

The Shunty

Resistors : all - your favorite brand MF 0,25W /1%as example

POSITION	VALUE	pieces/pcb	note
R1,R1a,R2,R2a	1K5	4pcs	
R3,R3a,R6,R6a	150E to 240E	4pcs	
R4,R4a,R5,R5a	1K	4pcs	
R7,R7a,R15,R15a,R16,R16a,R21,R22, R23,R23a,R24,R24a	4E7	12pcs	see 1.
R8,R8a,R25,R25a	68K	4pcs	
R9,R9a,R26,R26a	6K8	4pcs	
R10,R10a,R11,R11a	33K	4pcs	
R12,R12a	390E	2pcs	
R13,R13a	27K	2pcs	
R14,R14a	10K	2pcs	
R17,R17a	82E	2pcs	
R18,R18a	22K	2pcs	
R19,R19a	2K2	2pcs	
R20,R20a	0 to 0E1	2pcs	
WR1,WR1a	4K7 multiturn	2pcs	screw on top

note 1 .

R7 (R7a) set(s) current through main CCS(s) (made with Q2+Q3 (Q2a+Q3a) ;
 $I_{ccs} = U_{be}/R$; here $0v65/4E7 \sim 140mA$.

Capacitors :

POSITION	VALUE	pieces/channel	raster mm	note
C1,C1a,C4,C4a,C6, C6a,C8,C8a,C11, C11a,C12,C12a,C13, C13a	$\mu 22 - 2\mu 2 / 63V$	14pcs	all 5 - 15 mm,except C1(a),C4(a), C12(a) only 15mm	
C2,C2a,C15,C15a, C16,C16a	1000 to 2200 μF	6pcs	5 - 8	see 2.
C3,C3a,C10,C10a	100 μF	4pcs	5	see 3.
C5,C5a,C14,C14a	220 $\mu F / 63V$	4pcs	5	
C7,C7a	47 – 100 $\mu F / 25V$	2pcs	5	
C9,C9a	10 $\mu F / 50V$	2pcs	5	
C17,C17a,C18,C18a	10n ceramic	4pcs	5	

note 2. depending of DC voltage you have after Graetz bridge , you'll put caps of 63V or even more ; say that you are safe with 63V caps if voltage on them is max 60V under load , and you use good quality caps.

note 3. C3(a) voltage must be at least 63V ; C10 voltage perfect even just 16V .

Semiconductors: general note – pinouts for european types

POSITION	type	pieces/channel	note
D1 – D5 , D1a – D5a	ZY10	10pcs	
D6,D6a,D7,D7a	anything 1A/100V	4pc	
Q1,Q2	IRF510,520,610,620	2pcs	
Q3,Q4,Q5,Q6,Q7,Q8, Q9	BC546C(B) ,BC550C any decent N bjt	7pc	see 4.
Q10,Q10a	BF245C	2pcs	
Q11	BDX54C	1pc	see 5.
Q1a,Q2a	IRF9510,9520,9610, 9620	2pcs	
Q3a,Q4a,Q5a,Q6a, Q7a,Q8a,Q9a	BC556C(B),BC560C any decent P bjt	7pcs	see 6.
Q11a	BDX53C	1pc	see 7.
U1,U1a	LM336Z-5	2pcs	

note 4. Q4/Q5 , Q6/Q7 matched pairs ,if possible

note 5. any decent 60V/10W/1A PNP darlington ;

note 6. Q4a/Q5a , Q6a/Q7a matched pairs ,if possible

note 7. any decent 60V/10W/1A NPN darlington ;

Heatsinks - little ones – 12C/W or better – two pcs per pcb ; larger one 3,5C/W or better – one piece per pcb

Various :

fuse holder – raster 23mm – 2pcs per pcb

Xformer – EI preferable , 82 to 100Vct / 300mA per channel (one Shunty) minimum .

see again **NOTE 2. !!!**

this child drawing of bird intentionally placed here ;)



