J4 V_OUT
GND
J5 JST_07
ON_OFF
FN
GND

D1 SMAJ5.0A/6.0A/13.0A/26A
GND
D2 MBR1045
GND

Q2 BT152-800R
+5V
R13 1k
Crowbar
Q3 2N3904
GND

R12 1k
+5V
Q4 2N3904
GND
R11 3.9V/5.6V/13V/27V 120
R10 1k
R14 10k
GND

C11 100n 50V
GND

D4 3.9V/5.6V/13V/27V
R6 1k
GND

C15 100n 50V
GNDS
C14 100u 25V
GNDS
+15V

SMAJ5.0A/6.0A/18.0A/33A
IRF1404/IRFB4110
D7
Q6
R9 47k
R21 10

D5 15V
D3 15V
R18 47k
R19 10
GNDS

U3 TLP250
+15V
GNDS
R20 270
ON_OFF
GND

R17 1k
FuseBlow
+5V
Q5 2N3904
GND

R15 1k
R16 10k
GND

Values for 3.3, 5, 12, ADJ

R8 10k
+5V
U2B LM393
UnderVoltage
OverVoltage

R4 30k/120k/330k/360k %1
R5 150k/150k/100k/47k
GND
R7 10k
+5V

R3 68k/180k/560k/330k %1
R2 150k/150k/130k/33k %1
GND
U2A LM393
R1 1k
+5V
C1 100n 50V
U1 TL431LP
GND

SMAJ5.0A/6.0A/18.0A/30A
IRF1404/IRFB4110
D6
Q8
F1 10A
HS1 Heatsink
HS2 Heatsink

C10 100p 50V
GND
C9 1n 50V
GND
C8 10n 50V
GND
C7 100n 50V
GND
C6 1u 50V
GND
C5 470u 50V
GND
C4 470u 50V
GND

L1 4u7
C3 330u 50V
GND
J1 V_IN

PS1 ROE-0515S
+15V
C13 100n 50V
GNDS
PWR_FLAG
+VOUT -VOUT
+VIN   -VIN
C12 4u7 50V
+5V
GND
PWR_FLAG
PWR_FLAG GND
PWR_FLAG GNDS
PWR_FLAG +5V

J3 5V_IN
+5V
GND

C2 100n 50V
U2C LM393
+5V
GND

R24 10k
+5V
FN
Q1 2N3904
GND
R22 10k
R23 100k
J2 JST_02 TH1
+5V
J6 JST_02 TH2

H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole

Bill of Materials

Protection

Export Date: Wed Aug 27 04:54:44 PM +03 2025

Total Components: 42

Reference	Value	Footprint	Quantity	Rating/Spec
C10	100p	Capacitor_THT:C_Disc_D5.0mm_W2.5mm_P5.00mm	1	50V
C9	1n	Capacitor_THT:C_Disc_D5.0mm_W2.5mm_P5.00mm	1	50V
C8	10n	Capacitor_THT:C_Disc_D5.0mm_W2.5mm_P5.00mm	1	50V
C1,C2,C7,C11,C13,C15	100n	Capacitor_THT:C_Disc_D5.0mm_W2.5mm_P5.00mm	6	50V
C6	1u	Capacitor_THT:C_Disc_D5.0mm_W2.5mm_P5.00mm	1	50V
C14	100u	Capacitor_THT:CP_Radial_D5.0mm_P2.50mm	1	25V
C3	330u	Capacitor_THT:CP_Radial_D10.0mm_P5.00mm	1	50V
C4,C5	470u	Capacitor_THT:C_Radial_D10.0mm_H20.0mm_P5.00mm	2	50V
J3	5V_IN	Connector_JST:JST_XH_B2B-XH-A_1x02_P2.50mm_Vertical	1	
F1	10A	TerminalBlock_Phoenix:TerminalBlock_Phoenix_PT-1,5-2-5.0-H_1x02_P5.00mm_Horizontal	1	
R19,R21	10	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	2	
D3,D5	15V	Diode_THT:D_DO-41_SOD81_P10.16mm_Horizontal	2	
R11	120	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	
R20	270	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	
R1,R6,R10,R12,R13,R15,R17	1k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	7	
R7,R8	10k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	2	%1
R14,R16,R22,R24	10k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	4	
R9,R18	47k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	2	
R23	100k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	
R5	150k/150k/100k/47k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	%1
R2	150k/150k/130k/33k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	%1
Q1,Q3-Q5	2N3904	PCM_Package_TO_SOT_THT_AKL:TO-92_Inline_Wide_EBC	4	
D4	3.9V/5.6V/13V/27V	Diode_THT:D_DO-41_SOD81_P10.16mm_Horizontal	1	
R4	30k/120k/330k/360k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	%1
C12	4u7	Capacitor_SMD:C_1206_3216Metric_Pad1.33x1.80mm_HandSolder	1	50V

Reference	Value	Footprint	Quantity	Rating/Spec
L1	4u7	Inductor_SMD:L_12x12mm_H8mm	1	15A
R3	68k/180k/560k/330k	Resistor_THT:R_Axial_DIN0207_L6.3mm_D2.5mm_P10.16mm_Horizontal	1	%1
Q2	BT152-800R	PCM_Package_TO_SOT_THT_AKL:TO-220-3_Vertical_KAG	1	
HS1,HS2	Heatsink	Power_Module_Library:TO-220_Heatsink	2	
Q6,Q8	IRF1404/IRFB4110	PCM_Package_TO_SOT_THT_AKL:TO-220-3_Vertical_GDS	2	
J2,J6	JST_02	Connector_JST:JST_EH_B2B-EH-A_1x02_P2.50mm_Vertical	2	
J5	JST_07	Connector_JST:JST_XH_B7B-XH-A_1x07_P2.50mm_Vertical	1	
U2	LM393	PCM_Package_DIP_AKL:DIP-8_W7.62mm_Socket	1	
D2	MBR1045	PCM_Package_TO_SOT_THT_AKL:TO-220-2_Vertical_KA	1	
PS1	ROE-0515S	Isolation_Trafo:CONV_ROE-0515S	1	
D1	SMAJ5.0A/6.0A/13.0A/26A	PCM_Diode_SMD_AKL:D_SMA	1	
D6	SMAJ5.0A/6.0A/18.0A/30A	PCM_Diode_SMD_AKL:D_SMA	1	
D7	SMAJ5.0A/6.0A/18.0A/33A	PCM_Diode_SMD_AKL:D_SMA	1	
U1	TL431LP	Package_TO_SOT_THT:TO-92_Inline	1	
U3	TLP250	Package_DIP:DIP-8_W7.62mm	1	
J1	V_IN	TerminalBlock_Phoenix:TerminalBlock_Phoenix_PT-1,5-2-5.0-H_1x02_P5.00mm_Horizontal	1	
J4	V_OUT	TerminalBlock_Phoenix:TerminalBlock_Phoenix_PT-1,5-2-5.0-H_1x02_P5.00mm_Horizontal	1	