Reduce R6 and
R7 to 10K for
+/-24V supply

C4
220µ 63V

MMBTA56
Q6
680Ω
R8
Q5
MMBTA56
3K3
R9
47K
R10

0Ω
R15

+40V

T5
+40V

C23
100n
GND

C12
220µ 63V
GND

C10
220µ 63V
GND

T7
GND

GND

Q19
ECX10N20

18K
R6
18K
R7

47p 100V
C3
680Ω
R11

D1
D2 LL4148
D3 LL4148
LL4148

470Ω
R19

MJE350
Q9

1K
R27
1K
R28

Q11
2SC3503
Q12
2SC3503

2SA1381
Q16

560
R33

C7
15p 200V

100Ω
R36

12V
ZD2
D7
LL4148

C9
220p

Bolt Q19 and Q21
to 0.8 deg per watt
heatsink or better
eg. Conrad MF20-50

0.22Ω 3W
R40

T3
OUT

OUT

J1
Conn_01x03_Pin
1
2
3

C1
470n 63V

R3
750Ω

100R
R1

C2
1n

0Ω
R2

GND

12V
ZD1

IC1
JFE2140DR
G1
S1
D1
VCH
VCL
D2
S2
G2

RV1
20K

100Ω
R4
100Ω
R5

Q3
MMBTA06
Q4
MMBTA06

1K
R49

C6
15p 200V

15K
R48

R48 and R49
must be 1%
thin film MELF

4K7
R17
220Ω
R21
150Ω
R25
150Ω
R26
220Ω
R32

Q10
MJE340

2SA1381
Q13
2SA1381
Q14

RV2
500Ω

Adjust RV2
for 50mA
output bias

C8
15p 200V

Q18
2SC3503

4K7
R35

D9
LL4148
12V
ZD4

C11
18p

220Ω
R44

Q21
ECX10P20

R42
0.22Ω 3W

R46
10Ω 1W

C14
22n
GND

T4
GND

GND

D4
D5 LL4148
D6 LL4148
LL4148

470Ω
R20
1K
R29
1K
R30

560
R34

C25
100n
GND

GND

GND

C13
220µ 63V

C15
220µ 63V

T6
-40V

-40V

47K
R14
3K9
R12

Q7
MMBTA06
Q8
MMBTA06

120Ω
R13

0Ω
R16

C5
220µ 63V

Adjust RV1 to
zero output DC
offset voltage

Q1 SST404 available from Future Electronics (https://www.futureelectronics.com)
Q19 ECX10N20 and Q20 ECX10P20 available from Profusion PLC (https://www.profisionplc.com)
All other parts available from Digikey, Mouser, etc.

H1
MountingHole
H2
MountingHole

Huskylogo1

Tseaclaid		
Sheet: /		
File: AEM6000 Based 50W Amp.kicad_sch		
Title: AEM6000 Based Mosfet Amp		
Size: B	Date: Feb 20 2024	**Rev: 1.1**
KiCad E.D.A. kicad 7.0.8		Id: 1/1