Bill of Materials for Battery Supply Unit 1a

Item	**Megalith**	**Trilith**	**Cromlech**	Manufacturer	Type	Distributor	Remark
R1	0.1R, 4W (*)	0.47R, 4W (*)	0.47R, 4W (*)	IRC	T-3	Distrelec	Wire Wound 1%
R2	1.0R, 4W	4.7R, 4W	4.7R, 4W	IRC	T-3	Distrelec	Wire Wound 1%
R3	240R, 0.5W	240R, 0.5W	240R, 0.5W	Beyschlag	MBB0207	Distrelec	Metal Film 1%
R4	10K, 0.5W (**)	5.1K, 0.5W (**)	1.2K, 0.5W (**)	Beyschlag	MBB0207	Distrelec	Metal Film 1%
R5	According to usage – Please refer to block diagram			Beyschlag	MBB0207	Distrelec	Metal Film 1%
R6	According to usage – Please refer to block diagram			Beyschlag	MBB0207	Distrelec	Metal Film 1%
C1	1nF, 250V	1nF, 250V	1nF, 250V	Wima	MKS	Distrelec, Farnell	Metalised Polyester
C2	1000uF, 100V	1000uF, 35V	1000uF, 35V	Philips, Elna	058, ROA	Distrelec, Farnell	Low ESR, Audio-Cap.
C3	1000uF, 100V	1000uF, 35V	1000uF, 35V	Philips, Elna	058, ROA	Distrelec, Farnell	Low ESR, Audio-Cap.
C4	10uF, 100V	10uF, 35V	10uF, 35V	Rubycon, Elna	YXA, ROA	Distrelec	Low ESR, Audio-Cap.
C5	10uF, 160V	2.2uF, 160V	2.2uF, 160V	RIFA, ERO	427,1841	Various	Metalised Polypropylen
D1	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
D2	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
D3	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
D4	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
D5	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
D6	MUR4100ERL	MUR4100ERL	MUR4100ERL	ON	20A, 600V	Distrelec	Ultra-Fast-Recovery
U1	LM350T	LM350T	LM350T	National	3A	Distrelec	Adj. Line Regulator

Charging the Lead Acid Battery - Some remarks and precautions !

For charging the Lead Acid Battery a well matched charger is of utmost importance concerning available capacity and life of battery. The used float charging method in which the battery, load and charger are connected in parallel, should supply a constant-voltage current. Charging considerations are:

1 Initial current should be 0.1 CA or smaller (C rated as capacity of battery, A as current in ampere).
2. Resistor R1 (*) controls the output impedance of the charger allowing a “taper-charge” characteristic to be generated. Current can be set at anywhere between 10 mA and 1.5 A by appropriate resistor choice. The regulator sets the output current at : Iout = 1.25/R1 .
3. Charging voltage depends on the maximal temperature the battery is used : 15C => 2.28 V/cell, 20C => 2.27V/cell, 25C => 2.26V/cell, 30C => 2.24V/cell, 35C => 2.23V/cell, 40C => 2.22V/cell (C rated as Degrees Centigrade).
4. The output charging voltage is set with resistors R4 and given by : Vout = 1.25 x (1 + R4/R3) .

Resistor values (*) and (**) should be adapted to your needs (battery type, capacity and max. temperature)