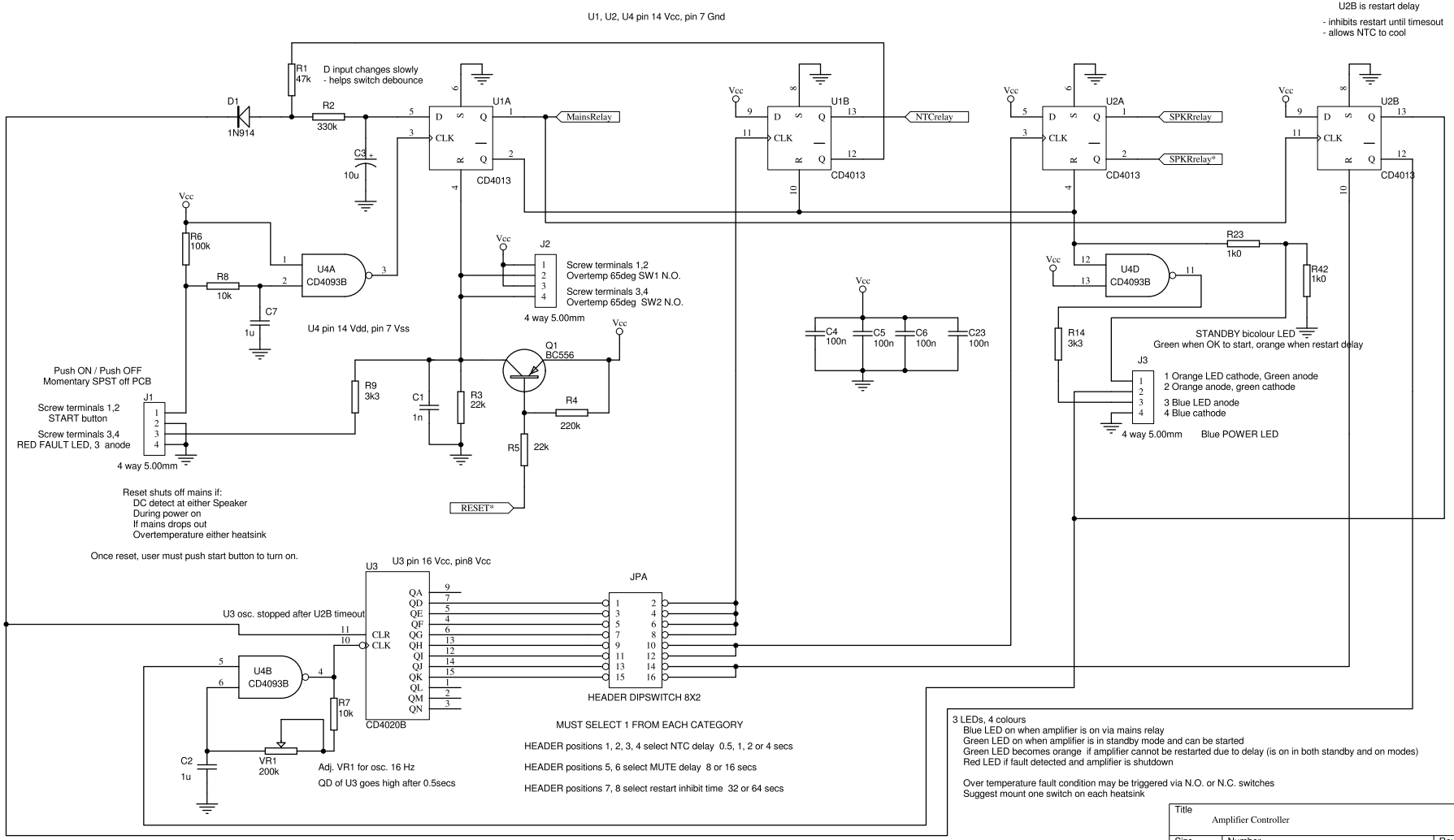
U1, U2, U4 pin 14 Vcc, pin 7 Gnd
U2B is restart delay
- inhibits restart until timesout
- allows NTC to cool
R1 47k
D input changes slowly
- helps switch debounce
D1 1N914
R2 330k
C3 10u
U1A CD4013
MainsRelay
U1B CD4013
NTCrelay
U2A CD4013
SPKRrelay
SPKRrelay*
U2B CD4013
R6 100k
R8 10k
C7 1u
U4A CD4093B
U4 pin 14 Vdd, pin 7 Vss
J2
Screw terminals 1,2
Overtemp 65deg SW1 N.O.
Screw terminals 3,4
Overtemp 65deg SW2 N.O.
4 way 5.00mm
R23 1k0
R42 1k0
U4D CD4093B
C4 100n
C5 100n
C6 100n
C23 100n
R14 3k3
STANDBY bicolour LED
Green when OK to start, orange when restart delay
J3
1 Orange LED cathode, Green anode
2 Orange anode, green cathode
3 Blue LED anode
4 Blue cathode
4 way 5.00mm
Blue POWER LED
Push ON / Push OFF
Momentary SPST off PCB
Screw terminals 1,2
START button
Screw terminals 3,4
RED FAULT LED, 3 anode
J1
4 way 5.00mm
Q1 BC556
R9 3k3
C1 1n
R3 22k
R4 220k
R5 22k
RESET*
Reset shuts off mains if:
DC detect at either Speaker
During power on
If mains drops out
Overtemperature either heatsink
Once reset, user must push start button to turn on.
U3
U3 pin 16 Vcc, pin8 Vcc
U3 osc. stopped after U2B timeout
U4B CD4093B
R7 10k
VR1 200k
C2 1u
Adj. VR1 for osc. 16 Hz
QD of U3 goes high after 0.5secs
CD4020B
JPA
HEADER DIPSWITCH 8X2
MUST SELECT 1 FROM EACH CATEGORY
HEADER positions 1, 2, 3, 4 select NTC delay 0.5, 1, 2 or 4 secs
HEADER positions 5, 6 select MUTE delay 8 or 16 secs
HEADER positions 7, 8 select restart inhibit time 32 or 64 secs
3 LEDs, 4 colours
Blue LED on when amplifier is on via mains relay
Green LED on when amplifier is in standby mode and can be started
Green LED becomes orange if amplifier cannot be restarted due to delay (is on in both standby and on modes)
Red LED if fault detected and amplifier is shutdown
Over temperature fault condition may be triggered via N.O. or N.C. switches
Suggest mount one switch on each heatsink
Title
Amplifier Controller
Size
A3
Number
Revision
2
Date: 24-Dec-2014
Sheet 1 of 3
File: E:\Documents\HiFi\amplifiers\F5\my F5\SCHEMATIC\AmpControlV2\AmpControlV2.ddb