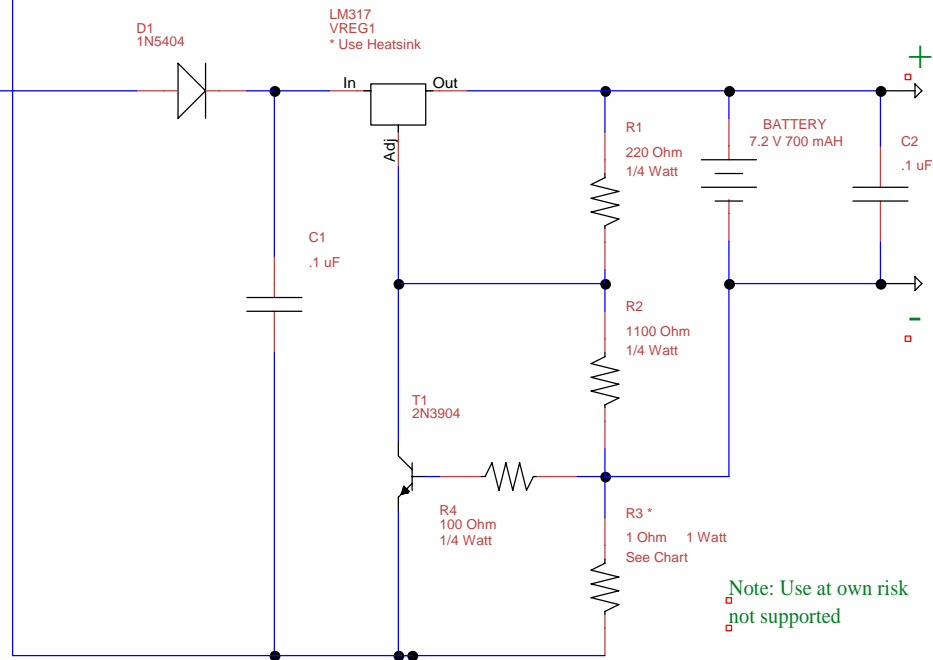


The diagram illustrates a 3-phase 4-wire system. It features three main horizontal red lines representing the phase conductors. A blue line, representing the neutral conductor, runs vertically through the center. At the top, a box contains a negative terminal symbol $(-)$ with a ground symbol (a downward arrow) and a red square. The neutral line connects to this ground. The system is protected by eight fuses: FUSE 1, FUSE 2, and FUSE 3 are on the left phase conductors; FUSE 4, FUSE 5, and FUSE 6 are on the right phase conductors. A central vertical blue line is labeled $(+)$ at the top and **3 AMPS Fast Blow** in the middle. Small black dots indicate connection points at the top and bottom of this central line to the phase conductors. A red square is located on the central blue line near the top.



Note: Use at own risk
not supported

REF	Part Number	Radio Shack	Digikey
R1	220 Ohm ¼ W	271-1313	OD221JE-ND
R2	1100 Ohm ¼ W	N/A	N/A
R3	1 Ohm	N/A	WHB1R0FECT-ND
R4	100 Ohm	271-1311	OD101JE-ND
C1	.1 uF	272-1053	399-4151-ND
C2	.1 uF	272-1053	399-4151-ND
D1	1N5404	276-1144	1N5404-E3/51GI-ND
VREG1	LM317	276-1778	LM317TFS-ND
T1	2N3904	276-2016	2N3904FS-ND

Trip Volts	R3 Ohms	Charge Peak Current	Charge Time (Hours)
0.6	1	0.600	1.167 *
0.6	1.1	0.545	1.283
0.6	1.2	0.500	1.400
0.6	1.3	0.462	1.517
0.6	1.4	0.429	1.633
0.6	1.5	0.400	1.750
0.6	1.6	0.375	1.867
0.6	1.7	0.353	1.983
0.6	1.8	0.333	2.100
0.6	1.9	0.316	2.217
0.6	2	0.300	2.333
0.6	2.1	0.286	2.450
0.6	2.2	0.273	2.567
0.6	2.3	0.261	2.683
0.6	2.4	0.250	2.800
0.6	2.5	0.240	2.917
0.6	2.6	0.231	3.033
0.6	2.7	0.222	3.150
0.6	2.8	0.214	3.267
0.6	2.9	0.207	3.383
0.6	3	0.200	3.500

Title FIRST Backup Charger		
Author Christopher E. Johnson cjohnson@ssvotech.org South Shore Vocational Technical High School		
File C:\FIRST BU CHARGER.dsn		Document
Revision 1.0	Date 02/11/2008	Sheets 1 of 1

