	5630	330U 25V 20%CAP BLK 10X13MM EL	E21B1	6934	MR854 400V 3A0 DIODE FASREC	D62A	6825	1N4148 75V 0A45 DIODE T&R	Q26B	6988	MJL21194 TO3P NPN TRAN TK	R43A	2033	W167 1K 2%FLAME PROOF T&R RES
C27	5816	680P 100V 5%CAP T&R RAD CER 2NPO	E22	6934	MR854 400V 3A0 DIODE FASREC	D62B	6825	1N4148 75V 0A45 DIODE T&R	Q26B1	6988	MJL21194 TO3P NPN TRAN TK	R43B	2033	W167 1K 2%FLAME PROOF T&R RES
C28	5945	10U 63V 20%CAP T&R RAD 2EL	E22A	6934	MR854 400V 3A0 DIODE FASREC	D63A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q27	6931	IRFP140N TO247 NCH MFET TM	R44	2010	W167 10R0 2%FLAME PROOF T&R RES
C29	5945	10U 63V 20%CAP T&R RAD 2EL	E22B	6934	MR854 400V 3A0 DIODE FASREC	D63B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q27A	6991	MJL21193 TO3P PNP TRAN TK	R44A	2033	W167 1K 2%FLAME PROOF T&R RES
C30	5945	10U 63V 20%CAP T&R RAD 2EL	E22B1	6934	MR854 400V 3A0 DIODE FASREC	D63B1	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q27B	6991	MJL21193 TO3P PNP TRAN TK	R44B	2033	W167 1K 2%FLAME PROOF T&R RES
C31	5231	220N 63V 5%CAP T&R RAD 2FLM	E23	6934	MR854 400V 3A0 DIODE FASREC	D64A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q27B1	6991	MJL21193 TO3P PNP TRAN TK	R45	2010	W167 10R0 2%FLAME PROOF T&R RES
C32	5988	8200U 50V 20%CAP 25X50MM ELS	E23A	6934	MR854 400V 3A0 DIODE FASREC	D64B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q28	6931	IRFP140N TO247 NCH MFET TM	R45A	4902	W250 24K 5% T&R RES
C33	5988	8200U 50V 20%CAP 25X50MM ELS	E23B	6934	MR854 400V 3A0 DIODE FASREC	D64B1	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q29	6932	IRFP9140N TO247 PCH MFET TM	R45B	4902	W250 24K 5% T&R RES
C34	5986	4700U 80V 20%CAP BLK 25X50MM ELS	E23B1	6934	MR854 400V 3A0 DIODE FASREC	D66A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q30	6932	IRFP9140N TO247 PCH MFET TM	R46	2010	W167 10R0 2%FLAME PROOF T&R RES
C35	5986	4700U 80V 20%CAP BLK 25X50MM ELS	E24	6825	1N4148 75V 0A45 DIODE T&R	D66B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q30A	5103	MPSA06 TO92 NPN TRAN T&R TA	R46A	4902	W250 24K 5% T&R RES
C36	5989	3300U 100V 20%CAP BLK 25X50MM ELS	E24A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D66B1	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q30B	5103	MPSA06 TO92 NPN TRAN T&R TA	R46B	4902	W250 24K 5% T&R RES
C37	5989	3300U 100V 20%CAP BLK 25X50MM ELS	E24B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D67A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q31	6931	IRFP140N TO247 NCH MFET TM	R47	2010	W167 10R0 2%FLAME PROOF T&R RES
C38	5986	4700U 80V 20%CAP BLK 25X50MM ELS	E25	6825	1N4148 75V 0A45 DIODE T&R	D67B	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q31A	5101	BC550C TO92 NPN TRAN T&R TB	R48	2032	W250 1K 2%FLAME PROOF T&R RES
C39	5989	3300U 100V 20%CAP BLK 25X50MM ELS	E25A	6824	1N5246B 16V0 0W5 ZENER 5% T&R	D67B1	6824	1N5246B 16V0 0W5 ZENER 5% T&R	Q31B	5101	BC550C TO92 NPN TRAN T&R TB	R49	2030	W167 681R 1%FLAME PROOF T&R RES
C40	5879	100U 16V 20%CAP T&R 8X7MM 2EL	E25B	6824	1N5									

M1531 Parts Reference List 8/15/2018

REF	YS #	Description	REF	YS #	Description	REF	YS #	Description	
AL-ASS	M1531-59	AP4K 2X1800 WATT POWER AMP BOARD	J3A	6956	SPKON 4C PCB MT HORZ	GRY #4	TERM5	2312	6-32X.165IN SCRW TERM VERT PC MNT
C1A	6451	.4N7 250V 20%CAP BLK Y 10MM AC	J3B	6956	SPKON 4C PCB MT HORZ	GRY #4	TERM6	2312	6-32X.165IN SCRW TERM VERT PC MNT
C1A	5412	220P 100V 10%CAP T&R BEAD NPO	J4	3498	1/4" JCK PCB MT HORZ		TERM13	2312	6-32X.165IN SCRW TERM VERT PC MNT
C1B	5412	220P 100V 10%CAP T&R BEAD NPO	J5	3498	1/4" JCK PCB MT HORZ		TERM14	2312	6-32X.165IN SCRW TERM VERT PC MNT
C2	5896	4700U 80V 20%CAP BLK 25X50MM ELS	J6	3498	1/4" JCK PCB MT HORZ		TERM15	2312	6-32X.165IN SCRW TERM VERT PC MNT
C2A	5412	220P 100V 10%CAP T&R BEAD NPO	J7	3498	1/4" JCK PCB MT HORZ		TERM19	2312	6-32X.165IN SCRW TERM VERT PC MNT
C2B	5412	220P 100V 10%CAP T&R BEAD NPO	K1	4094	RELAY 1C 16AMP DC12 034MA PC-C		TERM20	2312	6-32X.165IN SCRW TERM VERT PC MNT
C3	5266	680N 250V 20%CAP BLK X2 27MM AC	K2	3722	RELAY 1A 30AMP DC24 036MA PC-C		TERM21	2312	6-32X.165IN SCRW TERM VERT PC MNT
C4A	5840	.22N 400V 10%CAP BLK RAD POLY FLM	K3	3722	RELAY 1A 30AMP DC24 036MA PC-C		TERM28	2312	6-32X.165IN SCRW TERM VERT PC MNT
C24B	5840	.22N 400V 10%CAP BLK RAD POLY FLM	L1A	3820	.4UH COIL 14AWG ZOBEL HORIZONTAL		TERM29	2312	6-32X.165IN SCRW TERM VERT PC MNT
C28	5945	.10U 63V 20%CAP T&R RAD .2EL	L1B	3820	.4UH COIL 14AWG ZOBEL HORIZONTAL		TERM30	2312	6-32X.165IN SCRW TERM VERT PC MNT
C29	5945	.10U 63V 20%CAP T&R RAD .2EL	Q21	5105	MPSA13 TO92 NPN DARL T&R TA		TERM34	2312	6-32X.165IN SCRW TERM VERT PC MNT
C30	5945	.10U 63V 20%CAP T&R RAD .2EL	Q22	5105	MPSA13 TO92 NPN DARL T&R TA		TERM35	2312	6-32X.165IN SCRW TERM VERT PC MNT
C31	5231	220N 63V 5%CAP T&R RAD .2FLM	Q30A	5103	MPSA06 TO92 NPN TRAN T&R TA		TERM36	2312	6-32X.165IN SCRW TERM VERT PC MNT
C32	5898	8200U 50V 20%CAP 25X50MM ELS	Q30B	5103	MPSA06 TO92 NPN TRAN T&R TA		TERM43	2312	6-32X.165IN SCRW TERM VERT PC MNT
C33	5898	8200U 50V 20%CAP 25X50MM ELS	Q31A	5101	BC550C TO92 NPN TRAN T&R TB		TERM44	2312	6-32X.165IN SCRW TERM VERT PC MNT
C34	5896	4700U 80V 20%CAP BLK 25X50MM ELS	Q31B	5101	BC550C TO92 NPN TRAN T&R TB		TERM45	2312	6-32X.165IN SCRW TERM VERT PC MNT
C35	5896	4700U 80V 20%CAP BLK 25X50MM ELS	Q35	6916	TI107 TO220 PNP TRAN DARL TE		D4	6840	MC33078R IC DUAL OP AMP
C36	5899	3300U 100V 20%CAP BLK 25X50MM ELS	Q39	5103	MPSA06 TO92 NPN TRAN T&R TA		W1	4151	4 PIN POWER PIN HEADER MALE POLZD
C37	5899	3300U 100V 20%CAP BLK 25X50MM ELS	Q40	6814	MJF127G T221D PNP TRAN DARL TJ		W2	4163	5 PIN POWER PIN HEADER MALE POLZD
C38	5896	4700U 80V 20%CAP BLK 25X50MM ELS	Q41	6815	MJF122G T221D NPN TRAN DARL TJ		W7	2329	12 CIR XH-HEADER .098IN
C39	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R1	6129	W250 27K 5%MINI T&R RES		W8	2329	12 CIR XH-HEADER .098IN
C40	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R1A	4639	W250 4K99 1% T&R RES		W9	4151	4 PIN POWER PIN HEADER MALE POLZD
C41	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R1B	4639	W250 4K99 1% T&R RES		W10	4146	3 PIN POWER PIN HEADER MALE POLZD
C42	5212	100N 63V 5%CAP T&R RAD .2FLM	R2	6136	W250 3K3 5%MINI T&R RES		W15	4056	2 CIR XH-HEADER .098IN
C43	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R2A	4639	W250 4K99 1% T&R RES		W16	4056	2 CIR XH-HEADER .098IN
C43A	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R2B	4639	W250 4K99 1% T&R RES		W20	4217	4 CIR HEADER VERT .056IN
C43B	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R3	2044	W250 100R0 FUSIBLE T&R RES		W21	4217	4 CIR HEADER VERT .056IN
C44	5898	8200U 50V 20%CAP 25X50MM ELS	R3A	6116	W250 10K0 1%MINI MF T&R RES		W22	4217	4 CIR HEADER VERT .056IN
C44A	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R3B	6116	W250 10K0 1%MINI MF T&R RES		W23	4216	6 CIR HEADER VERT .056IN
C44B	5879	100U 16V 20%CAP T&R 8X7MM .2EL	R4	4843	W250 470K 5% T&R RES		W24	4216	6 CIR HEADER VERT .056IN
C45	5898	8200U 50V 20%CAP 25X50MM ELS	R4A	6116	W250 10K0 1%MINI MF T&R RES		W25	4216	6 CIR HEADER VERT .056IN
C45A	5258	.4U7 63V 20%CAP T&R 5X7MM .2EL	R4B	6116	W250 10K0 1%MINI MF T&R RES		W26	4217	4 CIR HEADER VERT .056IN
C45B	5258	.4U7 63V 20%CAP T&R 5X7MM .2EL	R5	4843	W250 470K 5% T&R RES		W27	4217	4 CIR HEADER VERT .056IN
C46	5212	100N 63V 5%CAP T&R RAD .2FLM	R6	4843	W250 470K 5% T&R RES		W28	4217	4 CIR HEADER VERT .056IN
C47	5618	470U 25V 20%CAP BLK 10X15MM EL	R7	4843	W250 470K 5% T&R RES		W31	4216	6 CIR HEADER VERT .056IN
C48	5314	100N 50V 10%CAP T&R BEAD X7R	R36A	6819	10K 5% THERMISTOR VISH NTC		W32	4216	6 CIR HEADER VERT .056IN
C49	5896	4700U 80V 20%CAP BLK 25X50MM ELS	R36B	6819	10K 5% THERMISTOR VISH NTC		R33	4216	6 CIR HEADER VERT .056IN
C50	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R52	4981	W250 1K 5%MINI T&R RES		ZD1	6461	1N5240BRL 10V0 0W5 ZENER 5% T&R
C51	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R53	6120	W250 100K 5%MINI T&R RES		ZD2	6461	1N5240BRL 10V0 0W5 ZENER 5% T&R
C52	5896	4700U 80V 20%CAP BLK 25X50MM ELS	R54	6120	W250 100K 5%MINI T&R RES		ZD11	6875	1N5359B 24V0 5W0 ZENER 5% T&R
C54	5314	100N 50V 10%CAP T&R BEAD X7R	R63	4834	W250 47K 5% T&R RES		ZD13	6875	1N5359B 24V0 5W0 ZENER 5% T&R
C55	5314	100N 50V 10%CAP T&R BEAD X7R	R64	4834	W250 47K 5% T&R RES		ZD14	6439	1N5225B 3V0 0W5 ZENER 5% T&R
C56	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R65	4834	W250 47K 5% T&R RES		ZD15	6439	1N5225B 3V0 0W5 ZENER 5% T&R
C57	5899	3300U 100V 20%CAP BLK 25X50MM ELS	R66	4834	W250 47K 5% T&R RES		ZD16	6440	1N750ARL 4V7 0W5 ZENER 5% T&R
C69	5197	220P 100V 2%CAP T&R RAD CER.2NPO	R68	4839	W250 150K 5% T&R RES		ZD17	6440	1N750ARL 4V7 0W5 ZENER 5% T&R
C70	5197	220P 100V 2%CAP T&R RAD CER.2NPO	R69	4839	W250 150K 5% T&R RES		ZD18	6432	1N5248B 18V0 0W5 ZENER 5% T&R
C71	5197	220P 100V 2%CAP T&R RAD CER.2NPO	R76A	2008	1W00 10R 5%FLAME PROOF T&R RES		ZD19	6432	1N5248B 18V0 0W5 ZENER 5% T&R
C72	5197	220P 100V 2%CAP T&R RAD CER.2NPO	R76B	2008	1W00 10R 5%FLAME PROOF T&R RES				
D1	6436	1N753ARL 6V2 0W5 ZENER 5% T&R	R77A	2008	1W00 10R 5%FLAME PROOF T&R RES				
D24	6825	1N4148 75V 0A45 DIODE T&R	R77B	2008	1W00 10R 5%FLAME PROOF T&R RES				
D25	6825	1N4148 75V 0A45 DIODE T&R	R78A	4748	2W00 3R9 5% T&R RES				
D26	6425	BAV21 200V 0A25 DIODE T&R	R78B	4748	2W00 3R9 5% T&R RES				
D27	6425	BAV21 200V 0A25 DIODE T&R	R88	4791	W250 1K54 1% T&T RES				
D30A	6934	MR854 400V 3A0 DIODE FASREC	R89	4791	W250 1K54 1% T&T RES				
D30B	6934	MR854 400V 3A0 DIODE FASREC	R90	4791	W250 1K54 1% T&T RES				
D31A	6934	MR854 400V 3A0 DIODE FASREC	R91	4791	W250 1K54 1% T&T RES				
D31B	6934	MR854 400V 3A0 DIODE FASREC	R101A	6120	W250 100K 5%MINI T&R RES				
D45A	6825	1N4148 75V 0A45 DIODE T&R	R101B	6120	W250 100K 5%MINI T&R RES				
D45B	6825	1N4148 75V 0A45 DIODE T&R	R104A	6118	W250 22K 5%MINI T&R RES				
D46A	6825	1N4148 75V 0A45 DIODE T&R	R104B	6118	W250 22K 5%MINI T&R RES				
D46B	6825	1N4148 75V 0A45 DIODE T&R	R105A	4982	W250 4K7 5%MINI T&R RES				
D47A	6825	1N4148 75V 0A45 DIODE T&R	R105B	4982	W250 4K7 5%MINI T&R RES				
D47B	6825	1N4148 75V 0A45 DIODE T&R	R106A	4890	W250 30K 5% T&R RES				
D49A	6450	1N5242B 12V0 0W5 ZENER 5% T&R	R106B	4890	W250 30K 5% T&R RES				
D49B	6450	1N5242B 12V0 0W5 ZENER 5% T&R	R111	4982	W250 4K7 5%MINI T&R RES				
D56	6825	1N4148 75V 0A45 DIODE T&R	R115	2006	1W00 1R 5%FLAME PROOF T&R RES				
D57	6825	1N4148 75V 0A45 DIODE T&R	R124	6120	W250 100K 5%MINI T&R RES				
D58	6825	1N4148 75V 0A45 DIODE T&R	R282	4630	W500 15K 5% T&R RES				
D59	6772	BRIDGE 25A 400V WIRE LEAD SIP	R284	4630	W500 15K 5% T&R RES				
D60	6772	BRIDGE 25A 400V WIRE LEAD SIP	R285	4630	W500 15K 5% T&R RES				
D61	6772	BRIDGE 25A 400V WIRE LEAD SIP	R286	4630	W500 15K 5% T&R RES				
D62A	6825	1N4148 75V 0A45 DIODE T&R	R287	4663	W500 8K2 5% T&R RES				
D62B	6825	1N4148 75V 0A45 DIODE T&R	R288	4663	W500 8K2 5% T&R RES				
D70A	6825	1N4148 75V 0A45 DIODE T&R	R289	2010	W167 10R0 2%FLAME PROOF T&R RES				
D70B	6825	1N4148 75V 0A45 DIODE T&R	R290	2010	W167 10R0 2%FLAME PROOF T&R RES				
D71	6426	1N5254B 27V0 0W5 ZENER 5% T&R	R291	2033	W167 1K 2%FLAME PROOF T&R RES				
H2	3489	CLIP 250X032 18-22AWG DISCO/INSL	R292	2033	W167 1K 2%FLAME PROOF T&R RES				
J3	3922	XLR FEML PCB MT HORZ THIN SNAP-IN	S1	3425	DPDT PUSH SW PCMT BREAK B4 MAKE				
J3	3922	XLR FEML PCB MT HORZ THIN SNAP-IN	TERM4	2312	6-32X.165IN SCRW TERM VERT PC MNT				

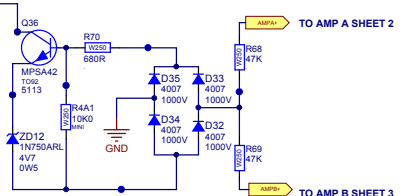
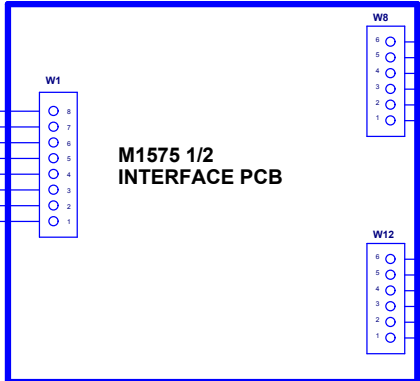
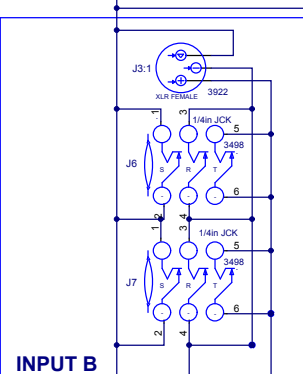
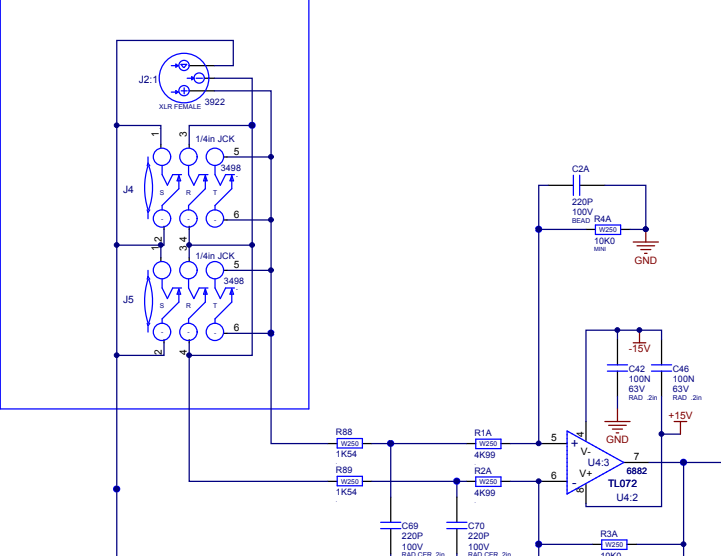
M1576 Parts Reference List 8/15/2018

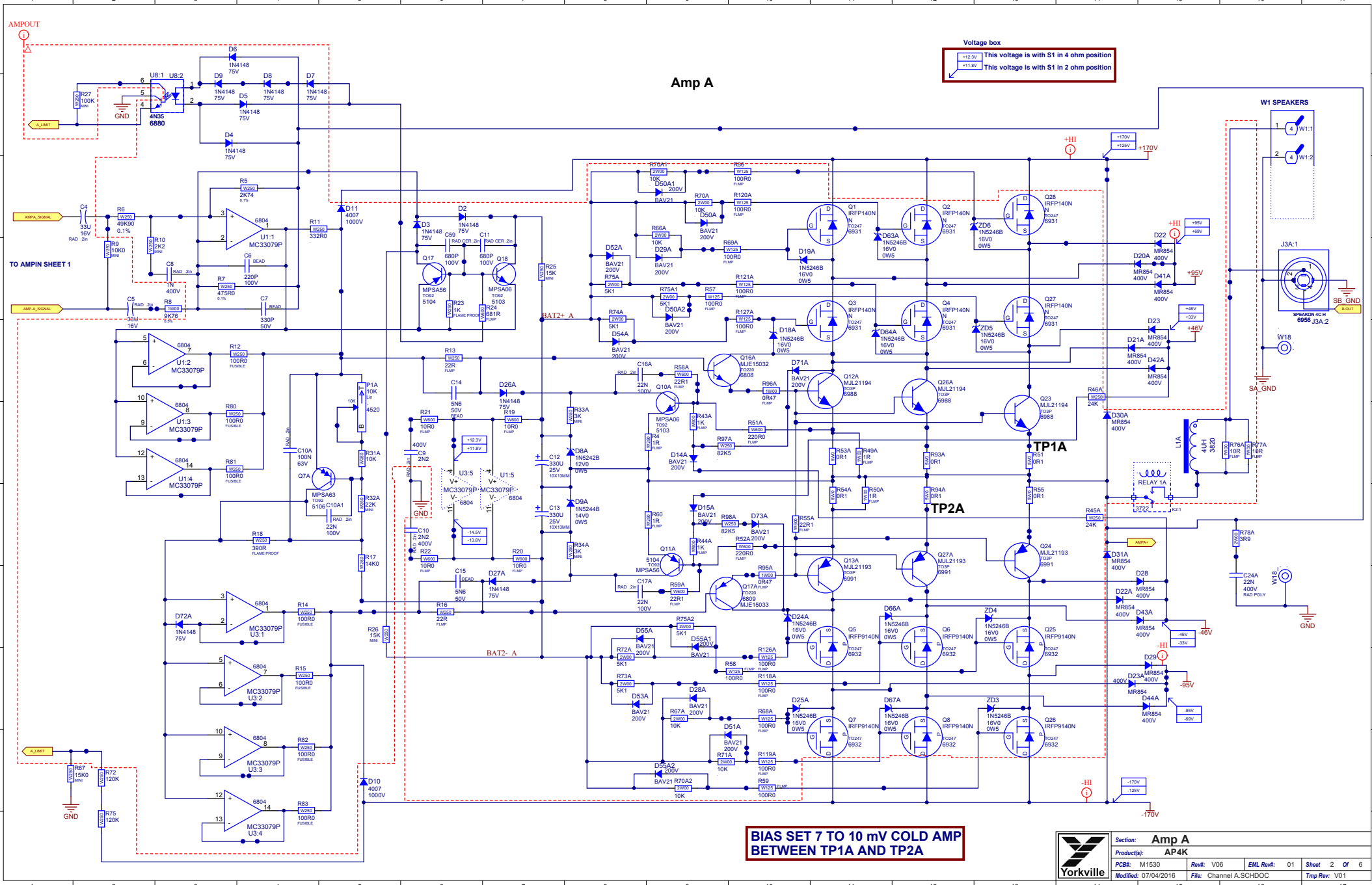
REF	YS #	Description	REF	YS #	Description	REF	YS #	Description	REF	YS #	Description	REF	YS #	Description
A1-ASS	IM1576-59	AP4K INTERFACE/DISPLAY PCB	D207A		CDSF4148 75V 0A15 1005 SMT	R13		W100 10K0 1% 0805 SMT RES	R209B		W100 10K0 1% 0805 SMT RES			
C1	5852	_10U 35V 20%CAP T&R 05X05MM EL	D207B		CDSF4148 75V 0A15 1005 SMT	R13D		W100 2K0 1% 0805 SMT RES	R210A		W100 10K0 1% 0805 SMT RES			
C1D		100N 50V 5%CAP 0805 SMT X7R	D208A		CDSF4148 75V 0A15 1005 SMT	R14		W100 4K99 1% 0805 SMT RES	R210B		W100 10K0 1% 0805 SMT RES			
C2	5852	_10U 35V 20%CAP T&R 05X05MM EL	D208B		CDSF4148 75V 0A15 1005 SMT	R14D		W125 249R0 1% 0805 SMT RES	R211A		W100 10K0 1% 0805 SMT RES			
C2D		100N 50V 5%CAP 0805 SMT X7R	E10	3858	#4X3/4 PLASTIC HEX SPACER	R15		W100 10K0 1% 0805 SMT RES	R211B		W100 10K0 1% 0805 SMT RES			
C3A	5852	_10U 35V 20%CAP T&R 05X05MM EL	E11	3858	#4X3/4 PLASTIC HEX SPACER	R15A		W100 15K0 1% 0805 SMT RES	R212A		W125 150K0 1% 0805 SMT RES			
C3B	5852	_10U 35V 20%CAP T&R 05X05MM EL	E12	3858	#4X3/4 PLASTIC HEX SPACER	R15B		W100 15K0 1% 0805 SMT RES	R212B		W125 150K0 1% 0805 SMT RES			
C3D		100N 50V 5%CAP 0805 SMT X7R	E13	3858	#4X3/4 PLASTIC HEX SPACER	R15D		W125 249R0 1% 0805 SMT RES	R215A		W125 68K 5% 0805 SMT RES			
C4A		180P 50V 5%CAP 0805 SMT NPO	LD1D		GRN LED 2V2 20MA 1206 SMT	R16		W100 4K99 1% 0805 SMT RES	R215B		W125 68K 5% 0805 SMT RES			
C4B		180P 50V 5%CAP 0805 SMT NPO	LD1A1D		GRN LED 2V2 20MA 1206 SMT	R16D		W125 47R 5% 0805 SMT RES	S2	3522	DPDT MINI PC VERT SNP ALT			
C4D		100N 50V 5%CAP 0805 SMT X7R	LD1A2D		GRN LED 2V2 20MA 1206 SMT	R56A		W125 100K 5% 0805 SMT RES	S4	3440	4PDT MINI VERT ALT SWITCH			
C5D		_10U 16V 10%CAP 1206 SMT X7R	LD1A3D		GRN LED 2V2 20MA 1206 SMT	R56B		W125 100K 5% 0805 SMT RES	S5	3522	DPDT MINI PC VERT SNP ALT			
C6D		_10U 16V 10%CAP 1206 SMT X7R	LD1A4D		YEL LED 2V0 20MA 3216 SMT	R60		W100 10K0 1% 0805 SMT RES	U1D		LM339M QUAD SS COMP SMT SO-14			
C25A	5212	100N 63V 5%CAP T&R RAD .2FLM	LD1A5D		RED LED 1V9 20MA 1206 SMT	R60A		W125 47K 5% 0805 SMT RES	U2A		LM13700M XCONDUCTANC AMP SMT IC			
C25B	5212	100N 63V 5%CAP T&R RAD .2FLM	LD1B1D		GRN LED 2V2 20MA 1206 SMT	R60B		W125 47K 5% 0805 SMT RES	U2B		LM13700M XCONDUCTANC AMP SMT IC			
C31A	5233	330N 63V 5%CAP T&R RAD .2FLM	LD1B2D		GRN LED 2V2 20MA 1206 SMT	R61		W100 10K0 1% 0805 SMT RES	U2D		LM339M QUAD SS COMP SMT SO-14			
C31B	5233	330N 63V 5%CAP T&R RAD .2FLM	LD1B3D		GRN LED 2V2 20MA 1206 SMT	R62		W125 249R0 1% 0805 SMT RES	U3D		33078 DUAL OPAMP SMT SO-8			
C38A	5240	680N 63V 10%CAP T&R RAD .2FLM	LD1B4D		YEL LED 2V0 20MA 3216 SMT	R63		W125 249R0 1% 0805 SMT RES	U7		MC33079D QUAD OPAMP SMT SO14			
C38B	5240	680N 63V 10%CAP T&R RAD .2FLM	LD1B5D		RED LED 1V9 20MA 1206 SMT	R64		W100 27K4 1% 0805 SMT RES	U13		MC33079D QUAD OPAMP SMT SO14			
C39A	5233	330N 63V 5%CAP T&R RAD .2FLM	P1	9083	_20K 15C R/A 12MM DUAL 21DET P34	R65		W100 27K4 1% 0805 SMT RES	U14		33078 DUAL OPAMP SMT SO-8			
C39B	5233	330N 63V 5%CAP T&R RAD .2FLM	P2	9083	_20K 15C R/A 12MM DUAL 21DET P34	R66		W125 4K7 5% 0805 SMT RES	U15		MC33079D QUAD OPAMP SMT SO14			
C40A		180P 50V 5%CAP 0805 SMT NPO	PCB1	M1576BLANK	2_OZ 2SD 78.74SQIN 4PER AP4K	R68		W125 33K 5% 0805 SMT RES	W1	2329	12 CIR XH-HEADER 0.098IN			
C40B		180P 50V 5%CAP 0805 SMT NPO	Q1		MMBT3906LT1 PNP SOT-23 SMT T&R	R69		W125 33K 5% 0805 SMT RES	W8	2337	4 CIR XH-HEADER 0.098IN			
C42	5961	_33U 16V 20%CAP T&R RAD .2IN NP	Q1D		MMBT3906LT1 PNP SOT-23 SMT T&R	R70A		W100 10K0 1% 0805 SMT RES	W12	2337	4 CIR XH-HEADER 0.098IN			
C46		_1N 50V 5%CAP 0805 SMT NPO	Q2		MMBT3906LT1 PNP SOT-23 SMT T&R	R70B		W100 10K0 1% 0805 SMT RES	W20	3596	36PIN BREAKAWAY .15GOLD .100			
C53		_1N 50V 5%CAP 0805 SMT NPO	Q2D		MMBT3906LT1 PNP SOT-23 SMT T&R	R79A		W125 100K 5% 0805 SMT RES	ZD11		MM3Z10V1T1G 10V0 0W2 5% SMT ZEN			
C55A		180P 50V 5%CAP 0805 SMT NPO	Q3		MMBT3904 NPN SOT-23 SMT	R79B		W125 100K 5% 0805 SMT RES	ZD200A		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
C55B		180P 50V 5%CAP 0805 SMT NPO	Q4		MMBT3904 NPN SOT-23 SMT	R80A		W100 18K2 1% 0805 SMT RES	ZD201A		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
C58		100N 100V 10%CAP 1206 SMT X7R	Q22A		MMBT3906LT1 PNP SOT-23 SMT T&R	R80B		W100 18K2 1% 0805 SMT RES						
C60		100N 100V 10%CAP 1206 SMT X7R	Q22B		MMBT3906LT1 PNP SOT-23 SMT T&R	R90A		W100 27K4 1% 0805 SMT RES						
C75	5240	680N 63V 10%CAP T&R RAD .2FLM	Q33		MMBT3904 NPN SOT-23 SMT	R90B		W100 27K4 1% 0805 SMT RES						
C76	5240	680N 63V 10%CAP T&R RAD .2FLM	Q34		MMBT3904 NPN SOT-23 SMT	R91A		W100 27K4 1% 0805 SMT RES						
C77	5240	680N 63V 10%CAP T&R RAD .2FLM	Q50A		MMBT3906LT1 PNP SOT-23 SMT T&R	R91B		W100 27K4 1% 0805 SMT RES						
C78	5240	680N 63V 10%CAP T&R RAD .2FLM	Q50B		MMBT3906LT1 PNP SOT-23 SMT T&R	R92		W100 10K0 1% 0805 SMT RES						
C200A	5961	_33U 16V 20%CAP T&R RAD .2IN NP	Q51A		MMBT3904 NPN SOT-23 SMT	R92A		W125 4K7 5% 0805 SMT RES						
C200B	5961	_33U 16V 20%CAP T&R RAD .2IN NP	Q51B		MMBT3904 NPN SOT-23 SMT	R92B		W125 4K7 5% 0805 SMT RES						
C201A		100P 50V 10%CAP 0805 SMT NPO	Q52A		MMBT3904 NPN SOT-23 SMT	R93		W100 10K0 1% 0805 SMT RES						
C201B		100P 50V 10%CAP 0805 SMT NPO	Q52B		MMBT3904 NPN SOT-23 SMT	R94		W100 475K 1% 0805 SMT RES						
C202A		100P 50V 10%CAP 0805 SMT NPO	Q53A		MMBT3904 NPN SOT-23 SMT	R95		W100 475K 1% 0805 SMT RES						
C202B		100P 50V 10%CAP 0805 SMT NPO	Q53B		MMBT3904 NPN SOT-23 SMT	R95A		W100 100R 1% 0805 SMT RES						
C203B		_1U0 50V 10%CAP 1206 SMT CER	R1		W125 22K 5% 0805 SMT RES	R95B		W100 100R 1% 0805 SMT RES						
C204A		_1U0 50V 10%CAP 1206 SMT CER	R1D		W125 47K5 1% 0805 SMT RES	R96		W100 475K 1% 0805 SMT RES						
C205		100P 50V 10%CAP 0805 SMT NPO	R2		W125 22K 5% 0805 SMT RES	R96A		W100 100R 1% 0805 SMT RES						
C206		100P 50V 10%CAP 0805 SMT NPO	R2D		W100 100K0 1% 0805 SMT RES	R96B		W100 100R 1% 0805 SMT RES						
C207		_47P 50V 5%CAP 0805 SMT NPO	R3		W100 10K0 1% 0805 SMT RES	R97		W100 475K 1% 0805 SMT RES						
C208		_47P 50V 5%CAP 0805 SMT NPO	R3D		W100 475R 1% 0805 SMT RES	R97A		W100 100R 1% 0805 SMT RES						
C215A		470P 50V 5%CAP 0603 SMT NPO	R4		W100 10K0 1% 0805 SMT RES	R97B		W100 100R 1% 0805 SMT RES						
C215B		470P 50V 5%CAP 0603 SMT NPO	R4D		W125 47K5 1% 0805 SMT RES	R98		W125 2K2 5% 0805 SMT RES						
D1		CDSF4148 75V 0A15 1005 SMT	R5		W100 10K0 1% 0805 SMT RES	R100		W125 2K2 5% 0805 SMT RES						
D1D		CDSF4148 75V 0A15 1005 SMT	R5A		W100 4K99 1% 0805 SMT RES	R100A		W100 10M 1% 0805 SMT RES						
D2		CDSF4148 75V 0A15 1005 SMT	R5B		W100 4K99 1% 0805 SMT RES	R100B		W100 10M 1% 0805 SMT RES						
D2D		CDSF4148 75V 0A15 1005 SMT	R5D		W100 100K0 1% 0805 SMT RES	R101A		W100 10M 1% 0805 SMT RES						
D3		CDSF4148 75V 0A15 1005 SMT	R6		W100 10K0 1% 0805 SMT RES	R101B		W100 10M 1% 0805 SMT RES						
D3D		CDSF4148 75V 0A15 1005 SMT	R6A		W125 47K 5% 0805 SMT RES	R102B		W100 100R 1% 0805 SMT RES						
D4		CDSF4148 75V 0A15 1005 SMT	R6B		W125 47K 5% 0805 SMT RES	R105A		W100 100R 1% 0805 SMT RES						
D4D		CDSF4148 75V 0A15 1005 SMT	R6D		W100 475R 1% 0805 SMT RES	R110A		W100 10M 1% 0805 SMT RES						
D5		CDSF4148 75V 0A15 1005 SMT	R7		W100 10K0 1% 0805 SMT RES	R110B		W100 10M 1% 0805 SMT RES						
D6		CDSF4148 75V 0A15 1005 SMT	R7A		W100 10K0 1% 0805 SMT RES	R120A		W100 15K0 1% 0805 SMT RES						
D7		CDSF4148 75V 0A15 1005 SMT	R7B		W100 10K0 1% 0805 SMT RES	R122B		W100 15K0 1% 0805 SMT RES						
D8		CDSF4148 75V 0A15 1005 SMT	R7D		W100 7K50 1% 0805 SMT RES	R150A		W100 15K0 1% 0805 SMT RES						
D9		CDSF4148 75V 0A15 1005 SMT	R8		W100 10K0 1% 0805 SMT RES	R150B		W100 15K0 1% 0805 SMT RES						
D10		CDSF4148 75V 0A15 1005 SMT	R8A		W100 18K2 1% 0805 SMT RES	R200A		W100 10K0 1% 0805 SMT RES						
D30		CDSF4148 75V 0A15 1005 SMT	R8B		W100 18K2 1% 0805 SMT RES	R200B		W100 10K0 1% 0805 SMT RES						
D31		CDSF4148 75V 0A15 1005 SMT	R8D		W100 475R 1% 0805 SMT RES	R201A		W100 1K0 1% 0805 SMT RES						
D40A		CDSF4148 75V 0A15 1005 SMT	R9		W100 10K0 1% 0805 SMT RES	R201B		W100 1K0 1% 0805 SMT RES						
D40B		CDSF4148 75V 0A15 1005 SMT	R9A		W100 100R 1% 0805 SMT RES	R202A		W100 1K0 1% 0805 SMT RES						
D200A		CDSF4148 75V 0A15 1005 SMT	R9B		W100 100R 1% 0805 SMT RES	R202B		W100 1K0 1% 0805 SMT RES						
D200B		CDSF4148 75V 0A15 1005 SMT	R9D		W250 619R0 1% 1206 SMT RES	R203A		W100 10K0 1% 0805 SMT RES						
D201A		CDSF4148 75V 0A15 1005 SMT	R10		W125 680R 1% 0805 SMT RES	R203B		W100 10K0 1% 0805 SMT RES						
D201B		CDSF4148 75V 0A15 1005 SMT	R10A		W100 100R 1% 0805 SMT RES	R204A		W125 47K 5% 0805 SMT RES						
D202A		CDSF4148 75V 0A15 1005 SMT	R10B		W100 100R 1% 0805 SMT RES	R204B		W125 47K 5% 0805 SMT RES						
D202B		CDSF4148 75V 0A15 1005 SMT	R10D		W125 10R0 1% 0805 SMT RES	R205A		W125 47K 5% 0805 SMT RES						
D203A		CDSF4148 75V 0A15 1005 SMT	R11		W125 680R 1% 0805 SMT RES	R205B		W125 47K 5% 0805 SMT RES						

M1686 Parts Reference List 8/14/2018

REF	YS #	Description	REF	YS #	Description	REF	YS #	Description
AI-ASS	M1686-59	AM6CE/AP4K OUTPUT MODULE	R21	4745	5W0 0R1 5% BLK RES			
C2	5254	_1U 63V 20%CAP T&R 4X7MM .2EL	R22		W100 20K0 1% 0805 SMT RES			
C4	5267	100U 25V 20%CAP T&R RAD .2EL	R23		W125 68K 5% 0805 SMT RES			
C5	5267	100U 25V 20%CAP T&R RAD .2EL	R25		W125 10R0 1% 0805 SMT RES			
C6	5961	_33U 16V 20%CAP T&R RAD .2IN NP	R26		W100 221R 1% 0805 SMT RES			
C7	5961	_33U 16V 20%CAP T&R RAD .2IN NP	R27		_10K 5% THERMISTOR NTC 0805 SMT			
C8	5208	_2N2 400V 5%CAP T&R RAD .2FLM	R28		W125 47R 5% 0805 SMT RES			
C9	5208	_2N2 400V 5%CAP T&R RAD .2FLM	R31		W125 10R0 1% 0805 SMT RES			
C10		_1N 50V 5%CAP 0805 SMT NPO	R32		1W00 10K 5% 2512 SMT RES			
C11		_27P 50V 5%CAP 0805 SMT NPO	R33		W125 47R 5% 0805 SMT RES			
C12		180P 50V 5%CAP 0805 SMT NPO	R34		1W00 47K 5% 2512 SMT RES			
C13		22N 50V 10%CAP 0805 SMT X7R	R35		1W00 47K 5% 2512 SMT RES			
C14		22N 50V 10%CAP 0805 SMT X7R	R36		1W00 47K 5% 2512 SMT RES			
C15		100N 50V 5%CAP 0805 SMT X7R	R37		W100 100R 1% 0805 SMT RES			
C16		_10N 50V 10%CAP 0805 SMT X7R	R38		W125 47R 5% 0805 SMT RES			
C17		220N 50V 10%CAP 1206 SMT X7R	R39		W125 150K 5% 0805 SMT RES			
D1		BAS21L 250V 200MA SOT23 SMT	R40		W125 150K 5% 0805 SMT RES			
D2	6934	MR854 400V 3A0 DIODE FASREC	R42		W125 68K 5% 0805 SMT RES			
D3		BAS21L 250V 200MA SOT23 SMT	R43		W125 68K 5% 0805 SMT RES			
D4	6934	MR854 400V 3A0 DIODE FASREC	R44		W125 47R 5% 0805 SMT RES			
D5		ES1H 500V 1A0 D214 UPGT 8814	R45		W125 0R 5% 0805 SMT RES			
D6		BAS21L 250V 200MA SOT23 SMT	R46		W100 15K0 1% 0805 SMT RES			
D7		BAS21L 250V 200MA SOT23 SMT	R47		W333 33R 5% 1210 SMT RES			
D8		BAS21L 250V 200MA SOT23 SMT	R48		W333 33R 5% 1210 SMT RES			
D9		BAS21L 250V 200MA SOT23 SMT	R49		W125 10R0 1% 0805 SMT RES			
D10		BAS21L 250V 200MA SOT23 SMT	R50		W125 10R0 1% 0805 SMT RES			
D11		ES1H 500V 1A0 D214 UPGT 8814	R51		W100 10K0 1% 0805 SMT RES			
D12		BAS21L 250V 200MA SOT23 SMT	R52		W125 2K2 5% 0805 SMT RES			
D13	6934	MR854 400V 3A0 DIODE FASREC	R53		W125 18K00 0.1% 0805 SMT RES			
D14		BAS21L 250V 200MA SOT23 SMT	R54		W125 18K00 0.1% 0805 SMT RES			
D15	6934	MR854 400V 3A0 DIODE FASREC	R55		W100 100R 1% 0805 SMT RES			
D16		BAS21L 250V 200MA SOT23 SMT	R56		W125 220K 5% 0805 SMT RES			
D17		MMSZ46BLT1 16V0 0W35 5% SMT ZEN	R57		W125 1K02 0.1% 0805 SMT RES			
D18		MM3Z15VT1G 15V0 0W2 5% SMT ZEN	R58		W125 1K02 0.1% 0805 SMT RES			
D19		MM3Z15VT1G 15V0 0W2 5% SMT ZEN	R59		W125 47R 5% 0805 SMT RES			
D20		MMSZ46BLT1 16V0 0W35 5% SMT ZEN	R60		W125 18K00 0.1% 0805 SMT RES			
D21		CDSF4148 75V 0A15 1005 SMT	R61		W125 18K00 0.1% 0805 SMT RES			
D23		BAS21L 250V 200MA SOT23 SMT	R62		W125 18K00 0.1% 0805 SMT RES			
D24		BAS21L 250V 200MA SOT23 SMT	R63		W125 18K00 0.1% 0805 SMT RES			
D25		CDSF4148 75V 0A15 1005 SMT	R64		W125 18K00 0.1% 0805 SMT RES			
D26		CDSF4148 75V 0A15 1005 SMT	R65		W125 18K00 0.1% 0805 SMT RES			
D27		CDSF4148 75V 0A15 1005 SMT	R66		W250 22R 5% 1206 SMT RES			
D28		CDSF4148 75V 0A15 1005 SMT	R67		W250 22R 5% 1206 SMT RES			
D29		CDSF4148 75V 0A15 1005 SMT	R68		W100 7K50 1% 0805 SMT RES			
LD1		RED LED 1V9 20MA 1206 SMT	R69		W125 20K 5% 0805 SMT RES			
P1	4526	_10K TRIM POT 6MM TOP ADJ RAD	R70		W125 20K 5% 0805 SMT RES			
PCB	M1686BLANK	2_OZ 2SD 93.28 SQIN 6PER AM6CE	R71		W125 20K 5% 0805 SMT RES			
Q1	6968	IRFP140PBF TO247 NCH MFET	R72		W125 20K 5% 0805 SMT RES			
Q2	6968	IRFP140PBF TO247 NCH MFET	TP3		TEST POINT MINIATURE SMT			
Q3	6808	MJE15032 TO220 NPN TRAN TE	TP4		TEST POINT MINIATURE SMT			
Q4	7008	MJL4281AG TO264 NPN TRAN	U1		MC33079D QUAD OPAMP SMT SO14			
Q5		MMBT3904 NPN SOT-23 SMT	W1	2328	8 CIR XH-HEADER 0.098IN			
Q6		MMBT464LT1G PNP DARL SOT-23 SMT	W2	3903	4 CIR PCB CONN BOTTOM .156			
Q7		MMBT3906LT1 PNP SOT-23 SMT T&R	W3	3304	6 CIR PCB CONN BOTTOM .156			
Q8	7009	MJL4302AG TO264 PNP TRAN	ZD1		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
Q9	6809	MJE15033 TO220 PNP TRAN TE	ZD2		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
Q10	6969	IRFP9140PBF TO247 PCH MFET	ZD3		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
Q11	6969	IRFP9140PBF TO247 PCH MFET	ZD4		MMSZ46BLT1 16V0 0W35 5% SMT ZEN			
Q12		MJD340 NPN DPAK3 SMT TR						
Q13		MJD350 PNP DPAK3 SMT TR						
R1		1W00 47K 5% 2512 SMT RES						
R2		W100 100R 1% 0805 SMT RES						
R3		1W00 47K 5% 2512 SMT RES						
R4		1W00 47K 5% 2512 SMT RES						
R5		W100 100R 1% 0805 SMT RES						
R6		1W00 10K 5% 2512 SMT RES						
R7		W100 100R 1% 0805 SMT RES						
R8		W100 1K0 1% 0805 SMT RES						
R9		W100 1K0 1% 0805 SMT RES						
R10		W125 10R0 1% 0805 SMT RES						
R11		W125 47R 5% 0805 SMT RES						
R12		W125 10R0 1% 0805 SMT RES						
R13		W100 221R 1% 0805 SMT RES						
R14		W125 10R0 1% 0805 SMT RES						
R15		W125 68K 5% 0805 SMT RES						
R16		W100 10K0 1% 0805 SMT RES						
R17	4745	5W0 0R1 5% BLK RES						
R18		W125 33K 5% 0805 SMT RES						
R19		W125 11K0 1% 0805 SMT RES						
R20		W125 33K 5% 0805 SMT RES						

INPUT A and BRIDGED



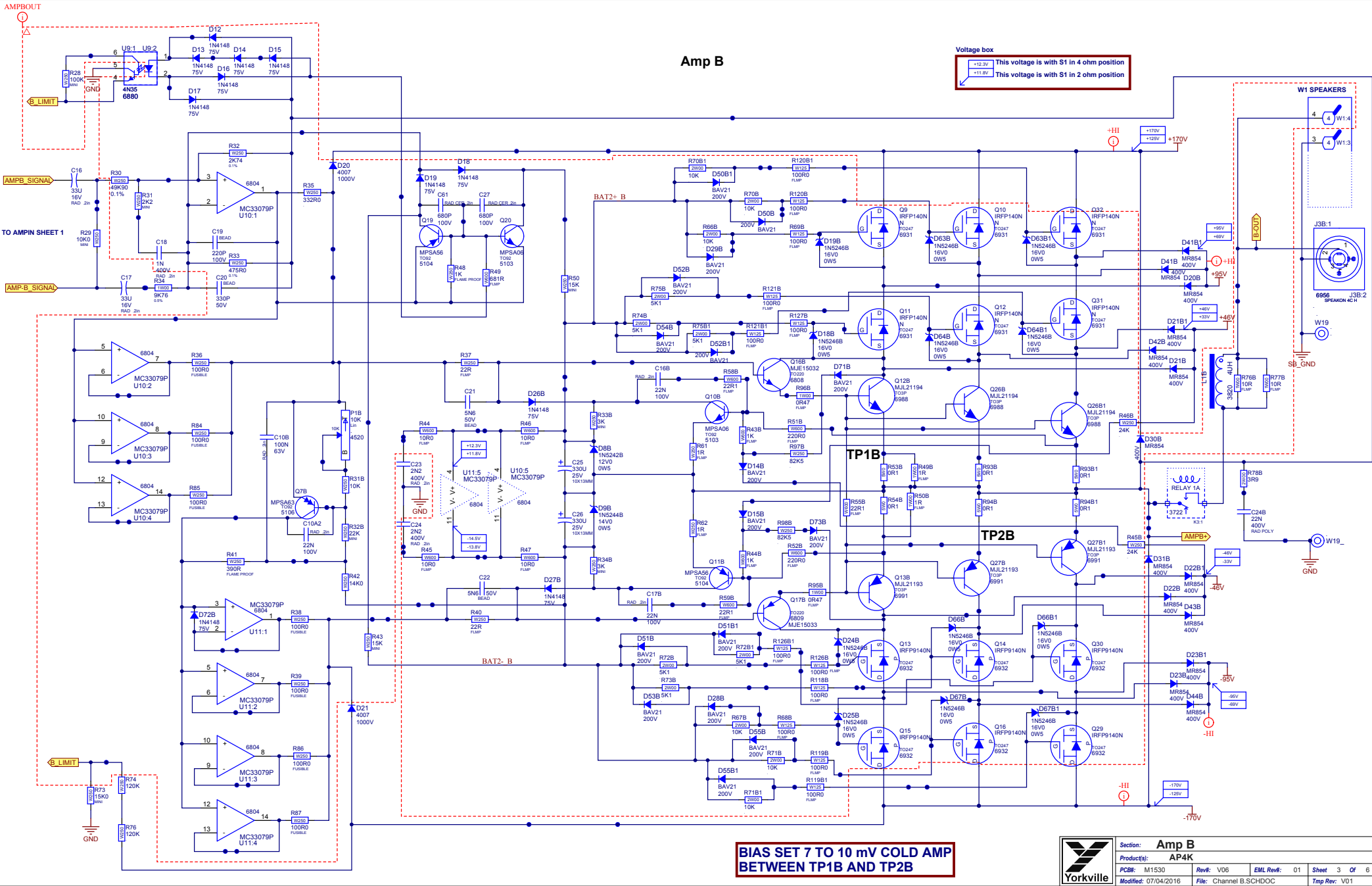


Amp A

Voltage box
 +12.3V This voltage is with S1 in 4 ohm position
 +11.8V This voltage is with S1 in 2 ohm position

BIAS SET 7 TO 10 mV COLD AMP BETWEEN TP1A AND TP2A

	Section: Amp A
	Product(s): AP4K
	PCB#: M1530 Rev: V06 EML Rev: 01 Sheet 2 of 6
	Modified: 07/04/2016 File: Channel A.SCHDOC Temp Rev: V01



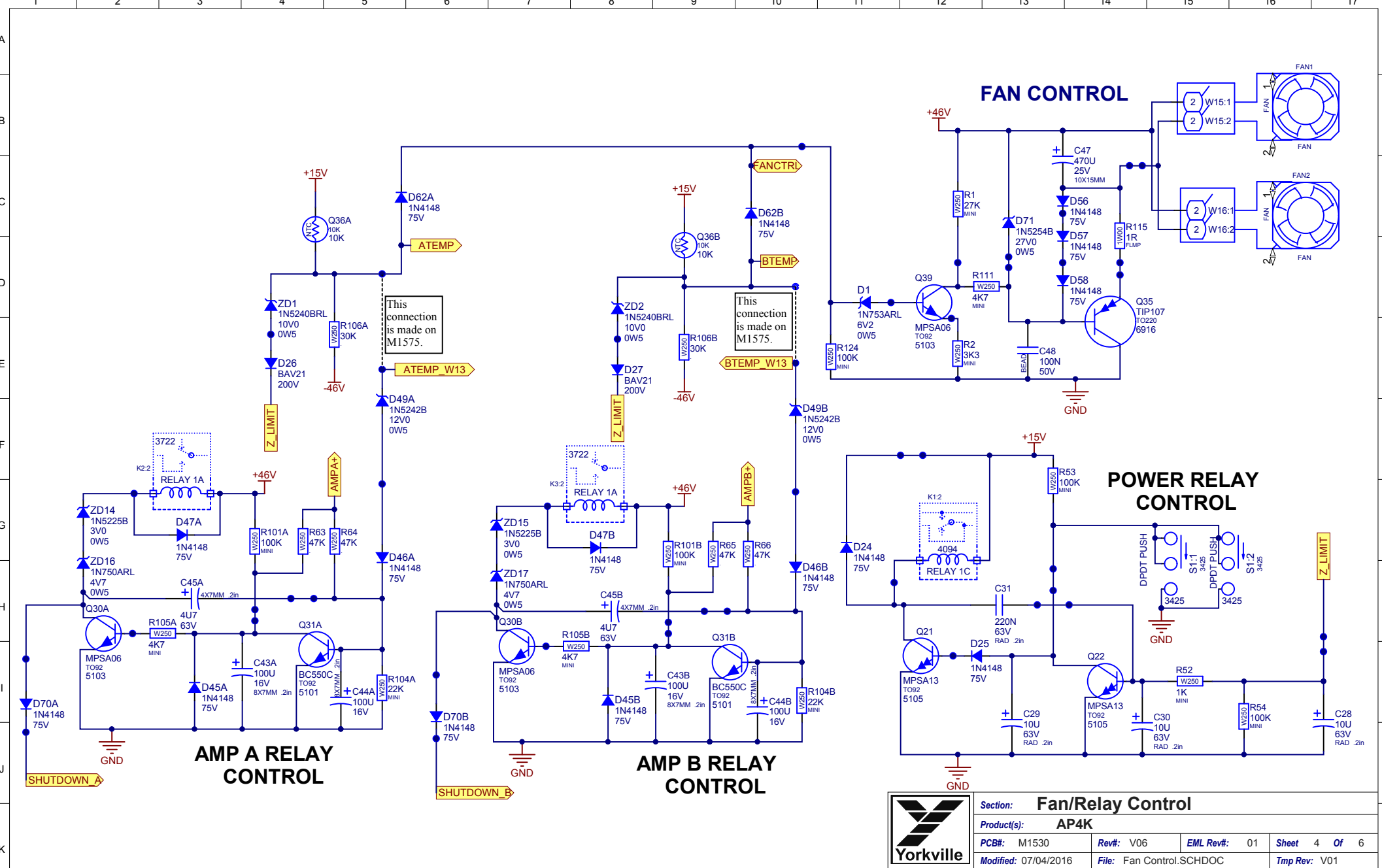
Amp B

Voltage box
 +12.3V This voltage is with S1 in 4 ohm position
 +11.8V This voltage is with S1 in 2 ohm position

BIAS SET 7 TO 10 mV COLD AMP BETWEEN TP1B AND TP2B



Section:	Amp B	
Product(s):	AP4K	
PCB:	M1530	Rev: V06
Modified:	07/04/2016	File: Channel B.SCHDOC
EML Rev:	01	Sheet 3 of 6
Tmp Rev:	V01	



Section: Fan/Relay Control	
Product(s): AP4K	
PCB#: M1530	Rev#: V06
EML Rev#: 01	Sheet 4 Of 6
Modified: 07/04/2016	File: Fan Control.SCHDOC
	Tmp Rev: V01

S6 CIRCUIT BREAKER			
NA	15A	YS#2448	
CE	8A	YS#2408	

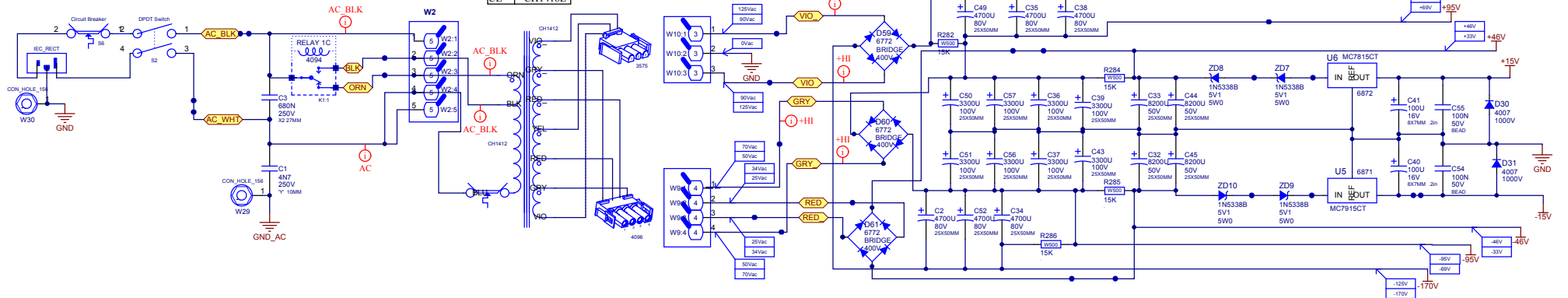
Transformer	
NA	CH1418
CE	CH1418E


Voltage box

125Vac
50Vac

This voltage is with S1 in 4 ohm position

This voltage is with S1 in 2 ohm position



	Section: Power Supply
	Product(s): AP4K
	PCB#: M1530 Rev#: V06 EML Rev#: 01 Sheet 5 of 6
	Modified: 07/04/2016 File: Power Supply.SCHDOC Tmp Rev: V01

DESIGN HISTORY AND INFORMATION

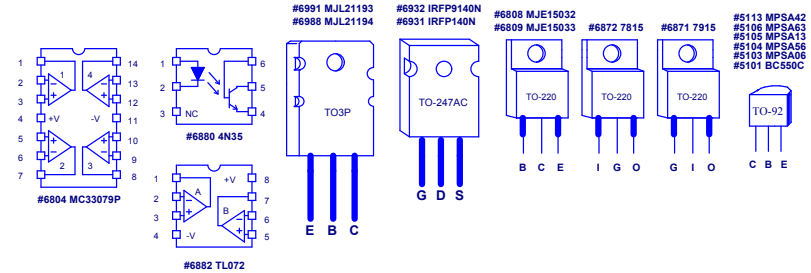
CHANGE HISTORY

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1	22-Mar-13	V01	.	RELEASED
2	20-Jun-13	V02	8753	MINOR CHANGES FOR PRE PRODUCTION RUN
3	10-Dec-13	V03	8598:	Add 4 pin connector #4151 for output. GG
4	27-Mar-14	V04	8630	Add a hole for a support brace. GG
5	15-Dec-14	.	8701	Change R72 and R74 with 2X120K resistor#4851
6	.	.	8734	Tack on #6438(1N4007)diode to C54 and C55.
7	24-Feb-15	V05	8760	via holes moved near J3A
8	.	.	8703	R63-R66, and ZD14-ZD17 added to relay control
9	.	.	.	PC#8701 and PC#8734 Implemented on Board.
10	09-APR-2015	.	8767	PC#8767:R101A and R101B changed from 220K to 100K (YS#6120).
11	07-Jul-2015	V06	8768	Add bottom solder mask on #3820 GG
12	.	.	.	Move W9 away from K2
13

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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LEAD / PIN REFERENCE

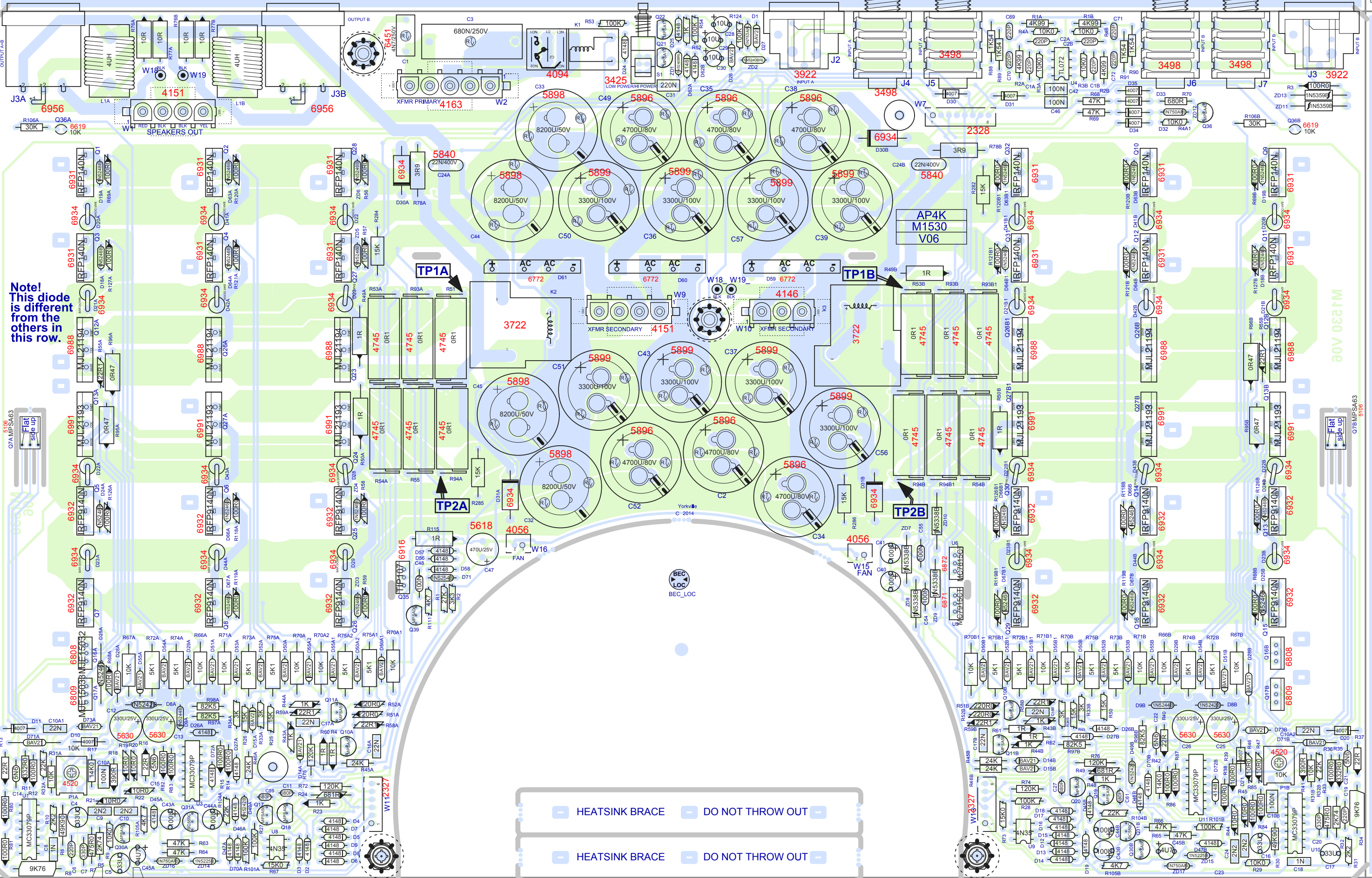


THIS SHEET CONTAINS EXTRA INFORMATION ABOUT THE DESIGN AS WELL AS A HISTORY TABLE.

	Section: Design Information And History				
	Product(s): AP4K				
	PCB#: M1530	Rev#: V06	EML Rev#: 01	Sheet 4	Of 4
	Modified: 07/04/2016				File: History.SchDoc
				Temp Rev: V01	

BlankSize - 18000x11725

Into Wave



Note!
This diode
is different
from the
others in
this row.

5106
Q7A MFP5A63
Flat
side up

5106
Q7B MFP5A63
Flat
side up

HEATSINK BRACE DO NOT THROW OUT
HEATSINK BRACE DO NOT THROW OUT

M1530 V06

AP4K

VCD

SCORE

SCORE

DESIGN HISTORY AND INFORMATION

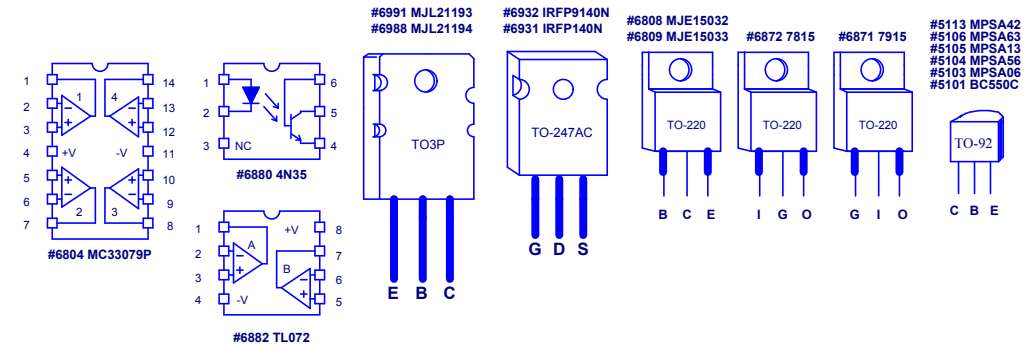
CHANGE HISTORY

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1	22-Mar-13	V01	.	RELEASED
2	20-Jun-13	V02	8753	MINOR CHANGES FOR PRE PRODUCTION RUN
3	10-Dec-13	V03	8598:	Add 4 pin connector #4151 for output. GG
4	27-Mar-14	V04	8630	Add a hole for a support brace. GG
5	15-Dec-14	.	8701	Change R72 and R74 with 2X120K resistor#4851
6	.	.	8734	Tack on #6438(1N4007)diode to C54 and C55.
7	24-Feb-15	V05	8760	via holes moved near J3A
8	.	.	8703	R63-R66, and ZD14-ZD17 added to relay control
9	.	.	.	PC#8701 and PC#8734 Implemented on Board.
10	09-APR-2015	.	8767	PC#8767:R101A and R101B changed from 220K to 100K (YS#6120).
11	07-Jul-2015	V06	8768	Add bottom solder mask on #3820 GG
12	.	.	.	Move W9 away from K2
13

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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LEAD / PIN REFERENCE



THIS SHEET CONTAINS EXTRA INFORMATION ABOUT THE DESIGN AS WELL AS A HISTORY TABLE.

PCB ASSEMBLY DOCUMENTATION

SPECIAL PRODUCTION NOTES

M1530V05 PRODUCTION NOTES

- 1. RTV MUST BE ADDED TO THE FOLLOWING COMPONENTS
C2, C28, C29, C30, C32, C33, C34, C35, C36, C37, C38, C39, C43, C44, C45, C49,
C50, C51, C52, C56, C57, BETWEEN C1 AND C3, BETWEEN L1A
AND J3A, BETWEEN L1B AND J3B.
- 2. MOUNT BRIDGE RECTIFIER HEATISINK BEFORE WAVE SOLDER.
- 3. ADD TWO #8663 SPACERS UNDER EACH #6931 AND #6932 TRANSISTORS.
- 4. CLIP LEADS SHORT ON ALL POWER TRANSISTORS AND DIODES.
- 5. ADD JUST A VERY SMALL AMOUNT OF RTV UNDER STONE RESISTORS.
- 6. DO NOT ADD RTV IN BETWEEN POWER SUPPLY CAPS.
- 7. BREAK THE CHASSIS CONNECTION OF J2 AND J3 AS SHOWN:



THIS CONNECTION
MUST BE BROKEN
HERE

THIS SHEET CONTAINS SPECIAL PRODUCTION NOTES AND A LIST OF PCB HARDWARE PARTS REQUIRED FOR THE BUILD.



Section: **Assembly Documentation**

Product(s): **AP4K**

PCB#: M1530

Rev#: V06

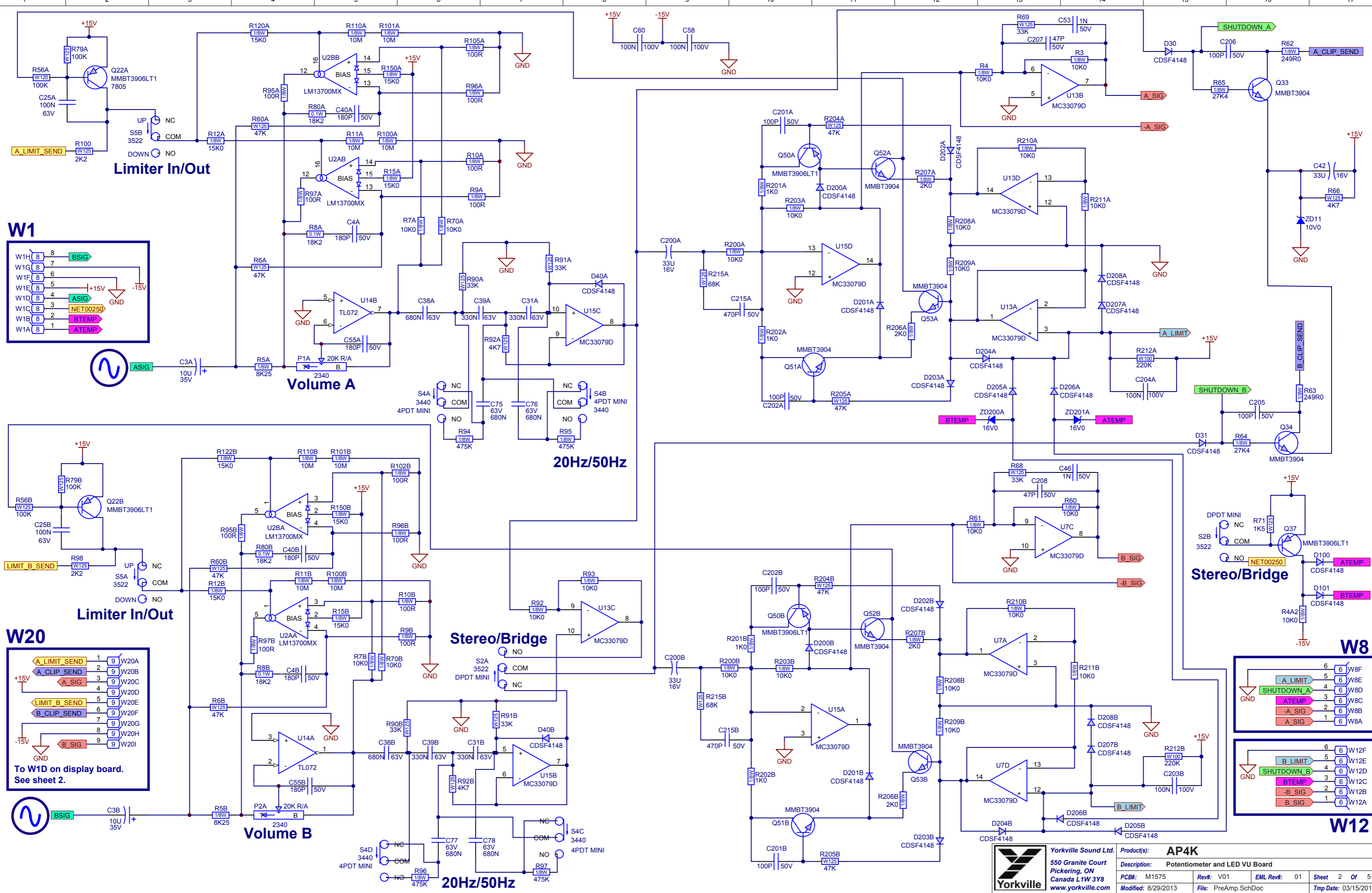
EML Rev#: 01

Sheet 1 Of *

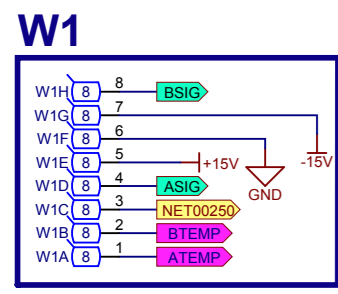
Modified: 7/9/2015

File: Assembly.SchDoc

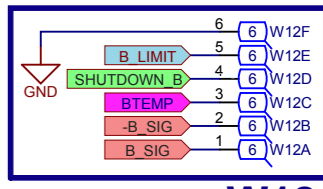
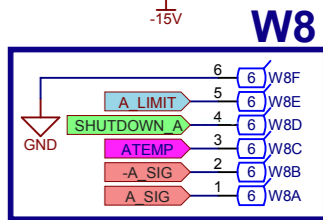
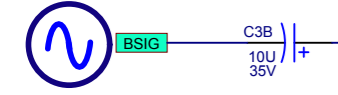
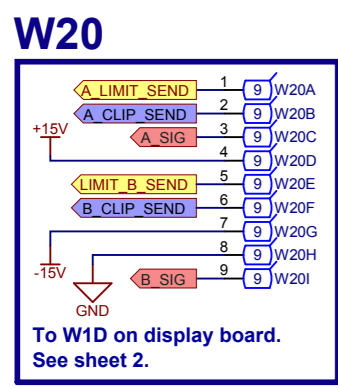
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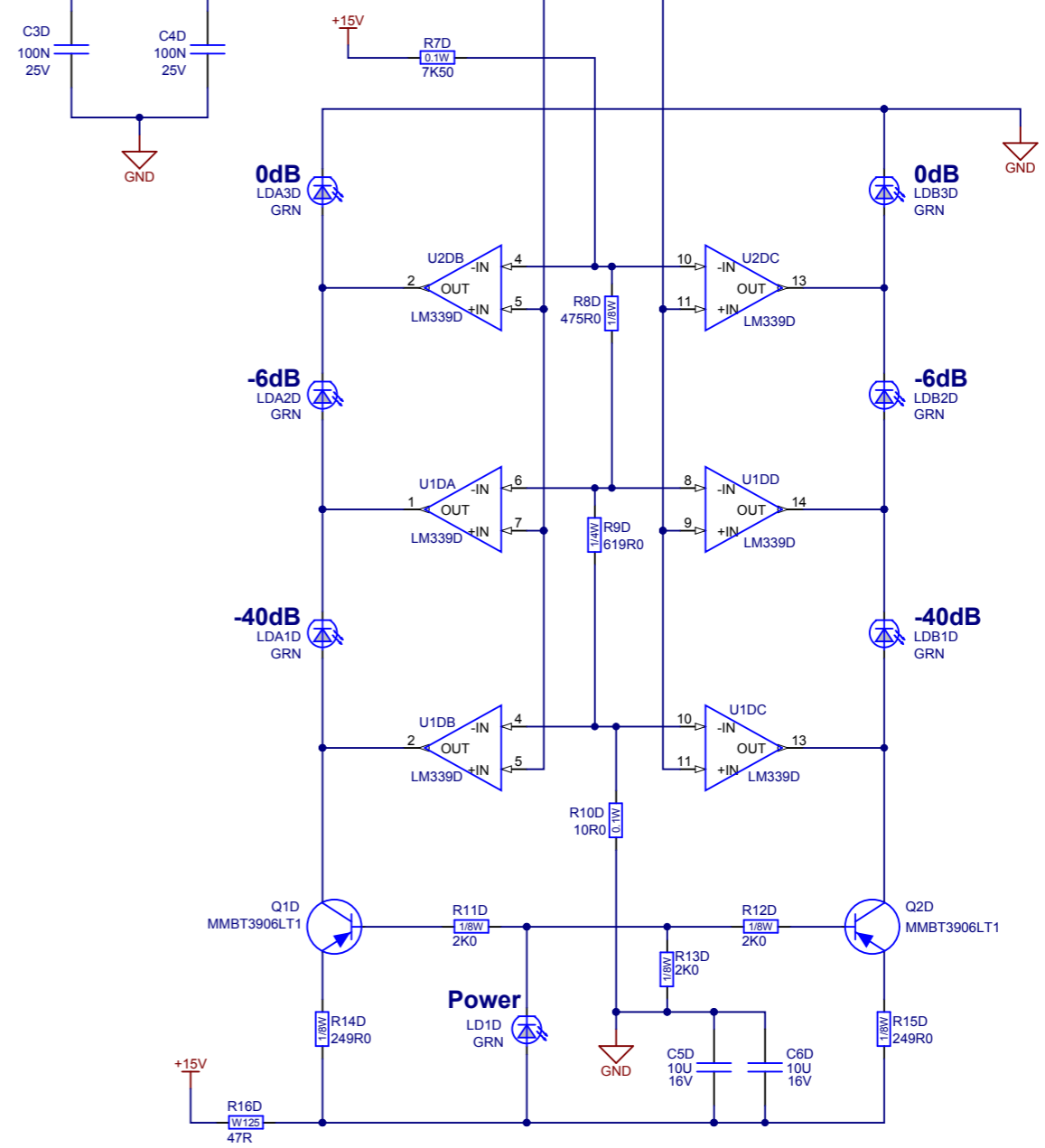
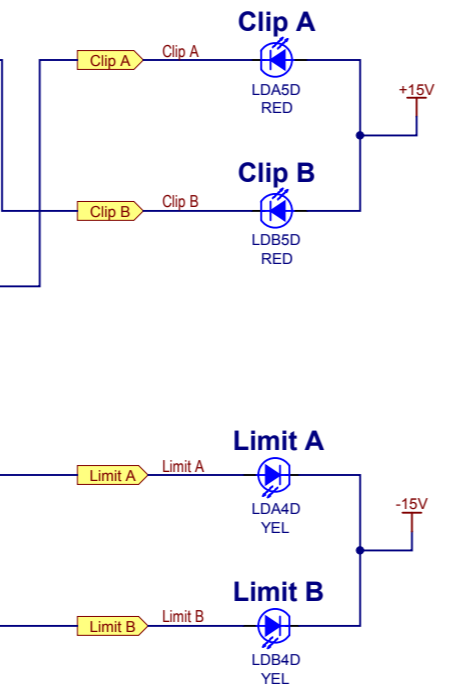
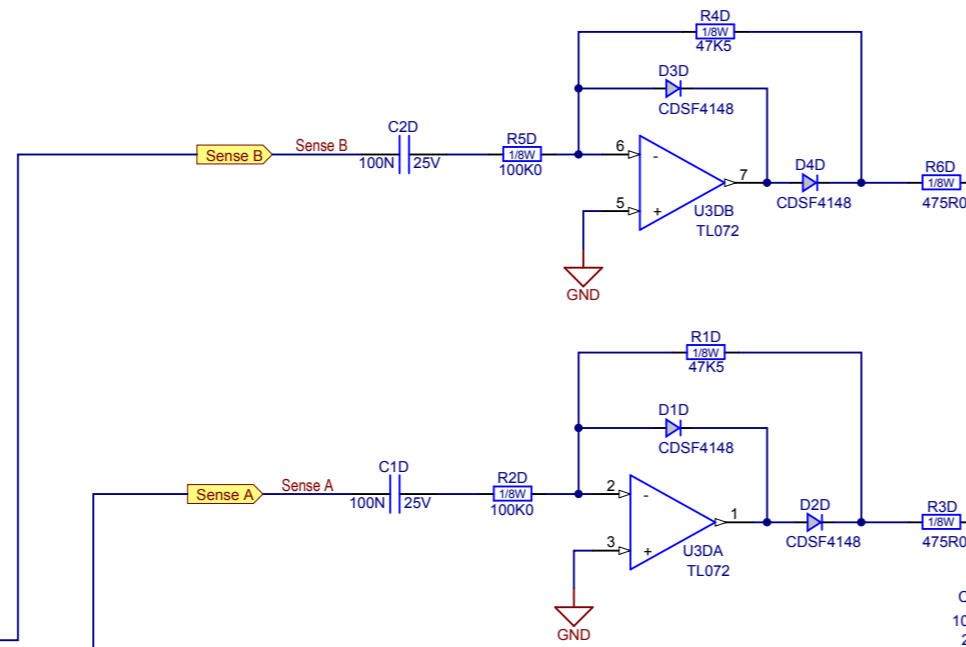
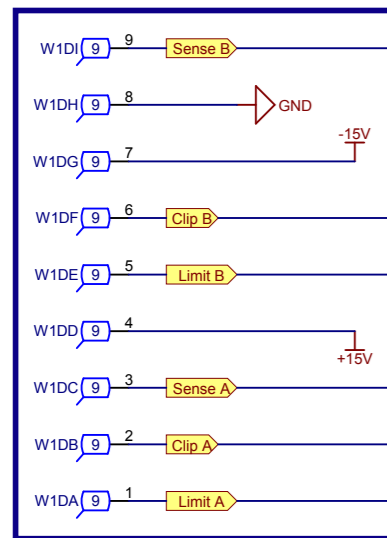
Limiter In/Out



Limiter In/Out



W1D



PCB ASSEMBLY DOCUMENTATION

SPECIAL PRODUCTION NOTES

1. PCBSA: Bend C200A and C200B down.
2. PCBSA: Do not insert W1D.
3. PCBSA: After wave soldering, break out display board and solder onto pot board.



Section: Assembly Documentation			
Product(s): AP4K			
PCB#: M1575	Rev#: V01	EML Rev#: 01	Sheet 4 Of 5
Modified: 8/29/2013	File: Assembly.SchDoc	Tmp Date: 03/15/2013	

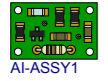
PANEL PARTS



Panel Fiducials

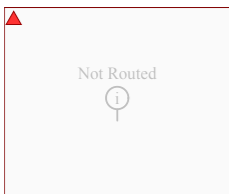
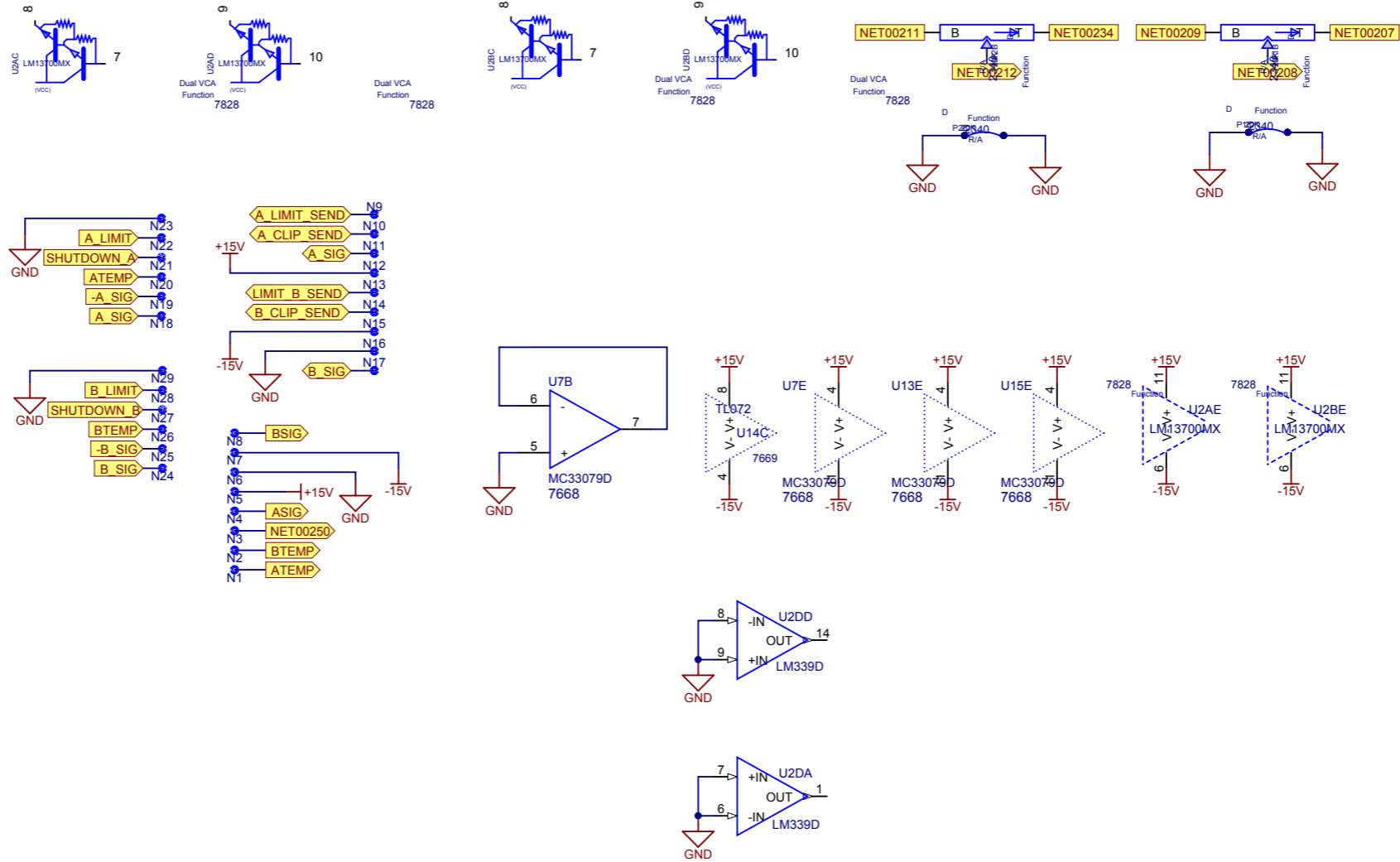


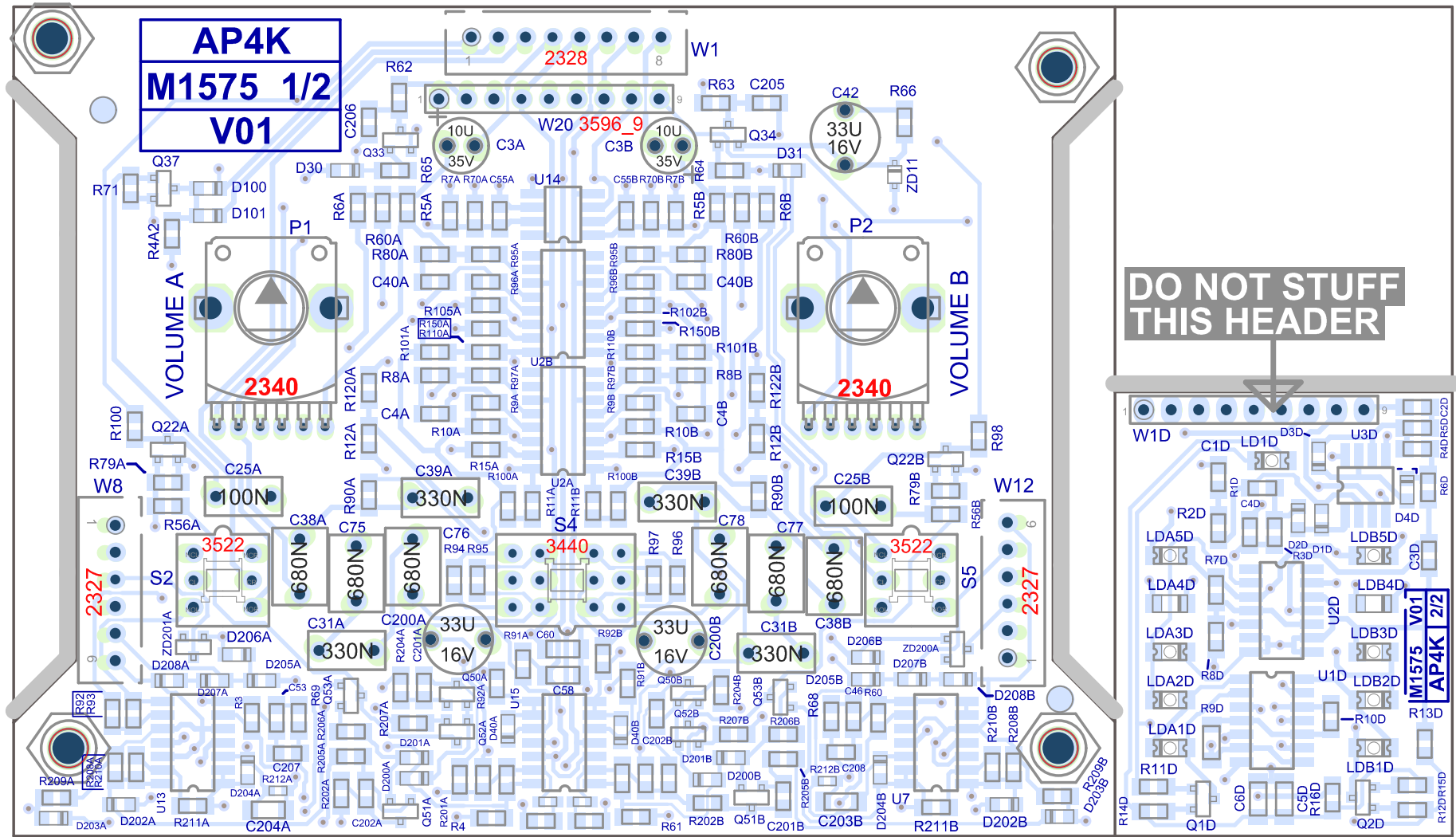
Mounting Holes



AI-ASSY1

PCB1





AP4K
M1575 1/2
V01

DO NOT STUFF THIS HEADER

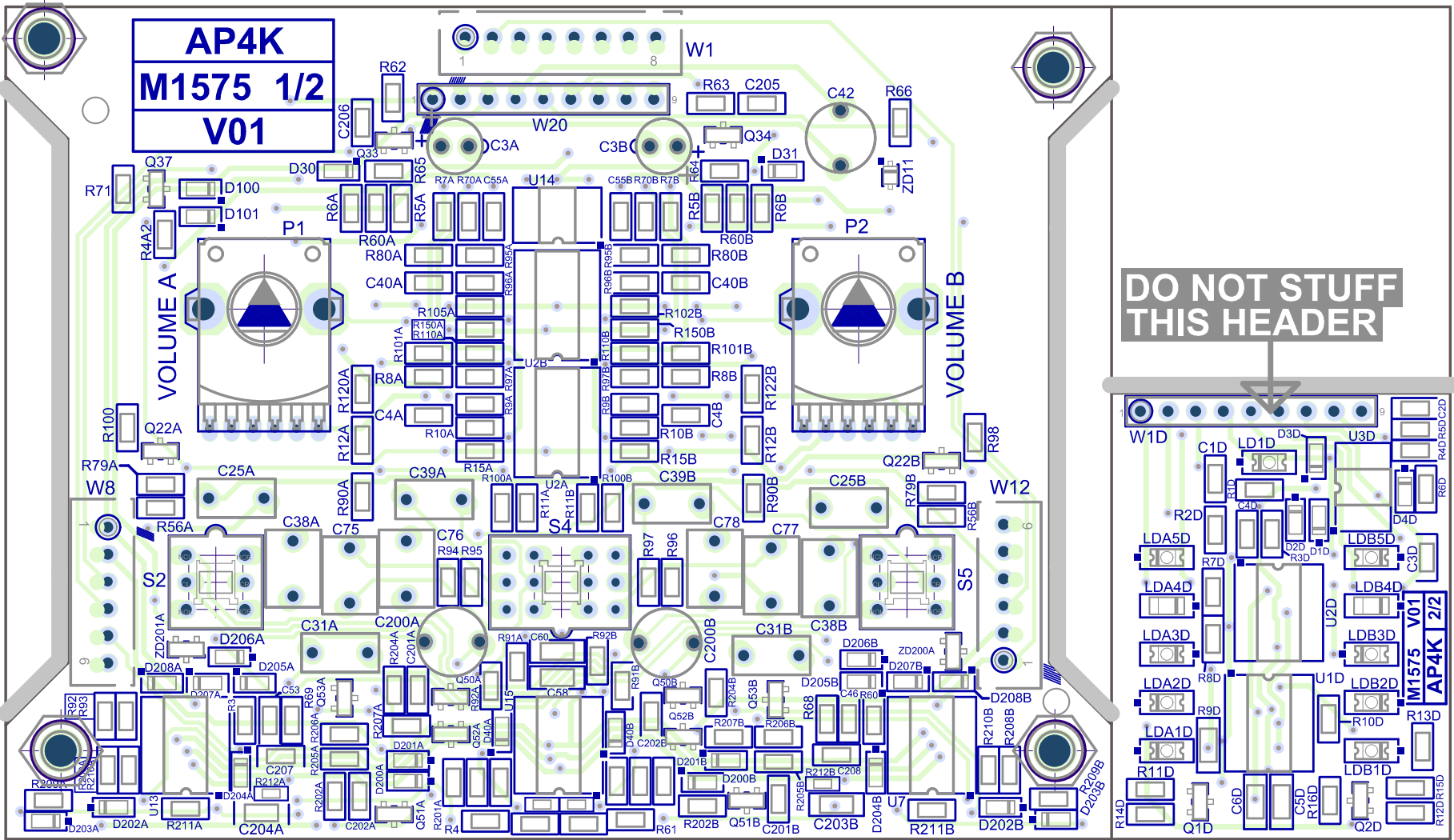
M1575 V01
AP4K 1/2

PANEL INFO

BlankSize - 16425x7030
 # of boards per panel: 6
 Step & Repeat: X3@5.225Y2@3.015




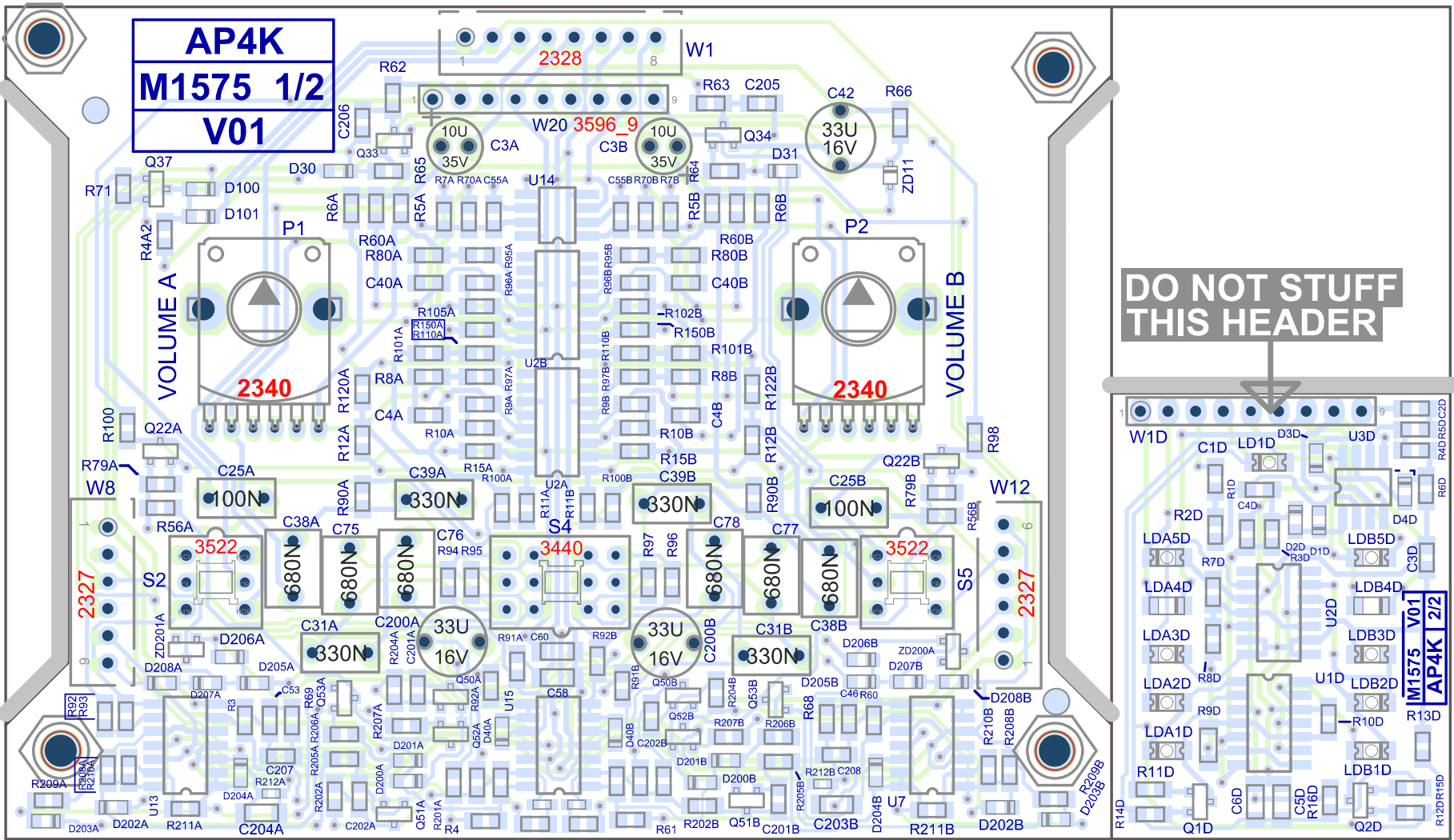
DESIGNED BY Ray Himbeault	PRODUCT AP4K	REV 01
PCB DESIGNED BY Peter Till	Potentiometer and LED VU Board	
CONTACT Yorkville Sound Ltd. 850 Granite Court Pickering, ON L1W3Y8 Canada	BOARD NO. M1575	REV V01
FILE NAME: M1575.PcbDoc	DATE: 2017-02-01	TEMPLATE REV DATE: 03/15/2013



PANEL INFO

BlankSize - 16425x7030
 # of boards per panel: 6
 Step & Repeat: X3@5.225Y2@3.015

	DESIGNER: Ray Himbeault PCB DESIGNER: Peter Till CONTACT: Yorkville Sound Ltd. 850 Granite Court Pickering, ON L1W3Y8 Canada	PRODUCT: AP4K Potentiometer and LED VU Board	BOARD NO: M1575 REV: V01 FILE NAME: M1575.PcbDoc	DATE: 2017-02-01 TEMPLATE REV DATE: 03/15/2013
	BAL. REV: 01			



AP4K
M1575 1/2
V01

DO NOT STUFF THIS HEADER

M1575 V01
AP4K 1/2

PANEL INFO

BlankSize - 16425x7030
 # of boards per panel: 6
 Step & Repeat: X3@5.225Y2@3.015



DESIGNED BY Ray Himbeault	PRODUCT AP4K	REV 01
PCB DESIGNER Peter Till	Potentiometer and LED VU Board	
CONTACT Yorkville Sound Ltd. 850 Granite Court Pickering, ON L1W3Y8 Canada	BOARD NO. M1575	REV V01
FILE NAME M1575.PcbDoc	DATE 2017-02-01	TEMPLATE REV DATE 03/15/2013

PCB ASSEMBLY DOCUMENTATION

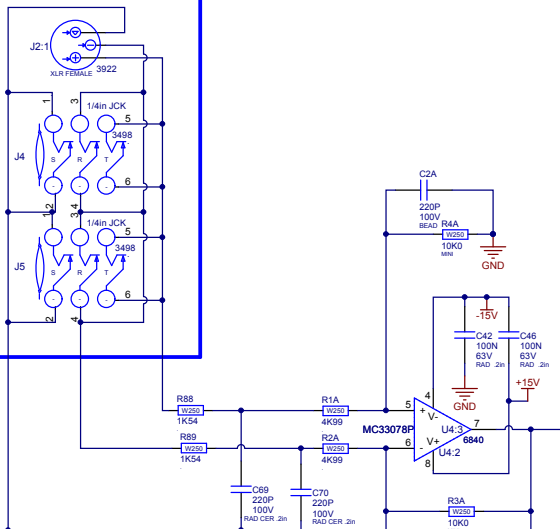
SPECIAL PRODUCTION NOTES

1. PCBSA: Bend C200A and C200B down.
2. PCBSA: Do not insert W1D.
3. PCBSA: After wave soldering, break out display board and solder onto pot board.

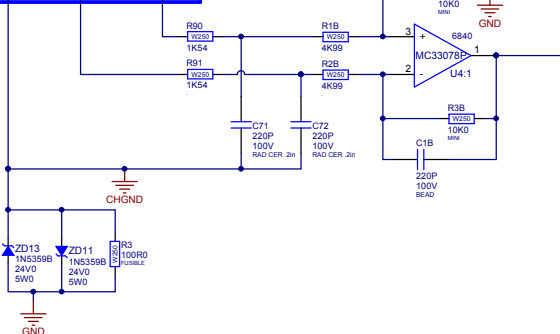


Section: Assembly Documentation			
Product(s): AP4K			
PCB#: M1575	Rev#: V01	EML Rev#: 01	Sheet 4 Of 5
Modified: 2017-02-01	File: Assembly.SchDoc	Tmp Date: 03/15/2013	

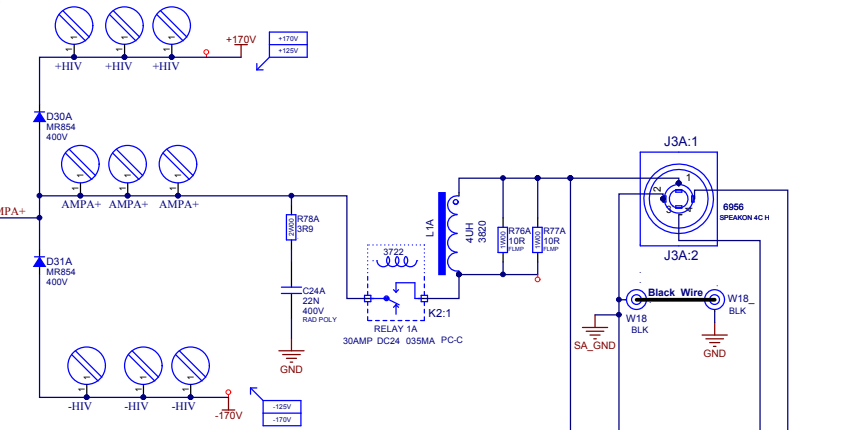
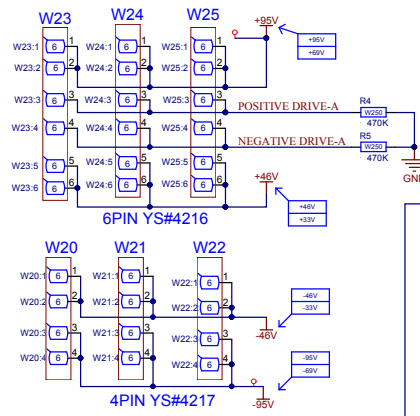
INPUT A and BRIDGED



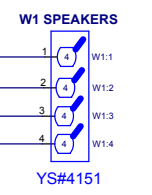
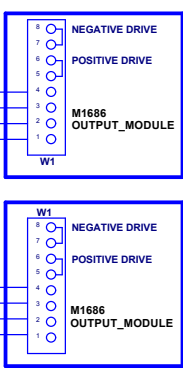
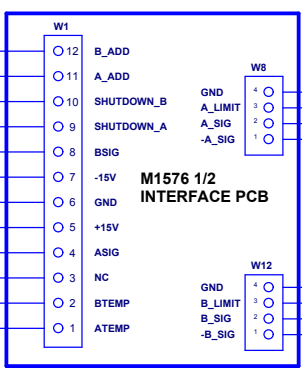
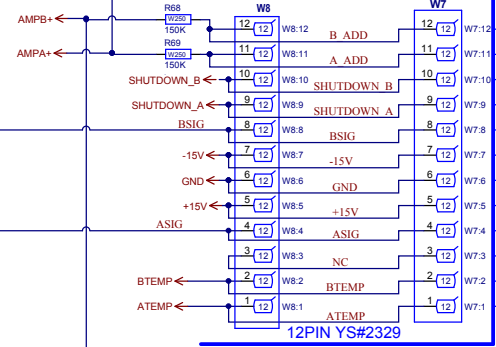
INPUT B



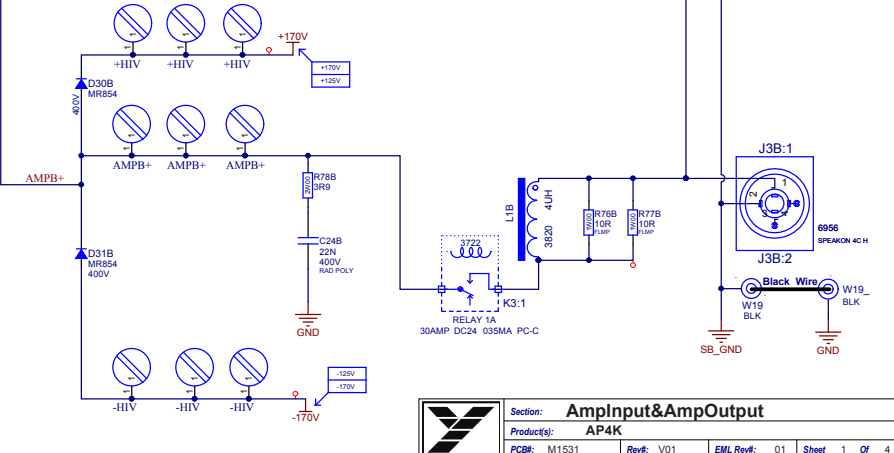
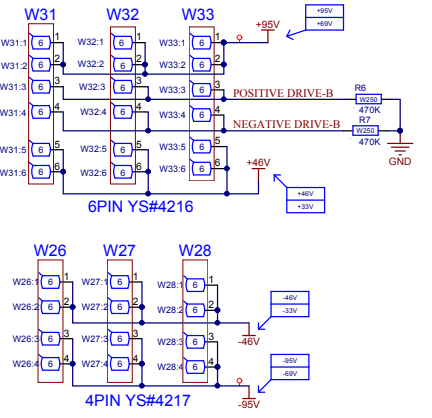
AMP A OUTPUT MODULE CONNECTORS

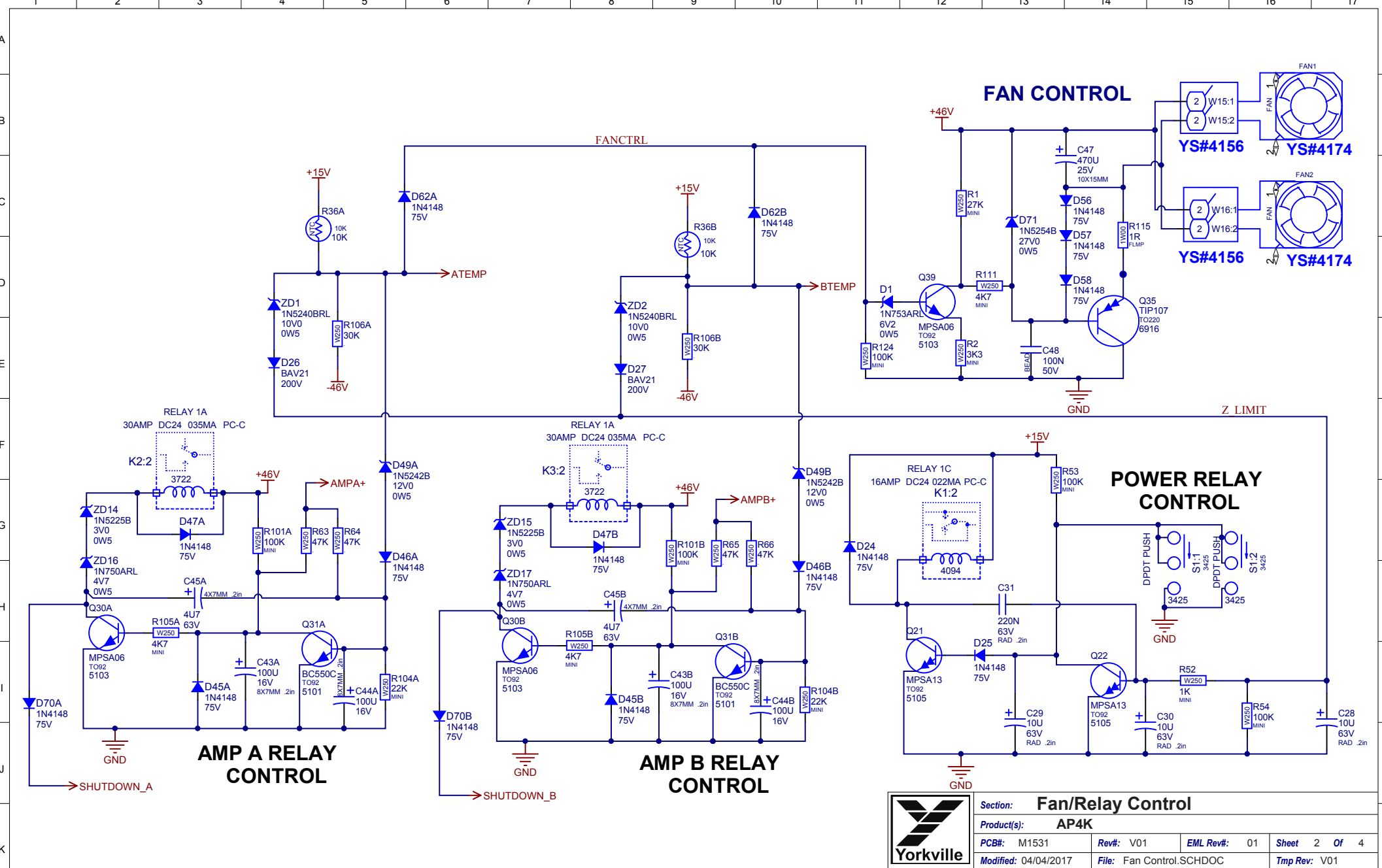


M1531 1/1 POWER SUPPLY PCB



AMP B OUTPUT MODULE CONNECTORS

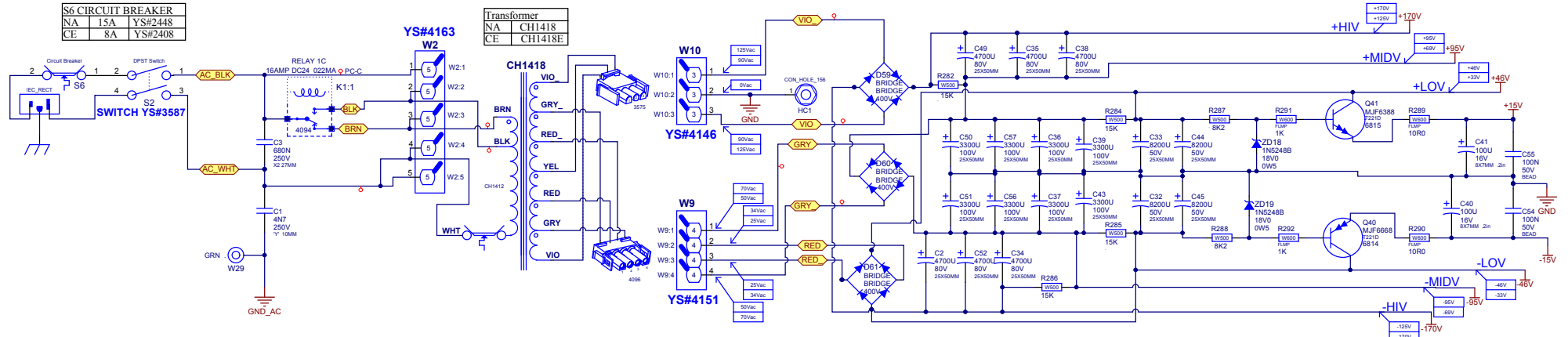




Section: Fan/Relay Control			
Product(s): AP4K			
PCB#: M1531	Rev#: V01	EML Rev#: 01	Sheet 2 Of 4
Modified: 04/04/2017	File: Fan Control.SCHDOC	Tmp Rev: V01	

S6 CIRCUIT BREAKER		
NA	15A	YS#2448
CE	8A	YS#2408

Transformer	
NA	CH1418
CE	CH1418E



Voltage box
 This voltage is with S1 in 4 ohm position
 This voltage is with S1 in 2 ohm position

	Section: Power Supply
	Product(s): AP4K
	PCB#: M1531 Rev: V01 EML Rev: 01 Sheet 3 Of 4
	Modified: 04/04/2017 File: Power Supply.SCHDOC Temp Rev: V01

M1531V01 DESIGN HISTORY AND INFORMATION

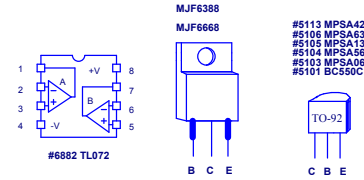
CHANGE HISTORY

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1	MARCH-23-2017	V01	.	RELEASED FOR PRODUCTION
2
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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LEAD / PIN REFERENCE

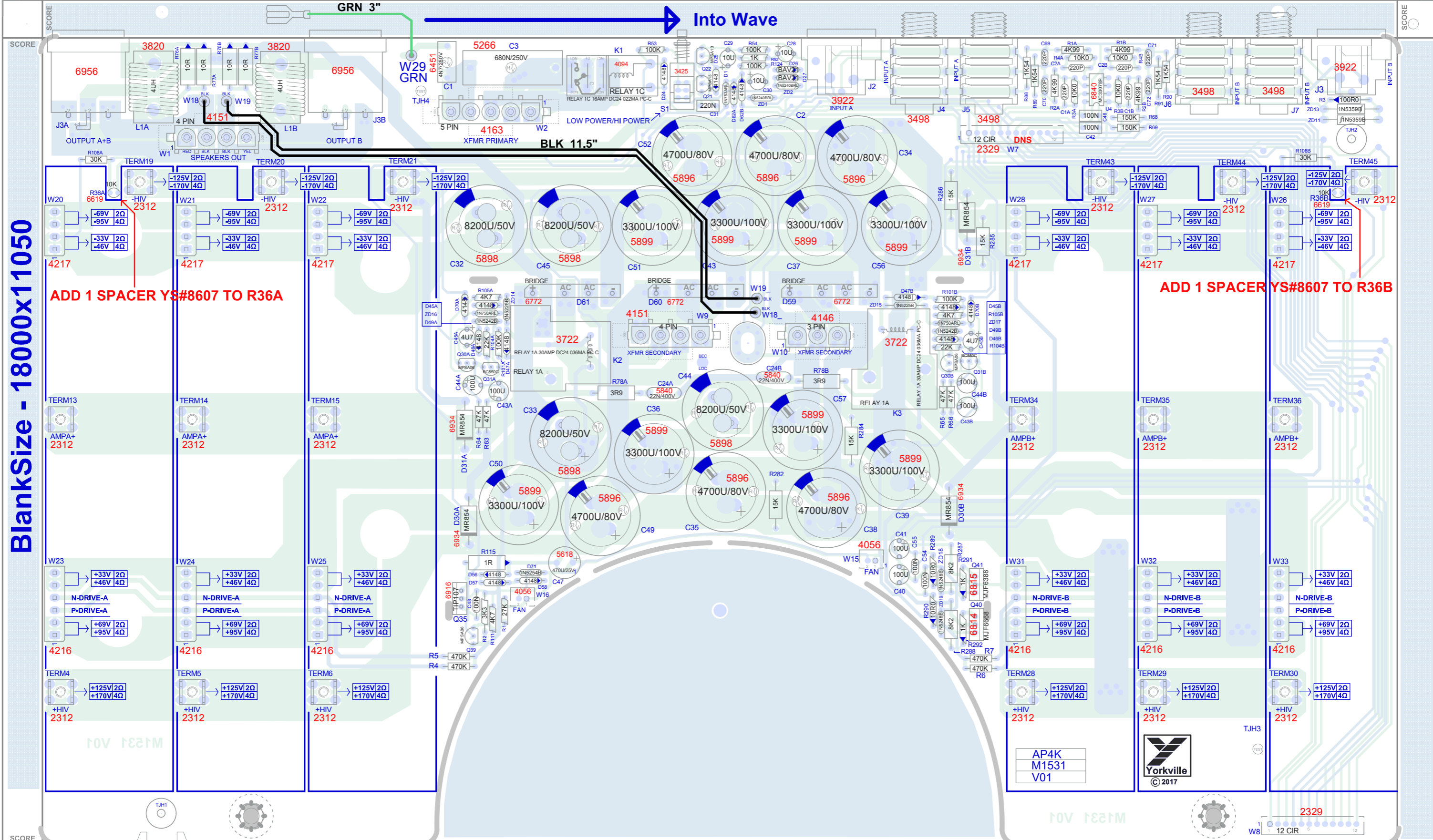


#5113 MPSA42
 #5108 MPSA63
 #5105 MPSA13
 #5104 MPSA56
 #5103 MPSA06
 #5101 BC550C

THIS SHEET CONTAINS EXTRA INFORMATION ABOUT THE DESIGN AS WELL AS A HISTORY TABLE.

BlankSize - 18000x11050

Into Wave



ADD 1 SPACER YS#8607 TO R36A

ADD 1 SPACER YS#8607 TO R36B

VCD

M1531 V01

AP4K



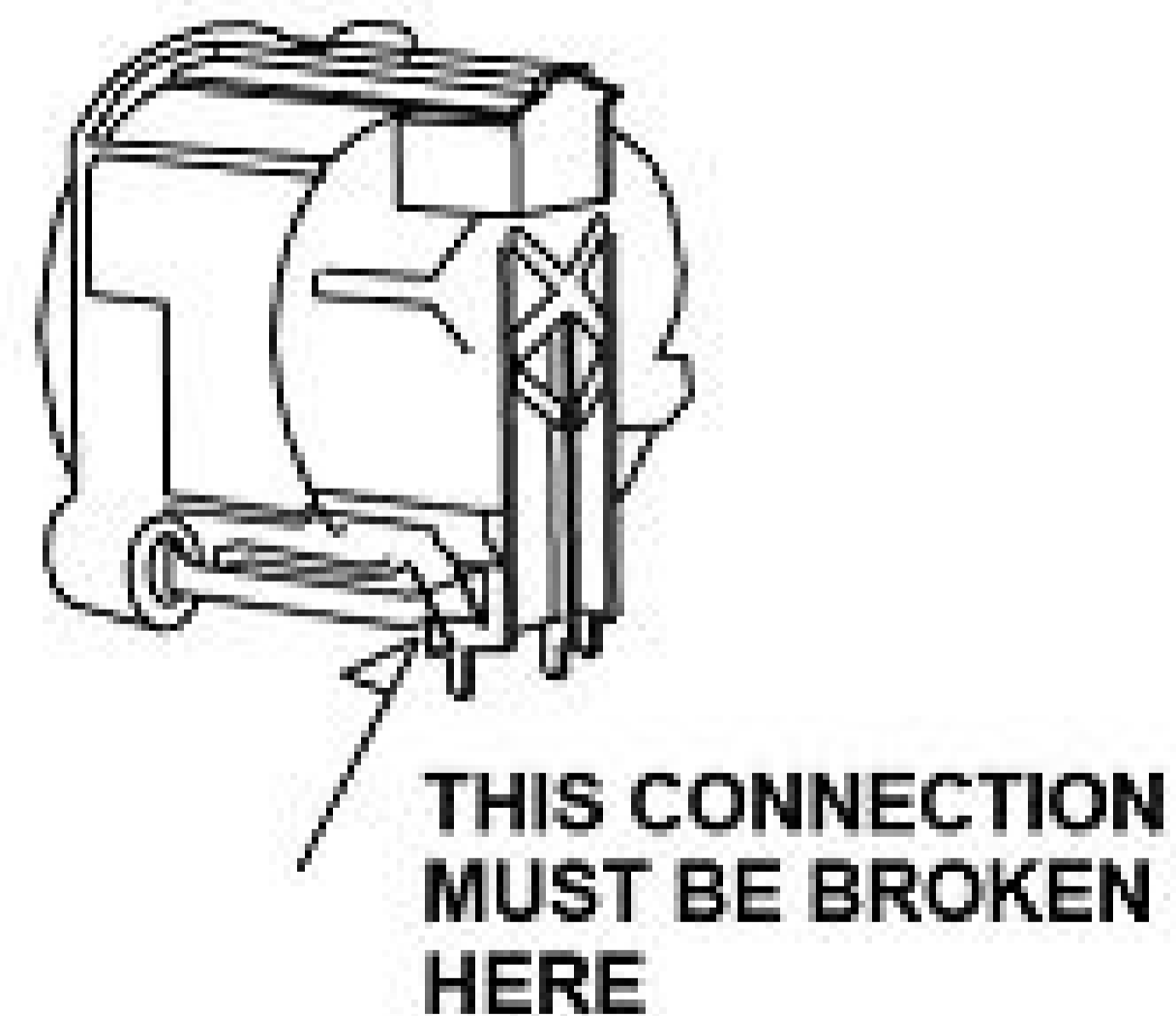
© 2017

PCB ASSEMBLY DOCUMENTATION

SPECIAL PRODUCTION NOTES

M1531V01 PRODUCTION NOTES

1. RTV MUST BE ADDED TO THE FOLLOWING COMPONENTS
C2, C28, C29, C30, C32, C33, C34, C35, C36, C37, C38, C39, C43, C44, C45, C49,
C50, C51, C52, C56, C57, BETWEEN C1 AND C3, BETWEEN L1A
AND J3A, BETWEEN L1B AND J3B.
2. ADD SPACER YS#8607 ON 1 LEAD OF THERMISTOR R36A AND R36B.
3. MOUNT BRIDGE RECTIFIER HEATISINK BEFORE WAVE SOLDER.
4. CLIP LEADS SHORT ON ALL POWER TRANSISTORS ,CAPACITORS AND DIODES.
5. DO NOT ADD RTV IN BETWEEN POWER SUPPLY CAPS.
6. DO NOT STUFF W7 XH-HEADER .
7. BREAK THE CHASSIS CONNECTION OF J2 AND J3 AS SHOWN:



M1531V01 DESIGN HISTORY AND INFORMATION

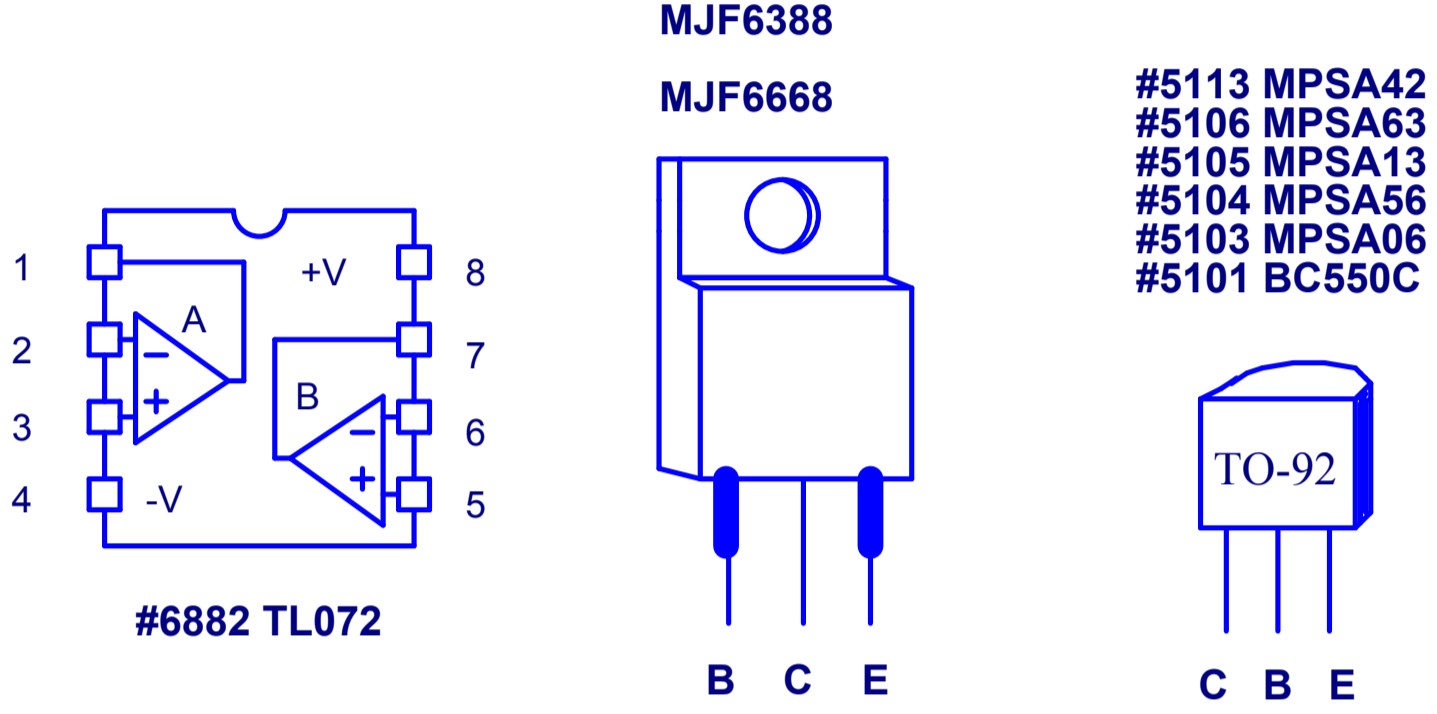
CHANGE HISTORY

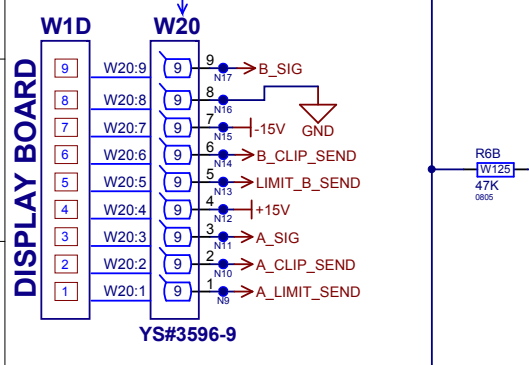
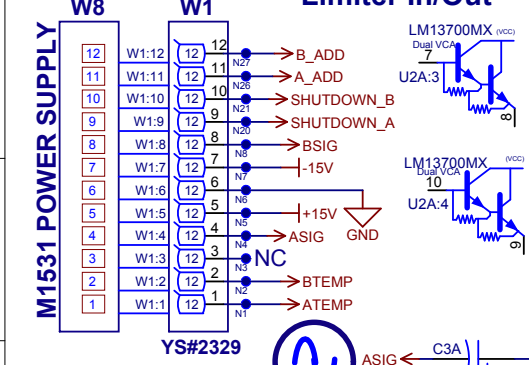
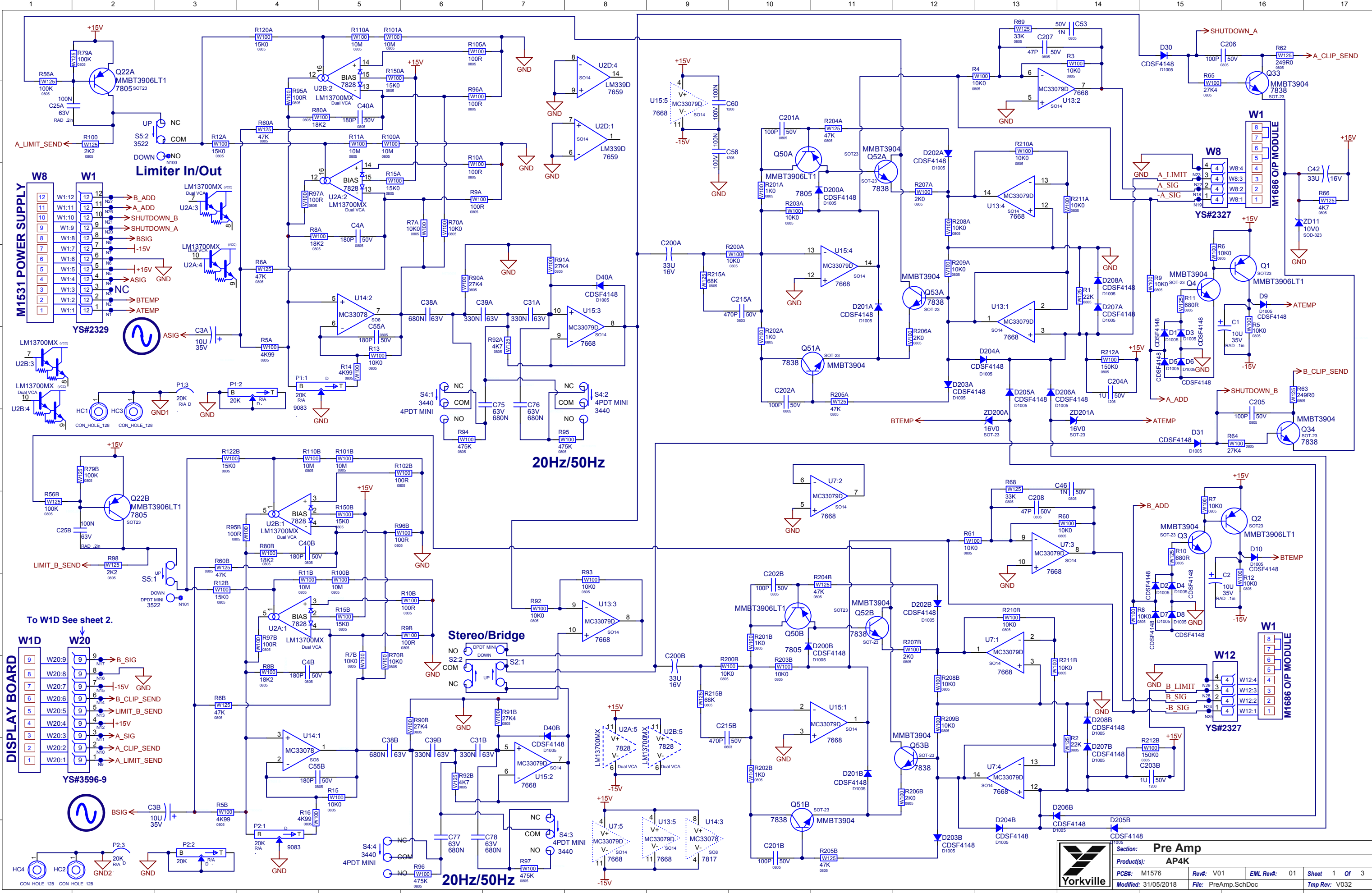
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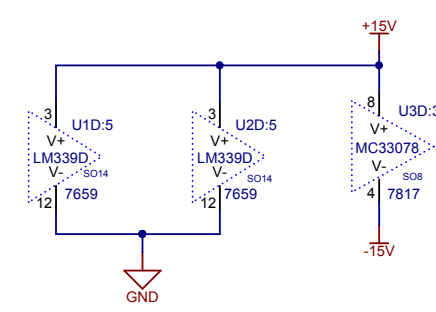
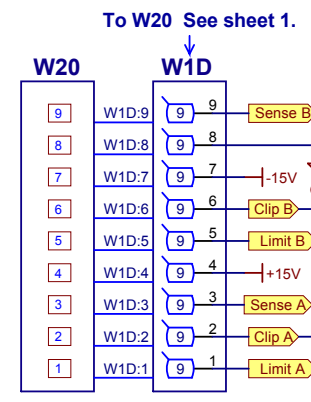
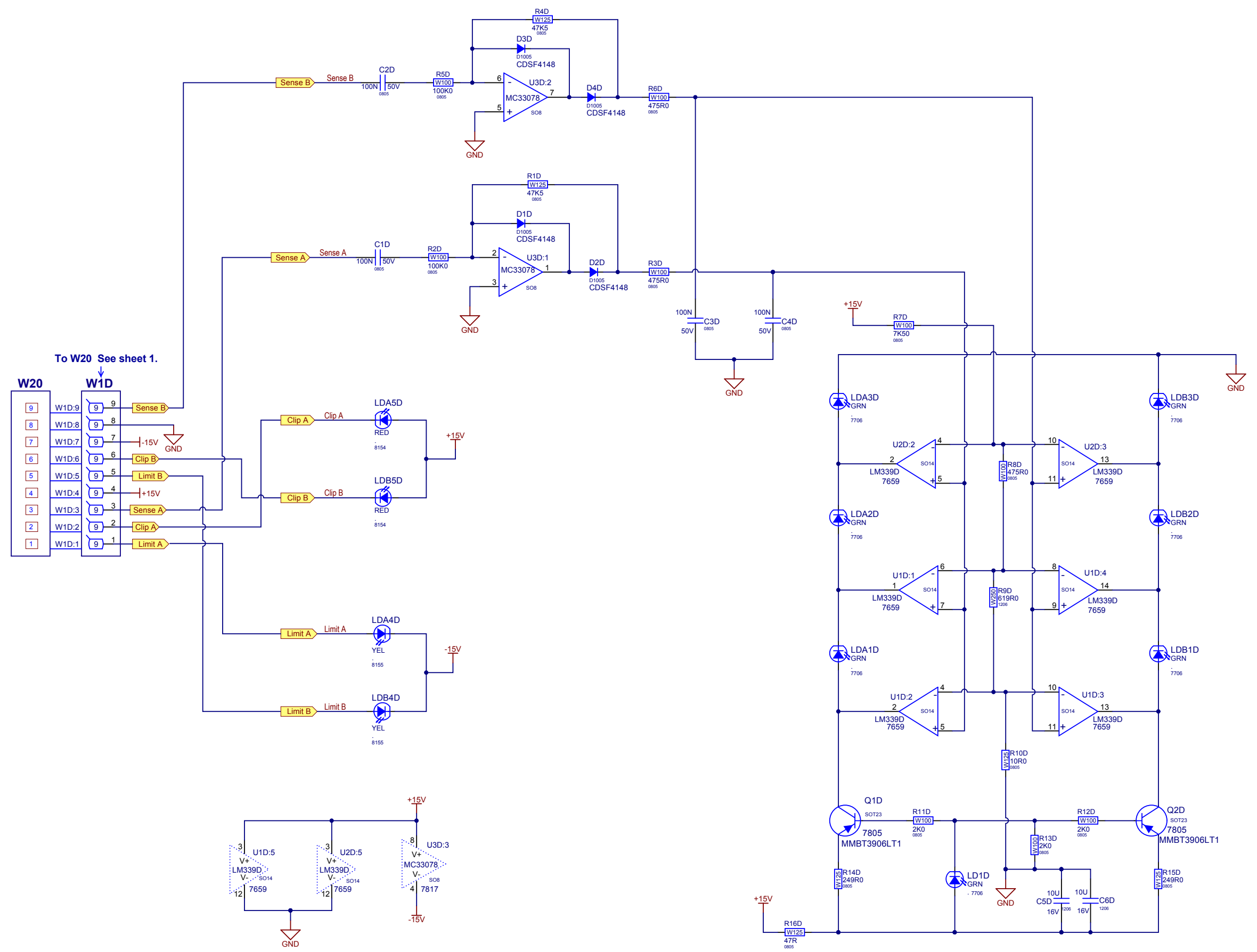
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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LEAD / PIN REFERENCE







M1576V01 DESIGN HISTORY AND INFORMATION

CHANGE HISTORY

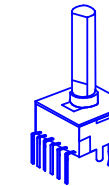
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2	MAY-31-2018	V01	9241	R90A,R91A,R90B,R91B 33K REPLACED WITH 27K4 #7636
3	.	.	.	R6,R7 1K5 REPLACED WITH 10K0 #7625
4	.	.	.	C203B,C204A 100N REPLACED WITH 1U/50V #7734
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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POTENTIOMETERS AND KNOBS

POTENTIOMETERS/SWITCHES AND KNOBS				
REF	FUNCTION	POT/SW YS#	STYLE	KNOB#
P1	VOLUME A	9083	P34	10021
P2	VOLUME B	9083	P34	10021
S2	Stereo/Bridge	3522	.	8633
S4	20Hz/50Hz	3440	.	8633
S5	Limiter In/Out	3522	.	8633
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"STYLE_P34"

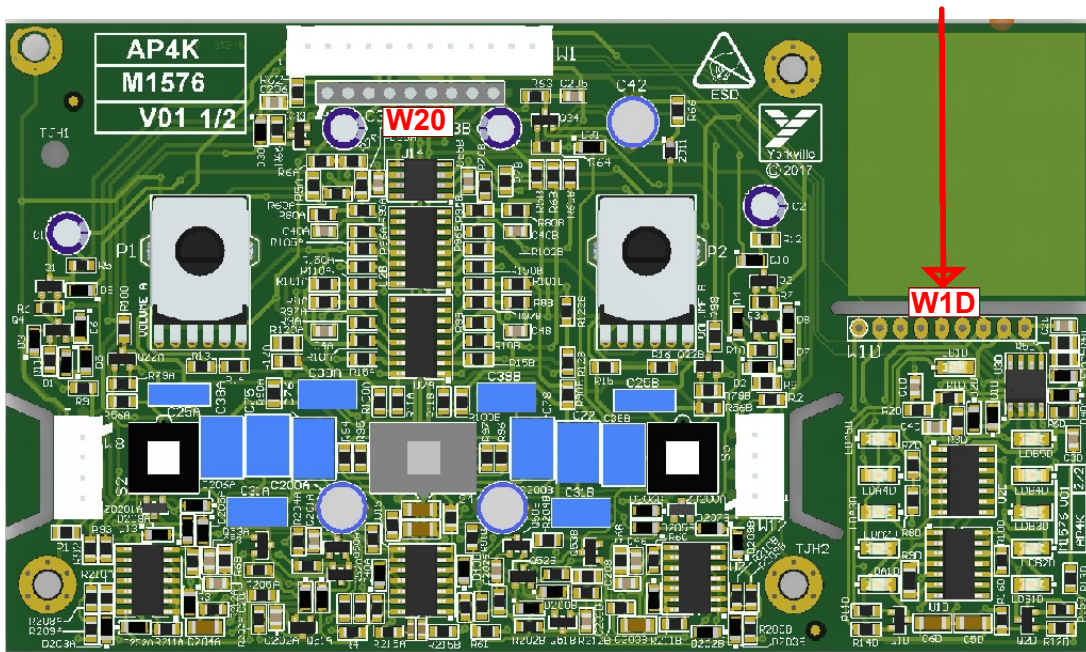
THIS SHEET CONTAINS EXTRA INFORMATION ABOUT THE DESIGN AS WELL AS A HISTORY TABLE.

PCB ASSEMBLY DOCUMENTATION

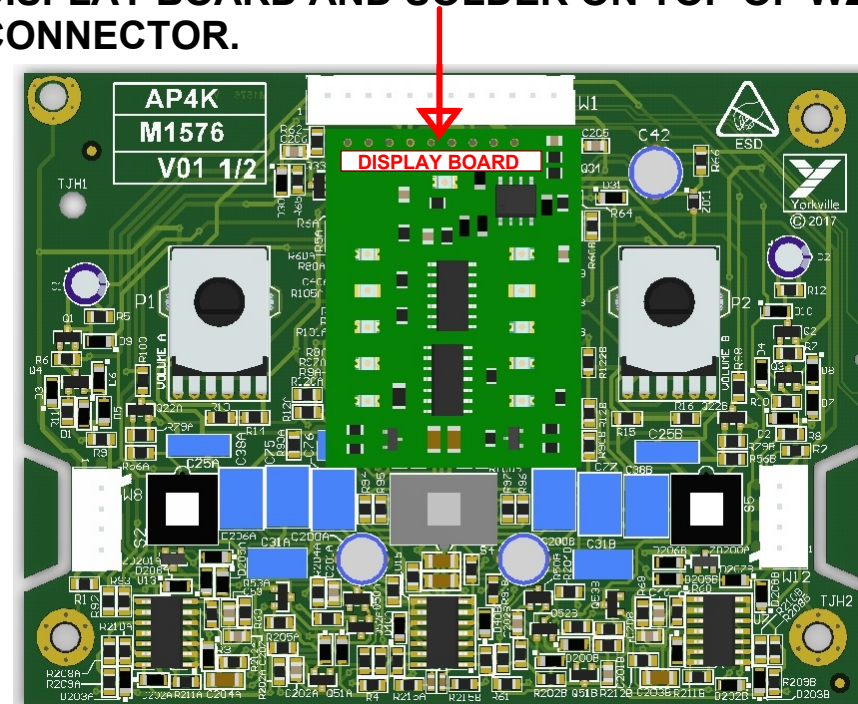
SPECIAL PRODUCTION NOTES

M1576V01

STEP 1 APPLY SOLDER MASKING AGENT TO BOTTOM PADS OF W1D BEFORE WAVE SOLDERING.



STEP 2 AFTER WAVE SOLDERING BREAK OUT DISPLAY BOARD AND SOLDER ON TOP OF W20 CONNECTOR.



M1576V01 DESIGN HISTORY AND INFORMATION

CHANGE HISTORY

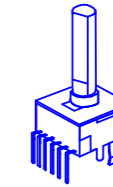
#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1	MARCH-23-2017	V01	.	RELEASED FOR PRODUCTION
2	MAY-31-2018	V01	9241	R90A,R91A,R90B,R91B 33K REPLACED WITH 27K4 #7636
3	.	.	.	R6,R7 1K5 REPLACED WITH 10K0 #7625
4	.	.	.	C203B,C204A 100N REPLACED WITH 1U/50V #7734
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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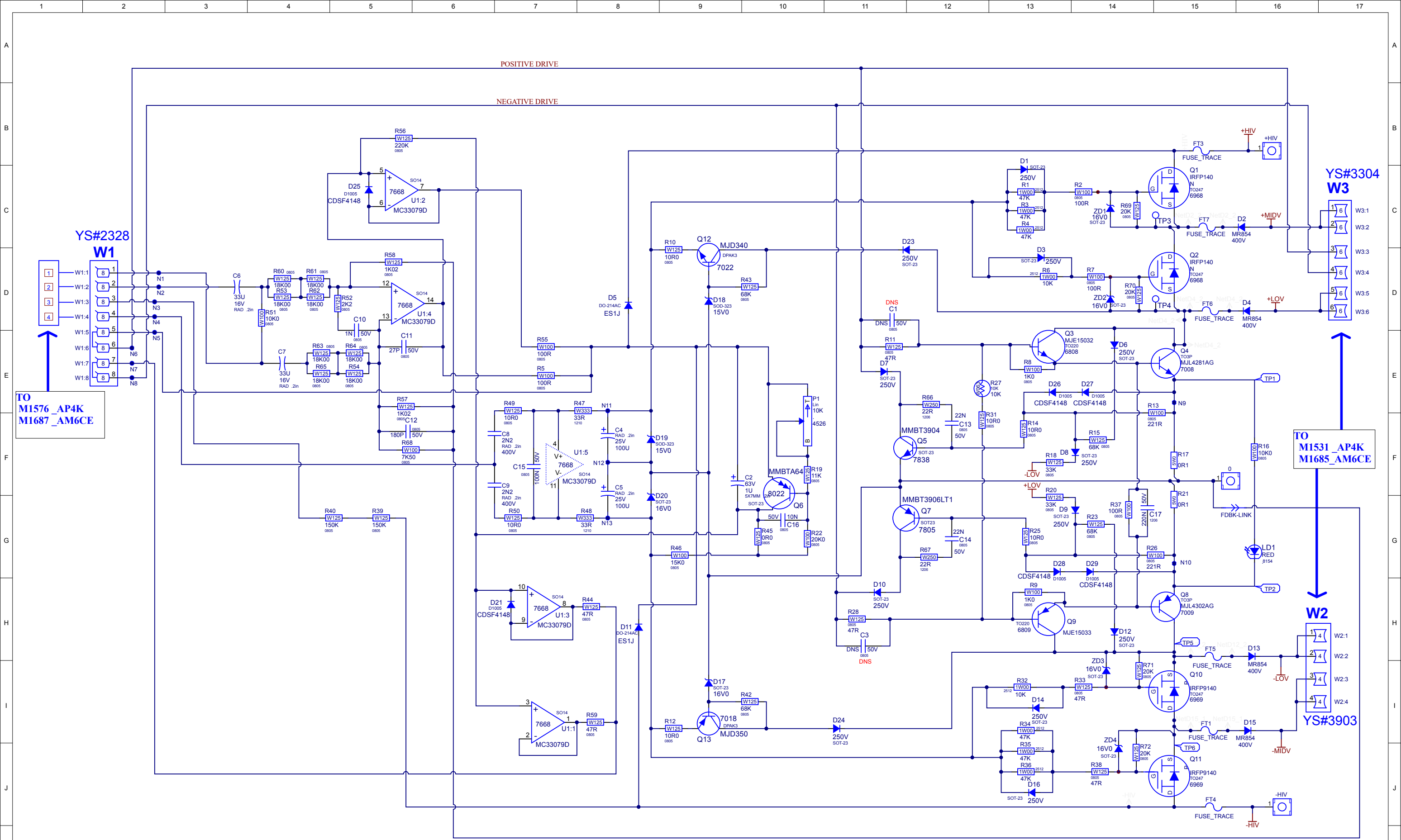
#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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POTENTIOMETERS AND KNOBS

POTENTIOMETERS/SWITCHES AND KNOBS				
REF	FUNCTION	POT/SW YS#	STYLE	KNOB#
P1	VOLUME A	9083	P34	10021
P2	VOLUME B	9083	P34	10021
S2	Stereo/Bridge	3522	.	8633
S4	20Hz/50Hz	3440	.	8633
S5	Limiter In/Out	3522	.	8633
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"STYLE_P34"



YS#2328
W1

TO
M1576_AP4K
M1687_AM6CE

YS#3304
W3

TO
M1531_AP4K
M1685_AM6CE

W2

YS#3903

*** FOR THE SUPPLY VOLTAGE HIV/MIDV/LOV REFER TO POWER SUPPLY SCHEMATIC.**

SET BIAS 5 mV COLD AMP BETWEEN TP1 AND TP2.



Section:	Output Module		
Product(s):	AM6CE / AP4K		
PCB(s):	M1686	Rev#: V02	EML Rev#: 01
Modified:	2018-11-26	File:	Output Module.SchDoc
Sheet	1	Of	2
Tmp Rev:	V032		

M1686

DESIGN HISTORY AND INFORMATION

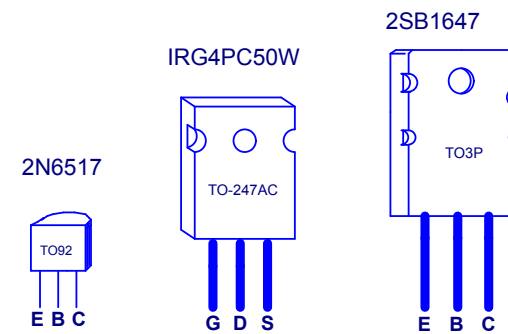
CHANGE HISTORY

#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
1	23-MARCH-2017	V01	.	RELEASED FOR PRODUCTION
2	31-MAY2018	V01	9241	Q1,Q2 YS#6931 REPLACED WITH YS#6968
3	.	.	.	Q10,Q11 YS#6932 REPLACED WITH YS#6969
4	23-NOV-2018	V02	9313	REMOVED COPPER FROM Q1 PIN AREA TO PREVENT SHORTING TO HEATSINK
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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#	DATE	VER#	PC#	DESCRIPTION OF CHANGE
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PINOUT DIAGRAMS

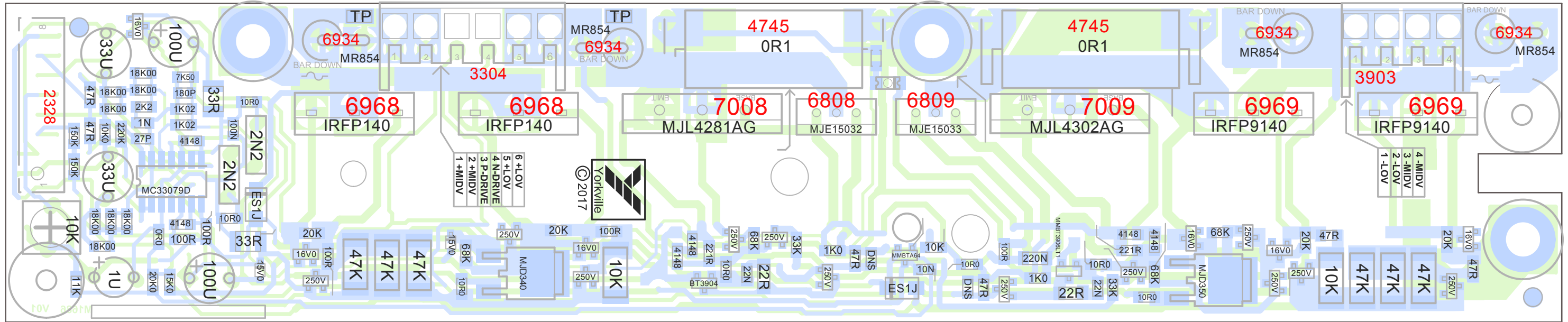


THIS SHEET CONTAINS A CHANGE HISTORY LOG, A LIST OF THE POTS KNOBS AND A LEADS PINS REFERENCE SECTION.



*
 IF ONE OF THESE TRACES OPEN
 REPLACE BOARD WITH M1686 ASSEMBLY.
 FT1, FT3 TOP LAYER
 FT4, FT5, FT6, FT7 BOTTOM LAYER

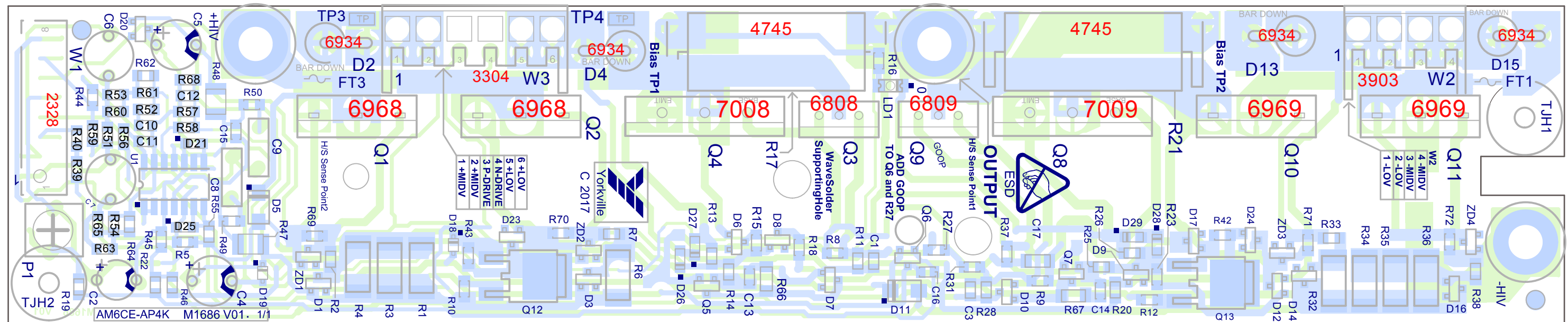
Components Value



AM6CE-AP4K M1686 V01

DO NOT PUT RTV ON R17 AND R21 RESISTORS.

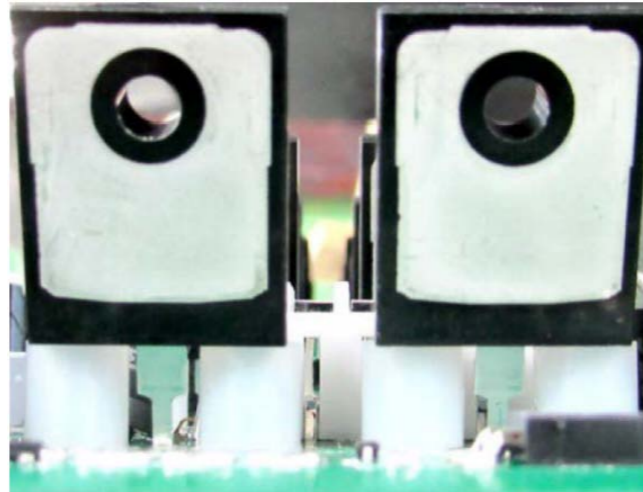
Designators



M1686 SPECIAL PRODUCTION NOTES

PCBSA :

- 1 _USE JIG TO TRIM TRANSISTORS. #6808 and #6809 (S)
#7008 and #7009 (L)
#6968 and #6969 (M)
- 2 _INSERT TWO SPACERS #8656 ON THE OUTSIDE PINS OF EACH OF THE FOLLOWING TRANSISTORS Q1,Q2,Q10 AND Q11.



3 _DO NOT PUT RTV ON R17 AND R21 5WATTS RESISTORS.

4 _USE TRANSISTORS SUPPORTING JIG BEFORE WAVE SOLDER.

5 _BEND LEADS ON HAND PLACED PARTS IN DIRECTION OF PAD AND CUT SHORT TO LESS THAN LENGTH OF PAD. NO EXCEPTIONS UNLESS APPROVED BY PRODUCTION ENGINEERING.

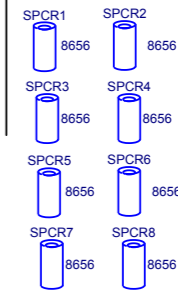
PCB HARDWARE

SCREWS AND BOLTS

NUTS

STANDOFFS

MISCELLANEOUS



Section: *Assembly Documentation*

Product(s): **AM6CE-AP4K**

PCB# M1686 Rev# V01 BOM Rev# BOMRevSheet 4 Of 5

Date Modified: 2018-11-28 Filename: Assembly.SchDoc

M1686

DESIGN HISTORY AND INFORMATION

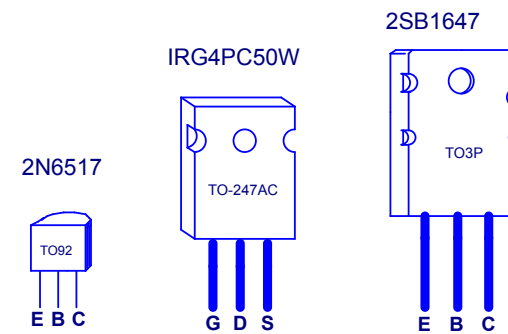
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PINOUT DIAGRAMS



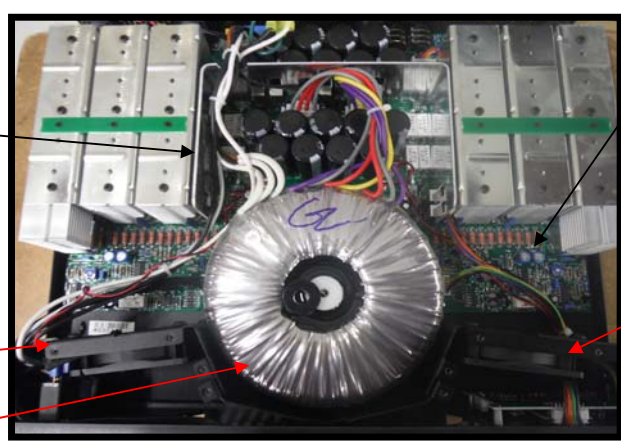
THIS SHEET CONTAINS A CHANGE HISTORY LOG, A LIST OF THE POTS KNOBS AND A LEADS PINS REFERENCE SECTION.





AP4K POWER AMPLIFIER

#	Part#	Description	Qty	#	Part#	Description	Qty
Labeled Components				Labeled Components			
1	M1530	AP4K 2X1800 WATT POWER AMP BOARD	1	16	9575	AP4K HEATSINK SMALL	4
2	M1575	AP4K INTERFACE/DISPLAY PCB	1	17	9576	AP4K HEATSINK LARGE	2
3	Z1562	AP4K FAN SHROUD	2	18	10021	AP SERIES ALU KNOB W SILVER STRIPE	2
4	Z1563	AP4K FRONT SEAL PLATE	1	19	3440	4PT MINI VERT ALT SWITCH	1
5	Z1558	AP4K FRONT LEXAN	1	20	3522	DPDT MINI PC VERT SNP ALT	2
6	Z9175	AP4K HANDLE PAINTING	1	21	6956	SPKON 4C PCB MT HORZ GRY	2
7	Z1561	AP4K COVER	1	22	Z1564	AP4K/AM5CE PWR HEATSPREADER	1
8	Z1560	AP4K CHASSIS	1	23	4124	SILPAD 1500ST 1.100 X0.820 BERQUIST	2
9	CH1418	XFMR:AP4K	1	24	4171	SILPAD 1500ST 6.200 X1.100 BERQUIST	6
10	2448	15.00 AMP CIRCUIT BREAKER	1	25	3426	8' 3/16 SJT AC LINE CORD REMOV-B-CSA	1
11	3410	RED:LEFT/BLACK:RIGHT BIND POST TPP5	1	26	3425	DPDT PUSH SW PCMT	1
12	3415	RED:RIGHT/BLACK:LEFT BIND POST TPP5	1	27	2340	20K 15C R/A 12MM DUAL 21DET	2
13	3645	RECEPTACLE:INLET	1	28	3498	1/4" JCK PCB MT HORZ	4
14	3587	DPST ROKR SW QUIK 250°AC/PWR ON-OFF	1	29	3922	XLR FEM PCB MT HORZ THIN SNAP	2
15	4174	FAN 80MM X 80MM 72CFM 24VDC	2				





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