

# ALPHA 50 & 65 EVO

Electronic Diagrams



# ALPHA 50 & 65 EVO

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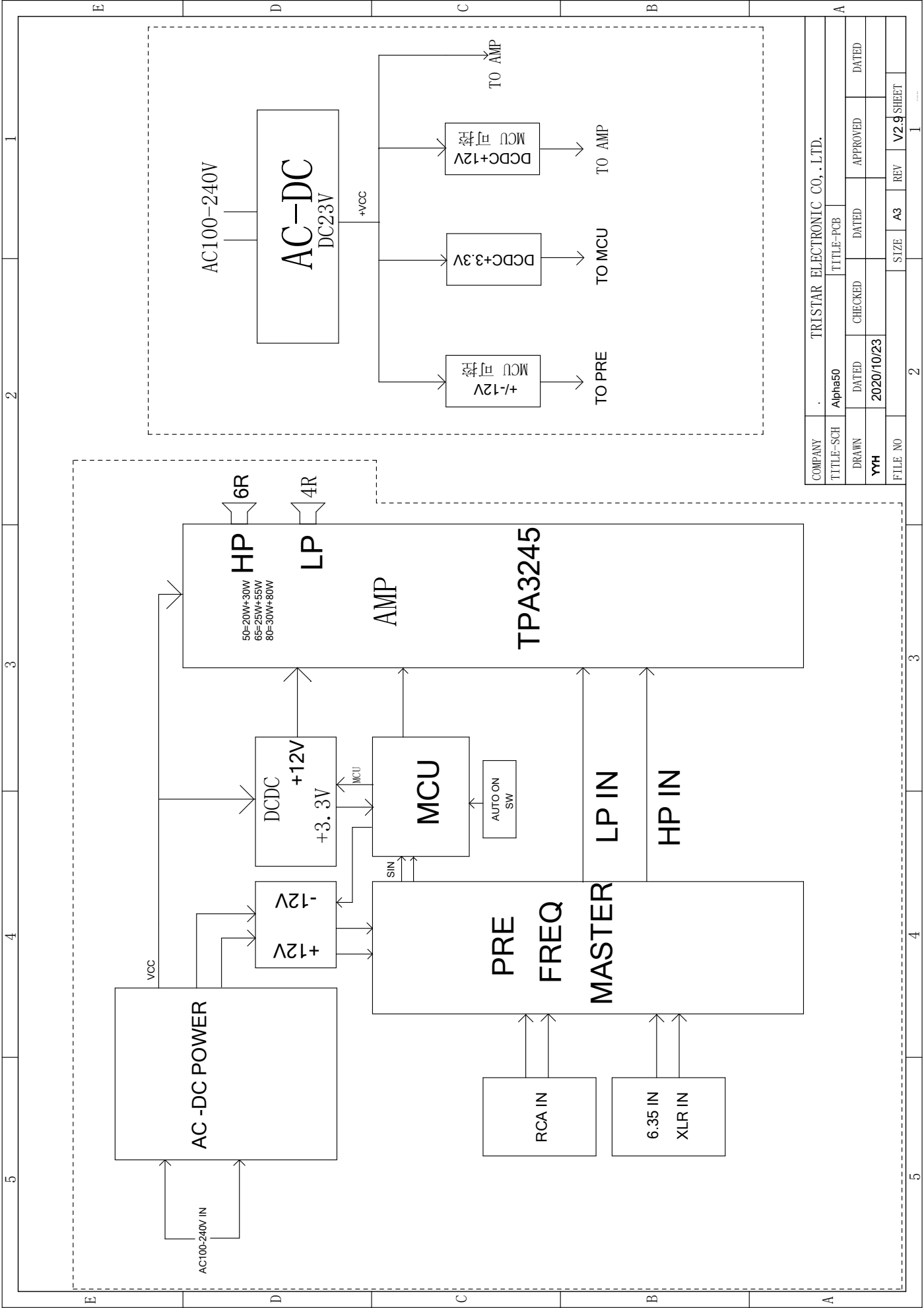
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# ALPHA 50 EVO

Electronic Diagrams

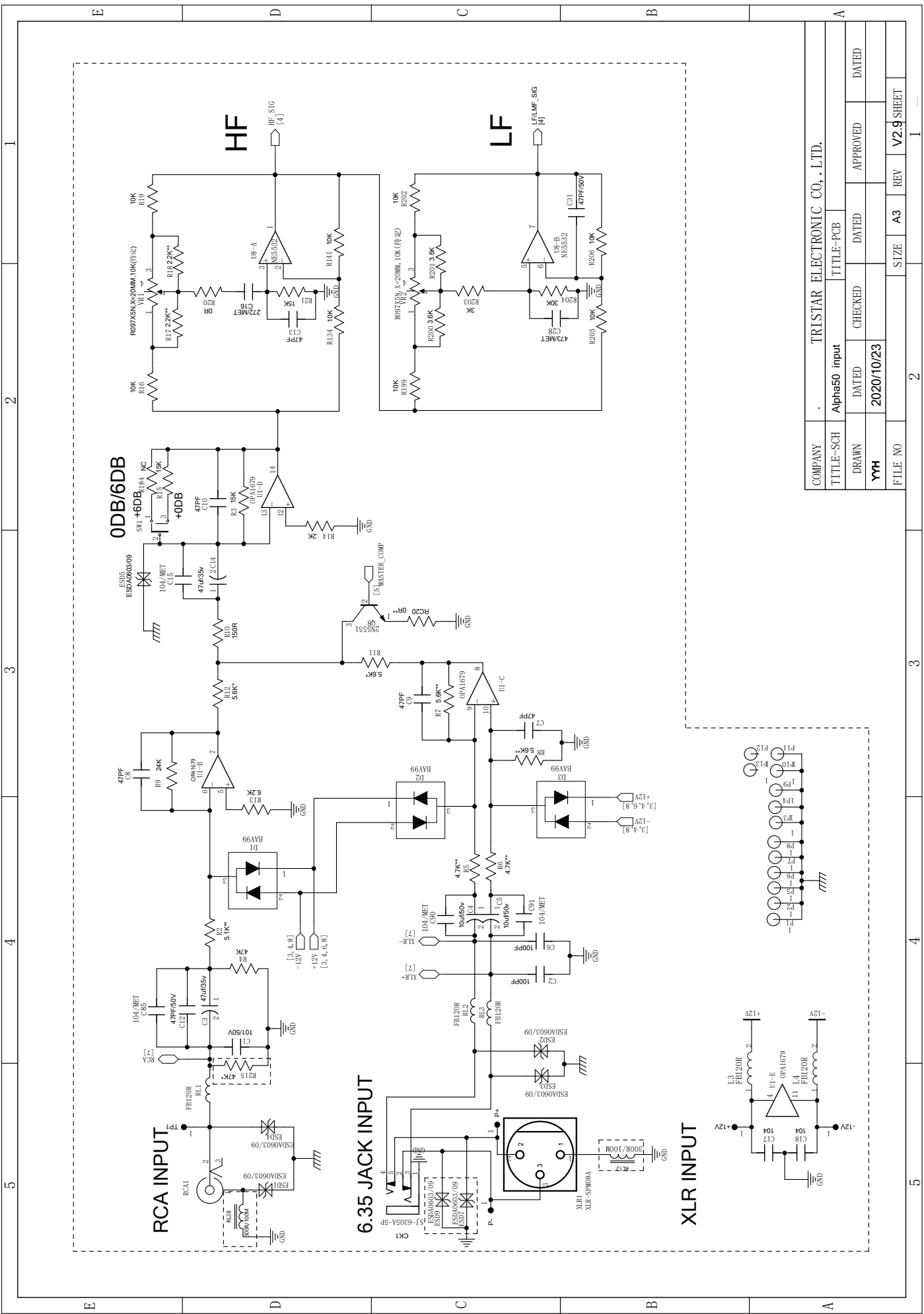
## Alpha 50 Evo Schematic



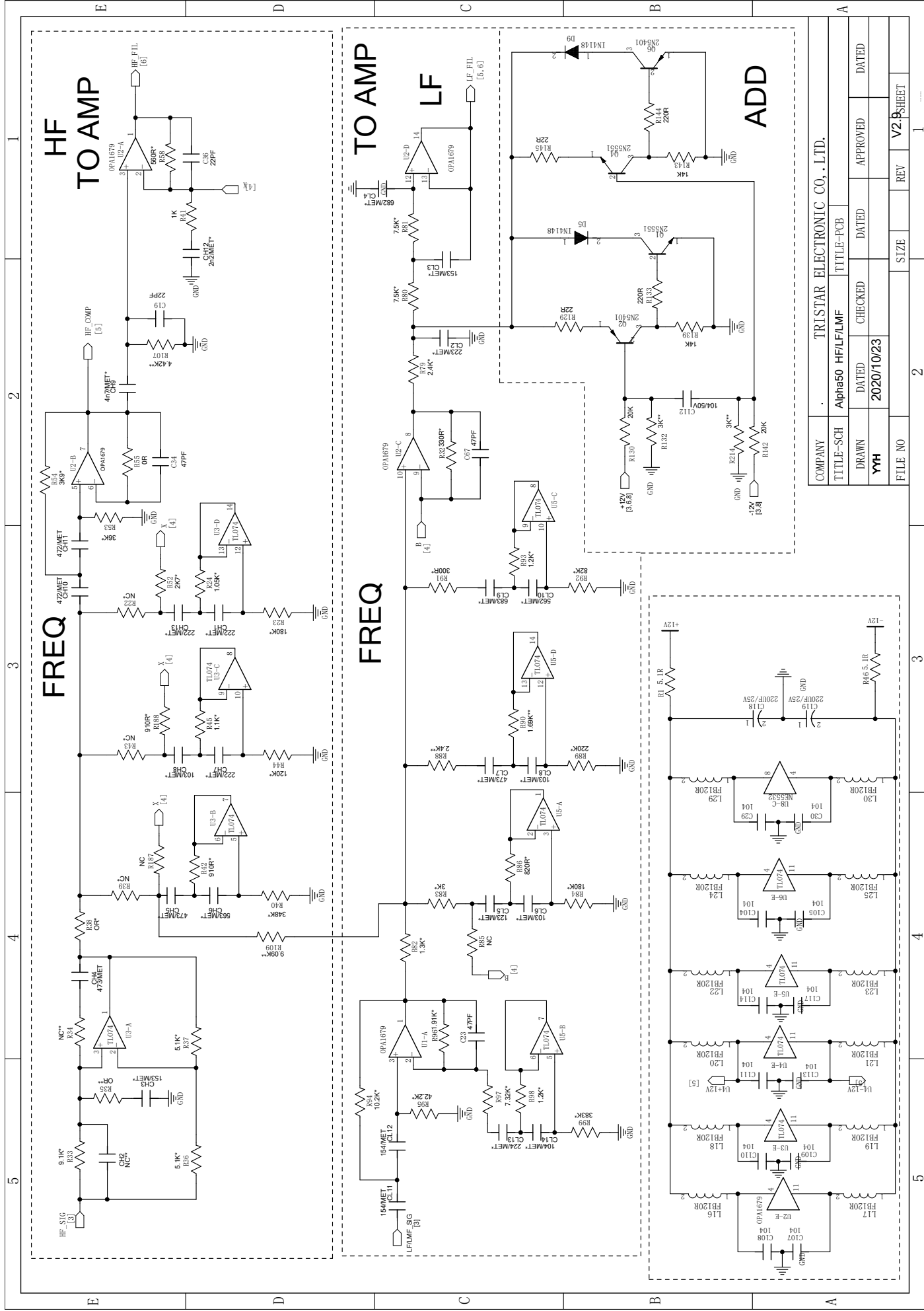


|           |                              |           |       |            |
|-----------|------------------------------|-----------|-------|------------|
| COMPANY   | TRISTAR ELECTRONIC CO., LTD. |           |       |            |
| TITLE-SCH | Alpha50                      | TITLE-PCB |       |            |
| DRAWN     | DATED                        | CHECKED   | DATED | DATED      |
| YYH       | 2020/10/23                   |           |       |            |
| FILE NO   |                              | SIZE      | A3    | REV        |
|           |                              |           |       | V2.9 SHEET |





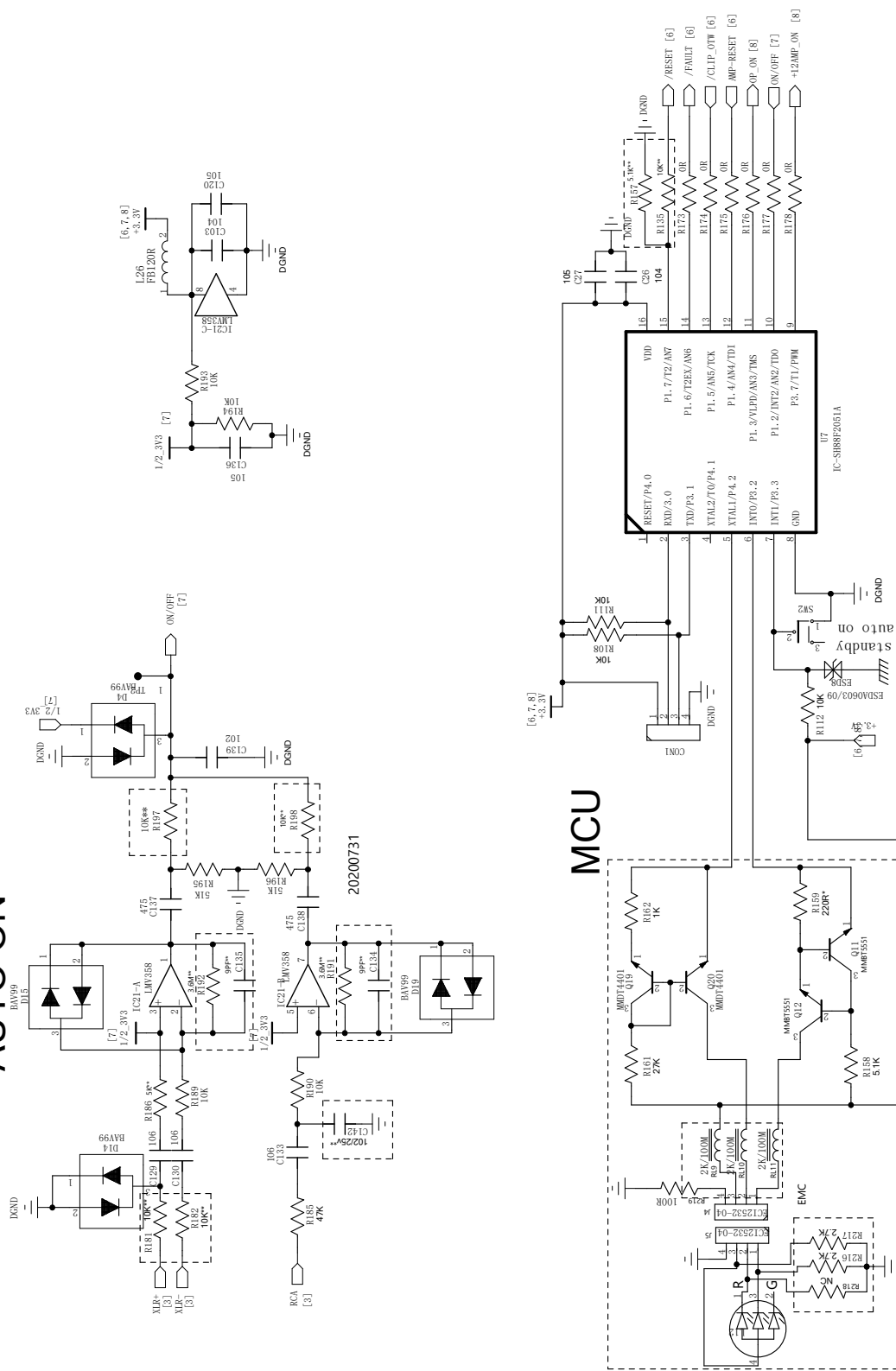
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|-----------|--|------------------------------|--|---------|--|-------|--|-------|--|
| COMPANY   |  | TRISTAR ELECTRONIC CO., LTD. |  |         |  |       |  |       |  |
| TITLE-SCH |  | Alpha50 input                |  |         |  |       |  |       |  |
| DRAWN     |  | DATED                        |  | CHECKED |  | DATED |  | DATED |  |
| YYH       |  | 2020/10/23                   |  |         |  |       |  |       |  |
| FILE NO   |  |                              |  |         |  | SIZE  |  | A3    |  |
|           |  |                              |  |         |  | REV   |  | V2.9  |  |
|           |  |                              |  |         |  |       |  | SHEET |  |
|           |  |                              |  |         |  |       |  | 1     |  |





|           |                              |         |           |          |       |            |   |
|-----------|------------------------------|---------|-----------|----------|-------|------------|---|
| COMPANY   | TRISTAR ELECTRONIC CO., LTD. |         |           |          |       |            | A |
| TITLE-SCH | Alpha50 MASTER               |         | TITLE-PCB |          |       |            |   |
| DRAWN     | DATED                        | CHECKED | DATED     | APPROVED | DATED |            |   |
| YH        | 2020/10/23                   |         |           |          |       |            |   |
| FILE NO   |                              |         | SIZE      | A3       | REV   | V2.9 SHEET |   |





|           |                              |         |       |           |       |      |   |       |  |  |
|-----------|------------------------------|---------|-------|-----------|-------|------|---|-------|--|--|
| COMPANY   | TRISTAR ELECTRONIC CO., LTD. |         |       |           |       |      |   |       |  |  |
| TITLE-SCH | Alpha50 MCU                  |         |       | TITLE-PCB |       |      | A |       |  |  |
| DRAWN     | DATED                        | CHECKED | DATED | APPROVED  | DATED |      |   |       |  |  |
| YH        | 2020/10/23                   |         |       |           |       |      |   |       |  |  |
| FILE NO   |                              |         | SIZE  | A3        | REV   | V2.0 |   | SHEET |  |  |
|           |                              |         | 2     |           | 1     |      |   |       |  |  |



| DESCRIPTION                                                              | REF DESIGNATION                                                       |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 2 layers PCB\FR4\TS.8011.A\<br>V1.6\240*133+4*4*1.6mm\green color 200920 |                                                                       |
| SMT resistor\1/10W\0R\±1%\0603                                           | RC20,R114,R115,RA31,R173,R174,R177,R175,R176,R178,<br>R20,R55,R35,R38 |
| SMT resistor\1/10W\10R\±1%\0603                                          | RA22,RA23,RA25                                                        |
| SMT resistor\1/10W\22R\±1%\0603                                          | R129,R145,R57                                                         |
| SMT resistor\1/10W\180R\±1%\0603                                         | R116                                                                  |
| SMT resistor\1/10W\100R\±1%\0603                                         | R77,R87,R118,R163                                                     |
| SMT resistor\1/10W\150R\±1%\0603                                         | R10                                                                   |
| SMT resistor\1/10W\220R\±1%\0603                                         | R133,R144,R110,R159                                                   |
| SMT resistor\1/10W\300R\±1%\0603                                         | R91                                                                   |
| SMT resistor\1/10W\330R\±1%\0603                                         | R32                                                                   |
| SMT resistor\1/10W\510R\±1%\0603                                         | R147                                                                  |
| SMT resistor\1/10W\560R\±1%\0603                                         | R58                                                                   |
| SMT resistor\1/10W\820R\±1%\0603                                         | R86                                                                   |
| SMT resistor\1/10W\910R\±1%\0603                                         | R188,R42                                                              |
| SMT resistor\1/10W\1K\±1%\0603                                           | RA19,R31,R41,R162,R102,R210,R131,R220                                 |
| SMT resistor\1/10W\1.05K\±1%\0603                                        | R24                                                                   |
| SMT resistor\1/10W\1.1K\±1%\0603                                         | R45                                                                   |
| SMT resistor\1/10W\1.2K\±1%\0603                                         | R98,R93                                                               |
| SMT resistor\1/10W\1.3K\±1%\0603                                         | R82                                                                   |
| SMT resistor\1/10W\1.5K\±1%\0603                                         | R151                                                                  |
| SMT resistor\1/10W\1.69K\±1%\0603                                        | R90                                                                   |
| SMT resistor\1/10W\1.91K\±1%\0603                                        | R96                                                                   |
| SMT resistor\1/10W\2K\±1%\0603                                           | RA18,R14,R72,R74,R100,R104,R117                                       |
| SMT resistor\1/10W\2.2K\±1%\0603                                         | R17,R18,RA28                                                          |
| SMT resistor\1/10W\2.4K\±1%\0603                                         | R79,R88                                                               |
| SMT resistor\1/10W\2.49K\±1%\0603                                        | RA21                                                                  |
| SMT resistor\1/10W\2.7K\±1%\0603                                         | R51,R59,R52,R165,R50,R78,R101,R113,R126,R216,R217                     |
| SMT resistor\1/10W\3K\±1%\0603                                           | R203,R49,R76,R164,R83,R132,R214                                       |
| SMT resistor\1/10W\3.3K\±1%\0603                                         | R153                                                                  |
| SMT resistor\1/10W\3.6K\±1%\0603                                         | R200,R201                                                             |
| SMT resistor\1/10W\3.9K\±1%\0603                                         | R54                                                                   |
| SMT resistor\1/10W\4.42K\±1%\0603                                        | R107                                                                  |
| SMT resistor\1/10W\4.7K\±1%\0603                                         | R5,R6                                                                 |
| SMT resistor\1/10W\4.99K\±1%\0603                                        | R186                                                                  |
| SMT resistor\1/10W\5.1K\±1%\0603                                         | R2,R27,R36,RA16,R37,R158,R157                                         |
| SMT resistor\1/10W\5.6K\±1%\0603                                         | R11,R12,R7                                                            |
| SMT resistor\1/10W\5.9K\±1%\0603                                         | R29                                                                   |
| SMT resistor\1/10W\6.2K\±1%\0603                                         | R13,R8                                                                |
| SMT resistor\1/10W\7.32K\±1%\0603                                        | R97                                                                   |
| SMT resistor\1/10W\7.5K\±1%\0603                                         | R80,R81                                                               |
| SMT resistor\1/10W\9.09K\±1%\0603                                        | R109                                                                  |
| SMT resistor\1/10W\9.1K\±1%\0603                                         | R33                                                                   |

| DESCRIPTION                       | REF DESIGNATION                                                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| SMT resistor\1/10W\10K\±1%\0603   | R181,R182,R197,R198,R135,RA24,R16,R19,R25,R26,R28,R108,R111,R112,R134,R141,R146,R154,R170,R199,R202,R205,R206,R167,R179,R189,R193,R194,R190,R156 |
| SMT resistor\1/10W\10.2K\±1%\0603 | R94                                                                                                                                              |
| SMT resistor\1/10W\12K\±1%\0603   | R169                                                                                                                                             |
| SMT resistor\1/10W\14K\±1%\0603   | R139,R143                                                                                                                                        |
| SMT resistor\1/10W\15K\±1%\0603   | R3,R15,R21,R209                                                                                                                                  |
| SMT resistor\1/10W\18K\±1%\0603   | RA17,R71,R73                                                                                                                                     |
| SMT resistor\1/10W\20K\±1%\0603   | R130,R142,R148,R221                                                                                                                              |
| SMT resistor\1/10W\20.5K\±1%\0603 | R183,R243                                                                                                                                        |
| SMT resistor\1/10W\22K\±1%\0603   | R152,R120                                                                                                                                        |
| SMT resistor\1/10W\24K\±1%\0603   | R9                                                                                                                                               |
| SMT resistor\1/10W\27K\±1%\0603   | R161                                                                                                                                             |
| SMT resistor\1/10W\30K\±1%\0603   | R204                                                                                                                                             |
| SMT resistor\1/10W\33K\±1%\0603   | R150,R180,R63,R106                                                                                                                               |
| SMT resistor\1/10W\36K\±1%\0603   | R168,R53                                                                                                                                         |
| SMT resistor\1/10W\42.2K\±1%\0603 | R95                                                                                                                                              |
| SMT resistor\1/10W\47K\±1%\0603   | R4,R185,R208,R207,R212,R215                                                                                                                      |
| SMT resistor\1/10W\51K\±1%\0603   | R195,R196                                                                                                                                        |
| SMT resistor\1/10W\75K\±1%\0603   | R30                                                                                                                                              |
| SMT resistor\1/10W\82K\±1%\0603   | R92                                                                                                                                              |
| SMT resistor\1/10W\84.5K\±1%\0603 | R213,R244                                                                                                                                        |
| SMT resistor\1/10W\100K\±1%\0603  | R211                                                                                                                                             |
| SMT resistor\1/10W\180K\±1%\0603  | R23,R84                                                                                                                                          |
| SMT resistor\1/10W\120K\±1%\0603  | R44                                                                                                                                              |
| SMT resistor\1/10W\200K\±1%\0603  | R149                                                                                                                                             |
| SMT resistor\1/10W\220K\±1%\0603  | R89                                                                                                                                              |
| SMT resistor\1/10W\249K\±1%\0603  | R62,R105                                                                                                                                         |
| SMT resistor\1/10W\348K\±1%\0603  | R40                                                                                                                                              |
| SMT resistor\1/10W\383K\±1%\0603  | R99                                                                                                                                              |
| SMT resistor\1/10W\3.6M\±5%\0603  | R191,R192                                                                                                                                        |
| SMT resistor\1/10W\4.7M\±1%\0603  | R61,R103                                                                                                                                         |
| SMT resistor\1/8W\3.3R\±1%\0805   | R119,R123                                                                                                                                        |
| SMT resistor\1/4W\0R\±1%\1206     | R127,RX2,RA14                                                                                                                                    |
| SMT resistor\1/4W\3.3R\±1%\1206   | R121,R122,R124,R125                                                                                                                              |
| SMT resistor\1/4W\5.1R\±1%\1206   | R1,R46                                                                                                                                           |
| SMT resistor\1/4W\10R\±1%\1206    | RA5,RA6,RA9                                                                                                                                      |
| SMT resistor\1/4W\100R\±1%\1206   | R47,R48,R171,R166,R160,R155,R47,R48,R219                                                                                                         |
| SMT resistor\1/4W\3.6K\±1%\1206   | R66,R69                                                                                                                                          |
| SMT resistor\1/4W\9.1K\±1%\1206   | R56                                                                                                                                              |
| SMT resistor\1/4W\20K\±1%\1206    | R172                                                                                                                                             |
| SMT resistor\1/4W\1K\±1%\1206     | RA13                                                                                                                                             |
| SMT resistor\1/4W\1M\±1%\1206     | RA1,RA2,RA3,RA4                                                                                                                                  |
| SMT resistor\1/4W\2M\±1%\1206     | RA10,RA11                                                                                                                                        |

| DESCRIPTION                             | REF DESIGNATION                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SMT resistor\1W\0R\±1%\2512             | RA29                                                                                                                                                                                               |
| SMT resistor\1W\0.47R\±1%\2512          | RA27,RA26                                                                                                                                                                                          |
| SMT resistor\1W\100K\±5%\2512           | RA7,RA8                                                                                                                                                                                            |
| SMT capacitor\9PF\50V\±0.25%\0603\NPO   | C134,C135                                                                                                                                                                                          |
| SMT capacitor\22PF\50V\±5%\0603\NPO     | C19,C36                                                                                                                                                                                            |
| SMT capacitor\47PF\50V\±5%\0603\NPO     | C7,C8,C9,C10,C20,C23,C34,C67,C68,C92,C31,C12,C13                                                                                                                                                   |
| SMT capacitor\100PF\50V\±5%\0603\NPO    | C1,C2,C6                                                                                                                                                                                           |
| SMT capacitor\1nF\50V\±10%\0603\X7R     | C128,C139,C48,C64,C142                                                                                                                                                                             |
| SMT capacitor\10nF\50V\±10%\0603\X7R    | C121,CA16                                                                                                                                                                                          |
| SMT capacitor\100nF\50V\±10%\0603\X7R   | CM22,CM23,CM1,CM2,CM3,CM4,CM5,CM6,CM7,CM8,CM9,CM10,CM11,CM12,C17,C18,C26,C29,C30,C60,C62,C71,C76,C88,C89,C96,C97,C99,C104,C105,C107,C108,C109,C110,C111,C113,C114,C117,C127,C112,C78,C79,C103,CA19 |
| SMT capacitor\1uF\25V\±10%\0603\X5R     | C27,C46,C98,C115,C120,C136                                                                                                                                                                         |
| SMT capacitor\10uF\6.3V\±10%\0603\X5R   | C130,C133,C129                                                                                                                                                                                     |
| SMT capacitor\220PF\100V\±10%\0603\X7R  | C51,C65                                                                                                                                                                                            |
| SMT capacitor\33nF\50V\±10%\0603\X7R    | C35,C39,C42,C77                                                                                                                                                                                    |
| SMT capacitor\47nF\50V\±10%\0603\X7R    | CA21                                                                                                                                                                                               |
| SMT capacitor\470PF\50V\±10%\0603\X7R   | C75                                                                                                                                                                                                |
| SMT capacitor\4.7uF\10V\±10%\0603\X5R   | C137,C138                                                                                                                                                                                          |
| SMT capacitor\680PF\100V\±10%\0603\X7R  | C82,C84,C83                                                                                                                                                                                        |
| SMT capacitor\1nF\100V\±10%\0805\X7R    | C55,C58,C56,C57,CM14,CM15,CM16,CM17                                                                                                                                                                |
| SMT capacitor\10nF\50V\±10%\0805\X7R    | C33,C59,C61,C63                                                                                                                                                                                    |
| SMT capacitor\100nF\100V\±10%\0805\X7R  | C11,C140,C132,C131,C124,C94,CM20,CM21,CM18,CM19                                                                                                                                                    |
| SMT capacitor\1uF\50V\±20%\0805\X7R     | C40,C41,C72,C73,CA12                                                                                                                                                                               |
| SMT capacitor\47PF\1KV\±10%\1206\X7R    | CA3                                                                                                                                                                                                |
| SMT capacitor\1nF\100V\±5%\1206\NPO     | C141                                                                                                                                                                                               |
| SMT capacitor\220PF\100V\±10%\1206\X7R  | CA2,CA6,CA11                                                                                                                                                                                       |
| SMT capacitor\10uF\50V\±10%\1206\X7R    | C122,C123,C125,C126                                                                                                                                                                                |
| SMT diode\1/2W\LL4148\LL-34\ST          | D5,D9,D10,D11,DA8,DA9,D12                                                                                                                                                                          |
| SMT diode\1/2W\18V\LL-34                | ZD1                                                                                                                                                                                                |
| SMT diode\FR107(RS1M)\D-SMA\DO-214AC    | DA4,DA5,DA6,DA7                                                                                                                                                                                    |
| SMT diode\1N5819(SS14)\DO-214AC\MDD     | D13,D16                                                                                                                                                                                            |
| SMT diode\1N4007(M7)\D-SM\MDD           | D6,D7,D18                                                                                                                                                                                          |
| SMT diode\BAV99(A7)\SOT23\FAIRCHILD&LRC | D1,D2,D3,D4,D14,D15,D19                                                                                                                                                                            |
| SMT diode\BAT54C(WW1)\SOT-23            | D8                                                                                                                                                                                                 |
| SMT diode\US2J\DO-214AC                 | DA1,DA2                                                                                                                                                                                            |
| SMT triode\NPN\MMBT4401\SOT23\LRC       | Q19,Q20                                                                                                                                                                                            |
| SMT triode\NPN\MMBT5551\SOT23           | Q1,Q3,Q4,Q5,Q7,Q8,Q10,Q14,Q17,Q18,Q11,Q12,Q21,Q22                                                                                                                                                  |
| SMT triode\PNP\MMBT5401\SOT23           | Q2,Q6,Q9,Q15,Q16                                                                                                                                                                                   |
| SMT IC\CJ431\SOT23\                     | U14,U13,U15                                                                                                                                                                                        |
| SMT IC\EL817S-C\SOP4                    | U12,U9                                                                                                                                                                                             |
| SMT IC\OB2362\SOT23-6                   | UA3                                                                                                                                                                                                |

| DESCRIPTION                                                    | REF DESIGNATION                                               |
|----------------------------------------------------------------|---------------------------------------------------------------|
| SMT IC\SH88F2051BL/016LR\SOP16                                 | U7                                                            |
| SMT IC\EML3190\E-SOP-8L                                        | U11                                                           |
| SMT IC\EML3193B\SOP8                                           | U10                                                           |
| SMT IC\TPA3245DDVR\TI                                          | IC3                                                           |
| SMT IC\TL074CN\SO14                                            | U3,U4,U5,U6                                                   |
| SMT IC\NE5532ADR\SOIC-8_3.9X4.9MM                              | U8                                                            |
| SMT IC\OPA1679\SOP14                                           | U1,U2                                                         |
| SMT IC\LMV358IDR\SOIC-8\TI                                     | IC21                                                          |
| SMT inductor\D6mm\10uH\2A\1210                                 | L1                                                            |
| SMT inductor\D6mm\22uH\2A\1210                                 | L7,L8                                                         |
| SMT inductor\D6mm\4.7uH\2A\1210                                | L9,L32,L33                                                    |
| SMT magnet bead\300R\500mA\0603                                | RL6                                                           |
| SMT magnet bead\120R\0603                                      | RL1,RL2,RL3,RL7,RL8                                           |
| SMT magnet bead\120R\3A $\pm$ 25%\0805                         | L3,L4,L15,L26,L29,L30,L16,L17,L18,L19,L20,L21,L22,L23,L24,L25 |
| SMT magnet bead\100M\300R\3A\0805                              | RL28,RL12                                                     |
| SMT magnet bead\100M\2K\0805                                   | RL9,RL10,RL11                                                 |
| SMT inductor\10uH\6A\12*12*7mm                                 | L2,L5,L10,L11                                                 |
| SMT TVS diode\PESD0603V09P03\0603\                             | ESD1,ESD2,ESD3,ESD4,ESD5,ESD8,ESD6,ESD7,ESD9,ESD10            |
| SMT LED\1209-0.9T\RYGB                                         | L12                                                           |
| MSMD075\33(0.75A/33V)\1812                                     | PTC1,PTC2                                                     |
| Ceramic capacitor\10nF\1KV $\pm$ 20%\blue color\ P=5mm\L=3.5mm | CA10                                                          |
| MET capacitor\10nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CH8,CL8,CL6                                                   |
| MET capacitor\12nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CL5                                                           |
| MET capacitor\22nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CL2                                                           |
| MET capacitor\56nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CH6                                                           |
| MET capacitor\6.8nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm        | CL4                                                           |
| MET capacitor\68nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CL9                                                           |
| MET capacitor\100nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm        | C15,C85,C90,C91,CL14                                          |
| MET capacitor\1uF\100V $\pm$ 5%\7.2*6*11mm\L=3.5mm             | C47,C50,C52,C53                                               |
| MET capacitor\15nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CL3,CH3                                                       |
| MET capacitor\150F\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm         | CL11,CL12                                                     |
| MET capacitor\2.2nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm        | CH12,CH13,CH1,CH7                                             |
| MET capacitor\2.7nF\100V $\pm$ 5%\7.2*6.5*2.5mm\L=3.5mm        | C16                                                           |

| DESCRIPTION                                                                                                 | REF DESIGNATION              |
|-------------------------------------------------------------------------------------------------------------|------------------------------|
| MET capacitor\5.6nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm                                                      | CL10                         |
| MET capacitor\47nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm                                                       | C28,CH5,CL7,CH4              |
| Y capacitor\470PF\400V\±20%\P=10mm\<br>L=8mm                                                                | CY1,CY2,CY4                  |
| Metallized polypropylene capaci-<br>tor\5.6nF\1250V\±10K7.5mm                                               | CA9                          |
| X capacitor\220nF\275V\±20%\18*6*12mm\<br>P=15mm\L=3.5mm                                                    | CX1,CX2                      |
| Aluminum electrolytic<br>capacitor\2.2uF\50V\±20%\D5*11mm\<br>L=3.5mm                                       | CA17                         |
| Aluminum electrolytic<br>capacitor\10uF\50V\±20%\D4*7mm\<br>L=3.5mm                                         | C4,C5                        |
| Aluminum electrolytic<br>capacitor\22uF\25V\±20%\D4*7mm\<br>L=3.5mm                                         | C101,C102                    |
| Aluminum electrolytic<br>capacitor\47uF\35V\±20%\D5*11mm\<br>L=3.5mm                                        | C3,C14                       |
| Aluminum electrolytic<br>capacitor\22uF\50V\±20%\D5*11mm\<br>L=3.5mm                                        | C22,C37,C70                  |
| Aluminum electrolytic capacitor\<br>47uF\50V\±20%\D6.3*12mm\<br>L=3.5mm                                     | CA18                         |
| Aluminum electrolytic capacitor\<br>100uF\35V\±20%\D6.3*11mm\<br>L=3.5mm                                    | C100,C86,C87,CA4,CA5,CA7,CA8 |
| Aluminum electrolytic capacitor\<br>220uF\10V\±20%\D5*11mm\<br>L=3.5mm                                      | C95                          |
| Aluminum electrolytic capacitor\<br>220uF\25V\±20%,Φ6.3*12mm\<br>L=3.5mm                                    | C118,C119,C69                |
| Aluminum electrolytic capacitor\<br>470uF\25V\±20%,Φ8*14mm\<br>L=3.5mm                                      | C106                         |
| High frequency low resistance aluminum<br>electrolytic capacitor\47uF\63V\±20%\<br>D8*12mm\L=3.5mm          | C21                          |
| High frequency low resistance aluminum<br>electrolytic capacitor\470uF\35V\±20%\<br>D10*13mm\L=3.5mm\5000H  | C43,C80                      |
| High frequency low resistance aluminum<br>electrolytic capacitor\1500uF\35V\±20%\<br>D13*21mm\L=3.5mm\5000H | CA13,CA14,CA15               |
| Aluminum electrolytic capaci-<br>tor\120uF\400V\±20%\D18*36mm\<br>L=3.5mm                                   | C151                         |
| PIN header\4P\P=2.0mm\180 degree                                                                            | CON1                         |
| Male jack\2532-04-180 degree                                                                                | J3,J4                        |
| Fuse\2A\250V\8.3*4.8*7.75\L=3.5mm                                                                           | F1                           |
| Inductor\1/2W\1mH\vertical\L=3.5mm                                                                          | L6,L13                       |
| Magnet bead\D3.5*9mm\vertical\P=5mm\<br>L=3.5mm                                                             | L27,L28                      |
| Inductor\22uH\3A\D8*10mm\P=5mm\L=6mm                                                                        | L31                          |
| Common mode choke\DU1515\1mH                                                                                | L34                          |

| DESCRIPTION                                                         | REF DESIGNATION |
|---------------------------------------------------------------------|-----------------|
| Common mode choke\DU1515\22mH                                       | L35             |
| Difference mode choke\30mH\T20*12*10\0.6 copper wire                | L36             |
| Difference mode choke\2mH\T14*8*7\0.65 copper wire                  | L14             |
| Transformer\EE33\Alpha50                                            | T1              |
| NTC\2.5D-15\P=7.5mm\L=3.5mm\K feet                                  | RT1             |
| Varistor\10D471K\P=7.5mm\L=3.5mm                                    | VR3             |
| NTC\100K\±5%\L=19mm                                                 | RT2             |
| D1*15mm\black                                                       |                 |
| Brigde rectifier\RS406L&KBL406\H=10mm\L=3.5mm                       | BD1             |
| MOSFET\SVF10N65\TO-220F                                             | Q13             |
| Brigde rectifier\MBRF20200CT\TO-220F                                | DA3             |
| EMI magnet\TC5B\3.5*4*1.5                                           |                 |
| 25.1*17.4*0.5mm\silicon sheet\one side with adhesive                |                 |
| 23*15*10.5mm\ALU\black\D1.7mm\4mm                                   | Q13             |
| 45*23.5*16mm\ALU\black\Φ2.0mm\4mm                                   | DA13            |
| M3*8                                                                |                 |
| RCA jack\1P\AV1-8.3-31A+01AB\white                                  | RCA1            |
| slide switch\SS-12F09-G7                                            | SW1,SW2         |
| Single potentiometer\R0972FN-FB14A4-B103-OXO                        | VR1-2           |
| XLR female jack\XLR-16D                                             | XLR1            |
| CK-6.35-31-5P                                                       | CK1             |
| 4P\UL2547\26#\L=400                                                 |                 |
| 350*50*3\black                                                      |                 |
| 25*6*19.7\ALU\nature color                                          |                 |
| 29*10*1.0mm                                                         |                 |
| S5*15.5mm                                                           |                 |
| S5*20mm*M3                                                          |                 |
| M3*6                                                                |                 |
| M4*8                                                                |                 |
| M3*12                                                               |                 |
| 14*10*0.1mm                                                         |                 |
| 113*81.5*21\EVA\black                                               |                 |
| Male jack\3961-03-180 degree                                        | OUTA1           |
| 13.5*12*13\EVA\black                                                |                 |
| PST-101FS\3P                                                        | IN1             |
| Fuse\T2AL\250V\5*20mm                                               |                 |
| 2 layers PCB\FR4\TS.5007.A\V1.0\34.5*30*1.6mm\green color 200224    |                 |
| 2 layers PCB\FR4\TS.5008.A\V1.0\26.56*26.2*1.6mm\green color 200224 |                 |

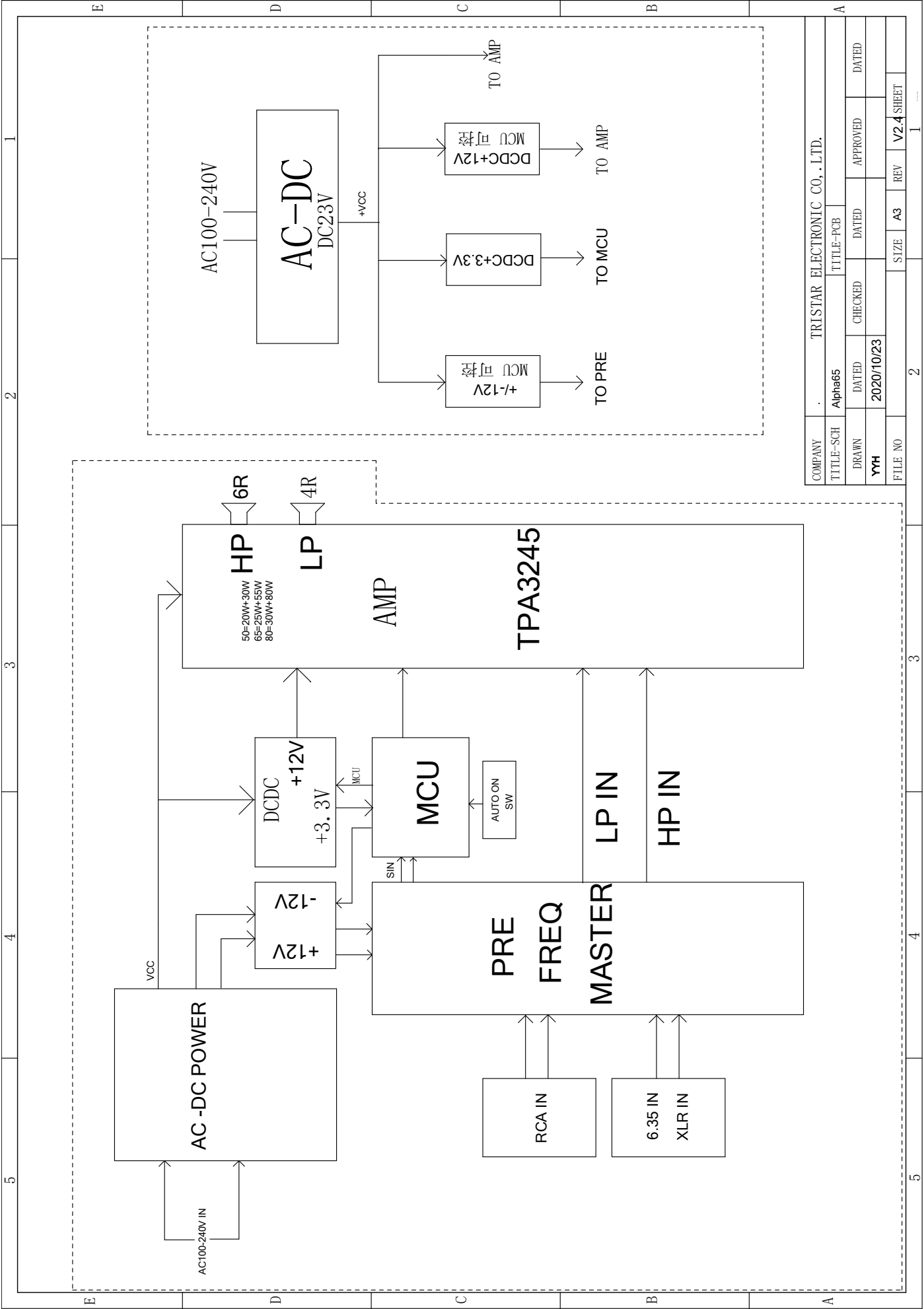
| DESCRIPTION                           | REF DESIGNATION |
|---------------------------------------|-----------------|
| 28.4*30*10                            |                 |
| 26.7*25.8*3.5\EVA\black               |                 |
| 65A knob                              |                 |
| D3*8\head 5.2\                        |                 |
| M3*8\head 5.2                         |                 |
| M3*10\head 5.3                        |                 |
| M3*8\head 5.7                         |                 |
| D2.5*100mm\ white                     |                 |
| 2P\UL1617\20#\260                     | SW1             |
| 250*50*3\black                        |                 |
| 300*50*3\black                        |                 |
| black ground with white printing      |                 |
| 13*****\30*15mm                       |                 |
| 28*18.7*3\38degree EVA\black          |                 |
| RS601 &PS8A-2-B1B14-1H-38             |                 |
| 280*158*3.0\ALU\TFA31D012\V01         |                 |
| 146*11*1.5\EVA\BLACK\Alpha50          |                 |
| 280*11*1.5\EVA\BLACK\Alpha50          |                 |
| 4P\UL1007\20#                         |                 |
| EMI magnet\T25*12*15                  |                 |
| EU power cord\EL-202+701A\1.83m\black |                 |

# ALPHA 65 EVO

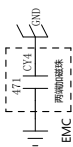
Electronic Diagrams

## Alpha 65 Evo Schematic

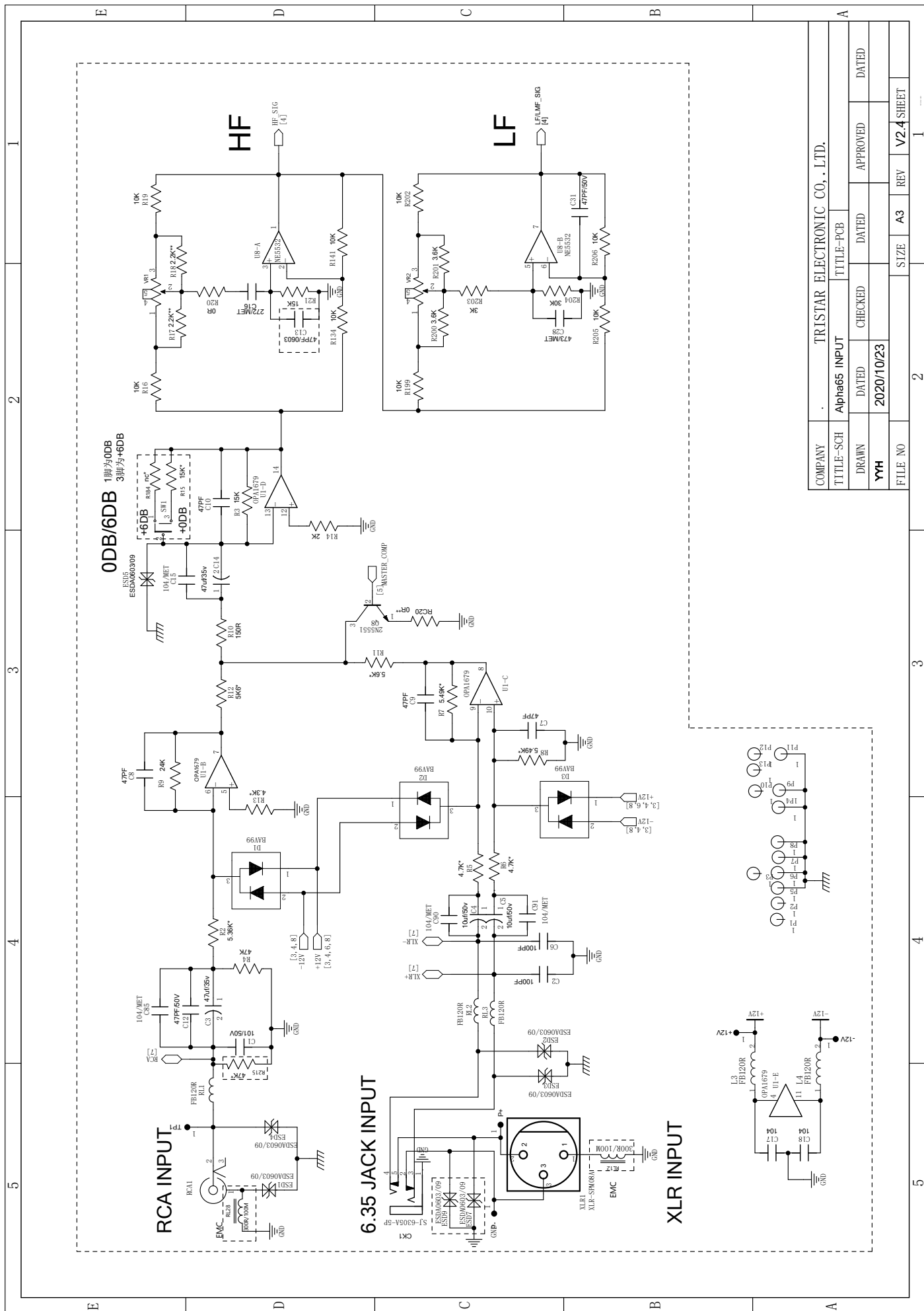




|           |                              |           |         |            |
|-----------|------------------------------|-----------|---------|------------|
| COMPANY   | TRISTAR ELECTRONIC CO., LTD. |           |         |            |
| TITLE-SCH | Alpha65                      | TITLE-PCB |         |            |
| DRAWN     | YH                           | DATED     | CHECKED | DATED      |
| FILE NO   | 2020/10/23                   |           |         |            |
|           |                              | SIZE      | A3      | REV        |
|           |                              |           |         | V2.4 SHEET |



|           |                                |         |           |          |     |
|-----------|--------------------------------|---------|-----------|----------|-----|
| COMPANY   | . TRISTAR ELECTRONIC CO., LTD. |         |           |          |     |
| TITLE-SCH | Alpha65                        | POWER   | TITLE-PCB |          |     |
| DRAWN     | DATED                          | CHECKED | DATED     | APPROVED |     |
| YHY       | 2020/10/23                     |         |           |          |     |
| FILE NO   |                                |         | SIZE      | A3       | REV |
|           |                                |         |           |          | V2  |



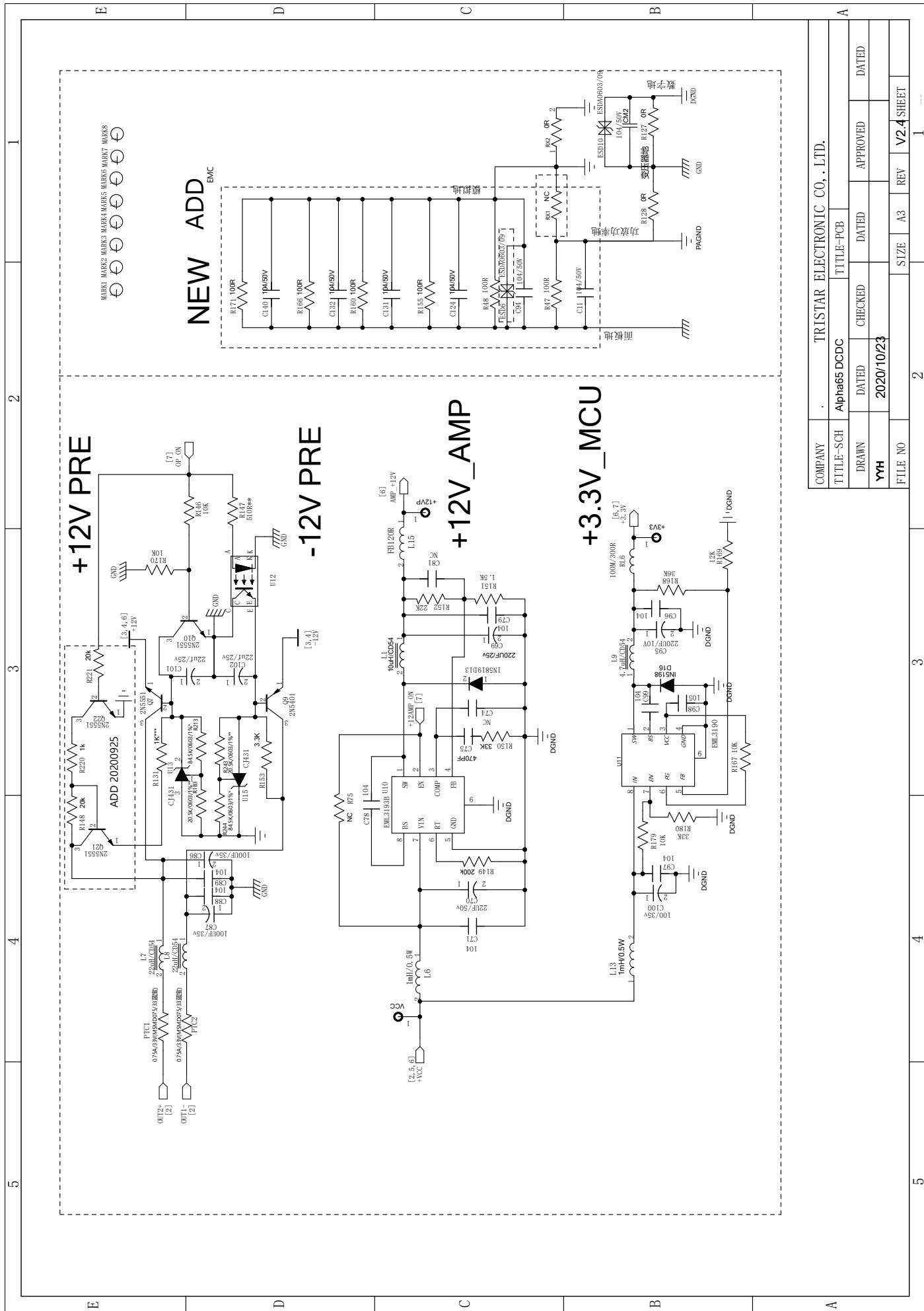
|           |                              |           |       |            |
|-----------|------------------------------|-----------|-------|------------|
| COMPANY   | TRISTAR ELECTRONIC CO., LTD. |           |       |            |
| TITLE-SCH | Alpha65 INPUT                | TITLE-PCB |       |            |
| DRAWN     | DATED                        | CHECKED   | DATED | DATED      |
| YH        | 2020/10/23                   |           |       |            |
| FILE NO   |                              | SIZE      | A3    | REV        |
|           |                              |           |       | V2.4 SHEET |











| DESCRIPTION                                                              | REF DESIGNATION                                                                                                                                              |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 layers PCB\FR4\TS.8011.A\<br>V1.6\240*133+4*4*1.6mm\green color 200920 |                                                                                                                                                              |
| SMT resistor\1/10W\0R\±1%\0603                                           | RC20,R114,R115,R173,R178,R20,R55,R35,RA30,R38,<br>R177,R174,R175,R176                                                                                        |
| SMT resistor\1/10W\10R\±1%\0603                                          | RA22,RA23,RA25                                                                                                                                               |
| SMT resistor\1/10W\22R\±1%\0603                                          | R129,R145                                                                                                                                                    |
| SMT resistor\1/10W\100R\±1%\0603                                         | R77,R87,R118,R163                                                                                                                                            |
| SMT resistor\1/10W\120R\±1%\0603                                         | R116                                                                                                                                                         |
| SMT resistor\1/10W\150R\±1%\0603                                         | R10                                                                                                                                                          |
| SMT resistor\1/10W\220R\±1%\0603                                         | R133,R144,R110,R159                                                                                                                                          |
| SMT resistor\1/10W\270R\±1%\0603                                         | R58                                                                                                                                                          |
| SMT resistor\1/10W\430R\±1%\0603                                         | R93                                                                                                                                                          |
| SMT resistor\1/10W\470R\±1%\0603                                         | R57                                                                                                                                                          |
| SMT resistor\1/10W\510R\±1%\0603                                         | R147                                                                                                                                                         |
| SMT resistor\1/10W\750R\±1%\0603                                         | R82,R90                                                                                                                                                      |
| SMT resistor\1/10W\820R\±1%\0603                                         | R86                                                                                                                                                          |
| SMT resistor\1/10W\1K\±1%\0603                                           | R31,R42,R45,RA19,R162,R210,R102,R131,R220                                                                                                                    |
| SMT resistor\1/10W\1.05K\±1%\0603                                        | R98                                                                                                                                                          |
| SMT resistor\1/10W\1.2K\±1%\0603                                         | R52,R32                                                                                                                                                      |
| SMT resistor\1/10W\1.47K\±1%\0603                                        | R79                                                                                                                                                          |
| SMT resistor\1/10W\1.5K\±1%\0603                                         | R151                                                                                                                                                         |
| SMT resistor\1/10W\1.6K\±1%\0603                                         | R24                                                                                                                                                          |
| SMT resistor\1/10W\1.8K\±1%\0603                                         | R41,R91                                                                                                                                                      |
| SMT resistor\1/10W\2K\±1%\0603                                           | R100,R104,R117,R14,R72,R74,RA18,RA21                                                                                                                         |
| SMT resistor\1/10W\2.2K\±1%\0603                                         | R17,R18,RA28,R96                                                                                                                                             |
| SMT resistor\1/10W\2.7K\±1%\0603                                         | R51,R59,R101,R113,R126,R216,R217                                                                                                                             |
| SMT resistor\1/10W\3K\±1%\0603                                           | R203,R33                                                                                                                                                     |
| SMT resistor\1/10W\3.16K\±1%\0603                                        | R132,R214                                                                                                                                                    |
| SMT resistor\1/10W\3.3K\±1%\0603                                         | R54,R153                                                                                                                                                     |
| SMT resistor\1/10W\3.6K\±1%\0603                                         | R200,R201                                                                                                                                                    |
| SMT resistor\1/10W\4.12K\±1%\0603                                        | R88                                                                                                                                                          |
| SMT resistor\1/10W\4.3K\±1%\0603                                         | R13                                                                                                                                                          |
| SMT resistor\1/10W\4.7K\±1%\0603                                         | R50,R78,R165,R81,R5,R6,R107,R80                                                                                                                              |
| SMT resistor\1/10W\4.99K\±1%\0603                                        | R186                                                                                                                                                         |
| SMT resistor\1/10W\5.1K\±1%\0603                                         | R27,R36,R37,RA16,R158,R157                                                                                                                                   |
| SMT resistor\1/10W\5.36K\±1%\0603                                        | R2                                                                                                                                                           |
| SMT resistor\1/10W\5.49K\±1%\0603                                        | R7,R8,R29                                                                                                                                                    |
| SMT resistor\1/10W\5.6K\±1%\0603                                         | R49,R76,R164,R11,R12,R97                                                                                                                                     |
| SMT resistor\1/10W\6.2K\±1%\0603                                         | R85                                                                                                                                                          |
| SMT resistor\1/10W\10K\±1%\0603                                          | R181,R182,R197,R198,R135,R16,R19,R25,R26,R28,<br>R108,R111,R112,R134,R141,R146,R154,R170,R199,R202,<br>R205,R206,R167,R179,R189,R193,R194,RA24,<br>R190,R156 |
| SMT resistor\1/10W\12K\±1%\0603                                          | R169                                                                                                                                                         |
| SMT resistor\1/10W\14K\±1%\0603                                          | R139,R143                                                                                                                                                    |
| SMT resistor\1/10W\15K\±1%\0603                                          | R3,R15,R21,R209                                                                                                                                              |

| DESCRIPTION                           | REF DESIGNATION                                  |
|---------------------------------------|--------------------------------------------------|
| SMT resistor\1/10W\18K\±1%\0603       | R71,R73,RA17,R94                                 |
| SMT resistor\1/10W\20K\±1%\0603       | R130,R142,R148,R221                              |
| SMT resistor\1/10W\20.5K\±1%\0603     | R183,R243                                        |
| SMT resistor\1/10W\22K\±1%\0603       | R152,R120,RA20                                   |
| SMT resistor\1/10W\24K\±1%\0603       | R9                                               |
| SMT resistor\1/10W\27K\±1%\0603       | R161                                             |
| SMT resistor\1/10W\30K\±1%\0603       | R204                                             |
| SMT resistor\1/10W\33K\±1%\0603       | R150,R180,R63,R106                               |
| SMT resistor\1/10W\36K\±1%\0603       | R168                                             |
| SMT resistor\1/10W\43K\±1%\0603       | R95,R53                                          |
| SMT resistor\1/10W\47K\±1%\0603       | R4,R185,R207,R212,R208,R215                      |
| SMT resistor\1/10W\51K\±1%\0603       | R195,R196                                        |
| SMT resistor\1/10W\75K\±1%\0603       | R30                                              |
| SMT resistor\1/10W\84.5K\±1%\0603     | R213,R244                                        |
| SMT resistor\1/10W\100K\±1%\0603      | R211                                             |
| SMT resistor\1/10W\120K\±1%\0603      | R92                                              |
| SMT resistor\1/10W\160K\±1%\0603      | R23                                              |
| SMT resistor\1/10W\200K\±1%\0603      | R149                                             |
| SMT resistor\1/10W\220K\±1%\0603      | R84                                              |
| SMT resistor\1/10W\249K\±1%\0603      | R62,R105                                         |
| SMT resistor\1/10W\300K\±1%\0603      | R44                                              |
| SMT resistor\1/10W\360K\±1%\0603      | R40                                              |
| SMT resistor\1/10W\470K\±1%\0603      | R99,R89                                          |
| SMT resistor\1/10W\3.6M\±5%\0603      | R191,R192                                        |
| SMT resistor\1/10W\4.7M\±1%\0603      | R61,R103                                         |
| SMT resistor\1/8W\3.3R\±1%\0805       | R119,R123                                        |
| SMT resistor\1/4W\0R\±1%\1206         | R127,RA14,RX2                                    |
| SMT resistor\1/4W\3.3R\±1%\1206       | R121,R122,R124,R125                              |
| SMT resistor\1/4W\5.1R\±1%\1206       | R1,R46                                           |
| SMT resistor\1/4W\10R\±1%\1206        | RA5,RA6,RA9                                      |
| SMT resistor\1/4W\100R\±1%\1206       | R47,R48,R171,R166,R160,R155,R47,R48,R219         |
| SMT resistor\1/4W\1K\±1%\1206         | RA13                                             |
| SMT resistor\1/4W\3.6K\±1%\1206       | R66,R69                                          |
| SMT resistor\1/4W\8.2K\±1%\1206       | R56                                              |
| SMT resistor\1/4W\20K\±1%\1206        | R172                                             |
| SMT resistor\1/4W\1M\±1%\1206         | RA1,RA2,RA3,RA4                                  |
| SMT resistor\1/4W\2M\±1%\1206         | RA10,RA11                                        |
| SMT resistor\1W\0R\±1%\2512           | RA29                                             |
| SMT resistor\1W\0.33R\±1%\2512        | RA27,RA26                                        |
| SMT resistor\1W\100K\±5%\2512         | RA7,RA8                                          |
| SMT capacitor\9PF\50V\±0.25%\0603\NPO | C134,C135                                        |
| SMT capacitor\22PF\50V\±5%\0603\NPO   | C19,C36                                          |
| SMT capacitor\47PF\50V\±5%\0603\NPO   | C7,C8,C9,C10,C23,C34,C67,C68,C92,C31,C12,C20,C13 |
| SMT capacitor\100PF\50V\±5%\0603\NPO  | C1,C2,C6                                         |

| DESCRIPTION                             | REF DESIGNATION                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SMT capacitor\100nF\50V\±10%\0603\X7R   | CM22,CM23,CM1,CM2,CM3,CM4,CM5,CM6,CM7,CM8,CM9,CM10,CM11,CM12,C17,C18,C26,C29,C30,C60,C62,C71,C76,C88,C89,C96,C97,C99,C104,C105,C107,C108,C109,C110,C111,C113,C114,C117,C127,C112,C78,C79,C103,CA19 |
| SMT capacitor\1uF\25V\±10%\0603\X5R     | C27,C46,C98,C115,C120,C136                                                                                                                                                                         |
| SMT capacitor\10uF\6.3V\±10%\0603\X5R   | C129,C130,C133                                                                                                                                                                                     |
| SMT capacitor\220PF\100V\±10%\0603\X7R  | C51,C65                                                                                                                                                                                            |
| SMT capacitor\33nF\50V\±10%\0603\X7R    | C35,C39,C42,C77                                                                                                                                                                                    |
| SMT capacitor\470PF\50V\±10%\0603\X7R   | C75                                                                                                                                                                                                |
| SMT capacitor\47nF\50V\±10%\0603\X7R    | CA21                                                                                                                                                                                               |
| SMT capacitor\4.7uF\10V\±10%\0603\X5R   | C137,C138                                                                                                                                                                                          |
| SMT capacitor\680PF\100V\±10%\0603\X7R  | C82,C84,C83                                                                                                                                                                                        |
| SMT capacitor\1nF\100V\±10%\0805\X7R    | C55,C58,C56,C57,CM14,CM15,CM16,CM17                                                                                                                                                                |
| SMT capacitor\10nF\50V\±10%\0805\X7R    | C33,C59,C61,C63                                                                                                                                                                                    |
| SMT capacitor\100nF\100V\±10%\0805\X7R  | C11,C94,C140,C132,C131,C124,CM18,CM19,CM20,CM21                                                                                                                                                    |
| SMT capacitor\1uF\50V\±20%\0805\X7R     | C40,C41,C72,C73,CA12                                                                                                                                                                               |
| SMT capacitor\47PF\1KV\±10%\1206\X7R    | CA3                                                                                                                                                                                                |
| SMT capacitor\220PF\100V\±10%\1206\X7R  | CA2,CA6,CA11                                                                                                                                                                                       |
| SMT capacitor\10uF\50V\±10%\1206\X7R    | C122,C123,C125,C126                                                                                                                                                                                |
| SMT capacitor\1nF\1KV\±10%\1206\X7R     | C141                                                                                                                                                                                               |
| SMT diode\1/2W\LL4148\LL-34\ST          | D5,D9,D10,D11,DA8,DA9,D12                                                                                                                                                                          |
| SMT diode\1/2W\18V\LL-34                | ZD1                                                                                                                                                                                                |
| SMT diode\FR107(RS1M)\D-SMA\DO-214AC    | DA4,DA5,DA6,DA7                                                                                                                                                                                    |
| SMT diode\1N5819(SS14)\DO-214AC\MDD     | D13,D16                                                                                                                                                                                            |
| SMT diode\1N4007(M7)\D-SM\MDD           | D6,D7,D18                                                                                                                                                                                          |
| SMT diode\BAV99(A7)\SOT23\FAIRCHILD&LRC | D1,D2,D3,D4,D14,D15,D19                                                                                                                                                                            |
| SMT diode\BAT54C(WW1)\SOT-23            | D8                                                                                                                                                                                                 |
| SMT diode\US2J\DO-214AC                 | DA1,DA2                                                                                                                                                                                            |
| SMT diode\NPN\MMBT5551\SOT23            | Q1,Q3,Q4,Q5,Q7,Q8,Q10,Q14,Q17,Q18,Q11,Q12,Q21,Q22                                                                                                                                                  |
| SMT diode\PNP\MMBT5401\SOT23            | Q2,Q6,Q9,Q15,Q16                                                                                                                                                                                   |
| SMT diode\NPN\MMBT4401\SOT23\LRC        | Q19,Q20                                                                                                                                                                                            |
| SMT IC\CJ431\SOT23\                     | U14,U13,U15                                                                                                                                                                                        |
| SMT IC\EL817S-C\SOP4                    | U12,U9                                                                                                                                                                                             |
| SMT IC\OB2362\SOT23-6\                  | UA3                                                                                                                                                                                                |
| SMT IC\SH88F2051BL/O16LR\SOP16          | U7                                                                                                                                                                                                 |
| SMT IC\EML3190\E-SOP-8L                 | U11                                                                                                                                                                                                |
| SMT IC\EML3193B\SOP8                    | U10                                                                                                                                                                                                |
| SMT IC\TPA3245DDVR\TI                   | IC3                                                                                                                                                                                                |
| SMT IC\TL074CN\SO14                     | U3,U4,U5,U6                                                                                                                                                                                        |
| SMT IC\NE5532ADR\SOIC-8_3.9X4.9MM\      | U8                                                                                                                                                                                                 |
| SMT IC\OPA1679\SOP14                    | U1,U2                                                                                                                                                                                              |
| SMT IC\LMV358IDR\SOIC-8\TI              | IC21                                                                                                                                                                                               |
| SMT inductor\D6mm\10uH\2A\1210          | L1                                                                                                                                                                                                 |

| DESCRIPTION                                                 | REF DESIGNATION                                                   |
|-------------------------------------------------------------|-------------------------------------------------------------------|
| SMT inductor\D6mm\22uH\2A\1210                              | L7,L8                                                             |
| SMT inductor\D6mm\4.7uH\2A\1210                             | L9,L32,L33                                                        |
| SMT magnet bead\300R\500mA\0603                             | RL6                                                               |
| SMT magnet bead\120R\0603                                   | RL1,RL2,RL3,RL7,RL8                                               |
| SMT magnet bead\120R\3A\±25%\0805                           | L3,L4,L15,L26,L29,L30,L16,L17,L18,L19,L20,L21,L22,<br>L23,L24,L25 |
| SMT magnet bead\100M\300R\3A\0805                           | RL28,RL12                                                         |
| SMT magnet bead\100M\2K\0805                                | RL9,RL10,RL11                                                     |
| SMT inductor\10uH\6A\12*12*7mm                              | L2,L5,L10,L11                                                     |
| SMT TVS diode\PESD0603V09P03\0603                           | ESD1,ESD2,ESD3,ESD4,ESD5,ESD8,ESD6,ESD7,<br>ESD9,ESD10            |
| SMT LED\1209-0.9T\RYGB                                      | L12                                                               |
| MSMD075\33(0.75A/33V)\1812                                  | PTC1,PTC2                                                         |
| Ceramic capacitor10nF\1KV\±20%\blue color\<br>P=5mm\L=3.5mm | CA10                                                              |
| MET capacitor\1nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm        | CH5,CH6,CH7                                                       |
| MET capacitor\1.2nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm      | CH1                                                               |
| MET capacitor\10nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm       | CL10                                                              |
| MET capacitor\100n-<br>F\100V\±5%\7.2*6.5*2.5mm\L=3.5mm     | C15,C85,C90,C91,CL14,CL9                                          |
| MET capacitor\1uF\100V\±5%\7.2*6*11mm\<br>L=3.5mm           | C47,C50,C52,C53                                                   |
| MET capacitor\150n-<br>F\100V\±5%\7.2*6.5*2.5mm\L=3.5mm     | CL11,CL12,CL5,CL6                                                 |
| MET capacitor\180nF\63V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm       | CL2                                                               |
| MET capacitor\5.6nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm      | CH9                                                               |
| MET capacitor\56nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm       | CH3                                                               |
| MET capacitor\220n-<br>F\100V\±5%\7.2*7.5*3.4mm\L=3.5mm     | CL13                                                              |
| MET capacitor\2.7nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm      | C16,CH12                                                          |
| MET capacitor\39nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm       | CL3                                                               |
| MET capacitor\3.3nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm      | CH8,CH13                                                          |
| MET capacitor\330nF\63V\±5%\7.2*7.5*3.4mm\<br>L=3.5mm       | CL7                                                               |
| MET capacitor\4.7nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm      | CH10,CH11,CL8,CL4                                                 |
| MET capacitor\47nF\100V\±5%\7.2*6.5*2.5mm\<br>L=3.5mm       | C28                                                               |
| Y capacitor\470PF\400V\±20%\P=10mm\<br>L=8mm                | CY1,CY2,CY4                                                       |

| DESCRIPTION                                                                                           | REF DESIGNATION              |
|-------------------------------------------------------------------------------------------------------|------------------------------|
| Metallized polypropylene capacitor\5.6nF\1250V\P=10K7.5mm\编带式                                         | CA9                          |
| X capacitor\220nF\275V\±20%\18*6*12mm\ P=15mm\L=3.5mm                                                 | CX1,CX2                      |
| Aluminum electrolytic capacitor\2.2uF\50V\±20%\D5*11mm\L=3.5mm                                        | CA17                         |
| Aluminum electrolytic capacitor\10uF\50V\±20%\D4*7mm\L=3.5mm                                          | C4,C5                        |
| Aluminum electrolytic capacitor\22uF\25V\±20%\D4*7mm\L=3.5mm                                          | C101,C102                    |
| Aluminum electrolytic capacitor\47uF\35V\±20%\D5*11mm\L=3.5mm                                         | C3,C14                       |
| Aluminum electrolytic capacitor\22uF\50V\±20%\D5*11mm\L=3.5mm                                         | C22,C37,C70                  |
| Aluminum electrolytic capacitor\47uF\50V\±20%\D6.3*12mm\L=3.5mm                                       | CA18                         |
| Aluminum electrolytic capacitor\100uF\35V\±20%\D6.3*11mm\L=3.5mm                                      | C100,C86,C87,CA4,CA5,CA7,CA8 |
| Aluminum electrolytic capacitor\220uF\10V\±20%\D5*11mm\L=3.5mm                                        | C95                          |
| Aluminum electrolytic capacitor\220uF\25V\±20%,Φ6.3*12mm\L=3.5mm                                      | C118,C119,C69                |
| Aluminum electrolytic capacitor\470uF\25V\±20%,Φ8*14mm\L=3.5mm                                        | C106                         |
| High frequency low resistance aluminum electrolytic capacitor\47uF\63V\±20%\D8*12mm\L=3.5mm           | C21                          |
| High frequency low resistance aluminum electrolytic capacitor\470uF\35V\±20%\ D10*13mm\L=3.5mm\5000H  | C43,C80                      |
| High frequency low resistance aluminum electrolytic capacitor\1500uF\35V\±20%\ D13*21mm\L=3.5mm\5000H | CA13,CA14,CA15               |
| High frequency low resistance aluminum electrolytic capacitor\120uF\400V\±20%\ D18*36mm\L=3.5mm       | C151                         |
| PIN header\4P\P=2.0mm\180 degree                                                                      | CON1                         |
| Male jack\2532-04-180 degree                                                                          | J3,J4                        |
| Fuse\2A\250V\8.3*4.8*7.75\L=3.5mm\                                                                    | F1                           |
| Inductor\1/2W\1mH\vertical\L=3.5mm                                                                    | L6,L13                       |
| Magnet bead\D3.5*9mm\vertical\P=5mm\L=3.5mm                                                           | L27,L28                      |
| Inductor\22uH\3A\D8*10mm\P=5mm\L=6mm                                                                  | L31                          |
| Common mode choke\DU1515\22mH                                                                         | L35                          |
| Difference mode choke\30mH\T20*12*10\0.6 copper wire                                                  | L36                          |
| Difference mode choke\2mH\T14*8*7\0.65 copper wire                                                    | L14                          |
| Transformer\EE33\Alpha65                                                                              | T1                           |
| NTC\2.5D-15\P=7.5mm\L=3.5mm\K feet                                                                    | RT1                          |

| DESCRIPTION                                   | REF DESIGNATION |
|-----------------------------------------------|-----------------|
| Varistor\10D471K\P=7.5mm\L=3.5mm              | VR3             |
| NTC\100K\±5%\L=19mm\                          | RT2             |
| D1*15mm\black                                 |                 |
| Brigde rectifier\RS406L&KBL406\H=10mm\L=3.5mm | BD1             |
| MOSFET\SVF10N65\TO-220F\                      | Q13             |
| Brigde rectifier\MBRF20200CT\TO-220F\         | DA3             |
| EMI magnet\TC5B\3.5*4*1.5                     |                 |
| 25.1*17.4*0.5mm\silicon sheet                 |                 |
| 23*15*10.5mm\ALU\black                        | Q13             |
| 45*23.5*16mm\ALU\black                        | DA3             |
| M3*8\head 6.0                                 |                 |
| RCA jack\1P\AV1-8.3-31A+01AB\white            | RCA1            |
| Slider switch\SS-12F09-G7                     | SW1,SW2         |
| Single potentiometer\R0972FN-FB14A4-B103-0X0\ | VR1-2           |
| XLR female jack\XLR-16D\                      | XLR1            |
| CK-6.35-31-5P                                 | CK1             |
| 4P\UL2547\26#\L=400\                          |                 |
| 350*50*3\black                                |                 |
| 25*6*19.7\ALU\nature color                    |                 |
| 29*10*1.0mm\                                  |                 |
| S5*15.5mm\                                    |                 |
| S5*20mm*M3                                    |                 |
| M3*6\head 5.2\                                |                 |
| M4*8\head 6.7\                                |                 |
| M3*12\head 6.0\                               |                 |
| 14*10*0.1mm\                                  |                 |
| 113*81.5*21\EVA\black                         |                 |
| Male jack\3961-03-180 degree\                 | OUTA1           |
| 13.5*12*13\EVA\black                          |                 |
| PST-101FS\3P\ST-A01-004L7                     | IN1             |
| Fuse\T2AL\250V\5*20mm                         |                 |
| 2 layers PCB\FR4\TS.5007.A\                   |                 |
| V1.0\34.5*30*1.6mm\green color200224          |                 |
| 2 layers PCB\FR4\TS.5008.A\                   |                 |
| V1.0\26.56*26.2*1.6mm\green color200224       |                 |
| 28.4*30*10\EVA(UL94-V0)\black                 |                 |
| 26.7*25.8*3.5\EVA\black                       |                 |
| 65A knob                                      |                 |
| D3*8\head 5.2                                 |                 |
| M3*8\head 5.2                                 |                 |
| M3*10\head 5.3                                |                 |
| M3*8\head 5.7                                 |                 |
| D2.5*100mm\white                              |                 |

| DESCRIPTION                      | REF DESIGNATION |
|----------------------------------|-----------------|
| 2P\UL1617\20#\260                | SW1             |
| 250*50*3\black                   |                 |
| 300*50*3\black                   |                 |
| black ground with white printing |                 |
| 13*****\30*15mm\                 |                 |
| 28*18.7*3\38degree EVA\black     |                 |
| RS601&PS8A-2-B1B14-1H-38         |                 |
| 313.6*183.6*3.0\ALU\black        |                 |
| 140*15.5*1.0\EVA\black           |                 |
| 140*25.5*1.0\EVA\black           |                 |
| 291*10.5*1.0\EVA\black           |                 |
| 170*10.5*1.5\EVA\black\Alpha65   |                 |
| 314*10.5*1.5\EVA\black\Alpha65   |                 |
| 4P\UL1007\20#\                   |                 |
| EMI magnet\T25*12*15\            |                 |
| EU power\EL-202+701A\1.83m\black |                 |

# ALPHA 50 & 65 EVO

Electronic Diagrams

Top Layout & Silkscreen



# ALPHA 50 & 65 EVO

Electronic Diagrams

Bottom Layout & Silkscreen



