UAS

Dasar Elektronika

NO
DATE

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3. Dik = N_P = 300 V_S = 120 V Dit = I_S, N_S, jenis trafo ?
V_P = 12 V I_P = 0,6 A

Jawab = $\frac{V_P}{V_S} = \frac{I_S}{I_P} = \frac{12}{120} = \frac{I_S}{0,6} = 0,1 = \frac{I_S}{0,6}$

$I_S = 0,1 \cdot 0,6 = 0,06$ A

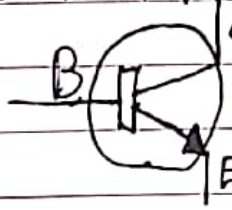
$\frac{N_P}{N_S} = \frac{V_P}{V_S} = \frac{300}{n_S} = \frac{12}{120} = \frac{300}{n_S} = 0,1$

$N_S = \frac{300}{0,1} = 3000$ lilitan

karena tegangan sekunder lebih besar dari pada tegangan primer maka jenis trafonya adalah trafo step UP

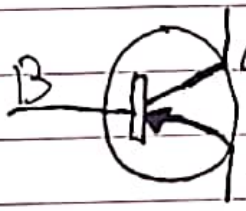
A. Fungsi transistor memiliki dua fungsi utama yaitu sebagai saklar elektronik dan penguat arus.
transistor Bipolar terdiri dari dua jenis yaitu transistor NPN dan PNP. transistor ini diantaranya adalah terminal basis, kolektor dan emitor.

Transistor NPN



Gambar simbol NPN

Transistor PNP



Gambar simbol PNP

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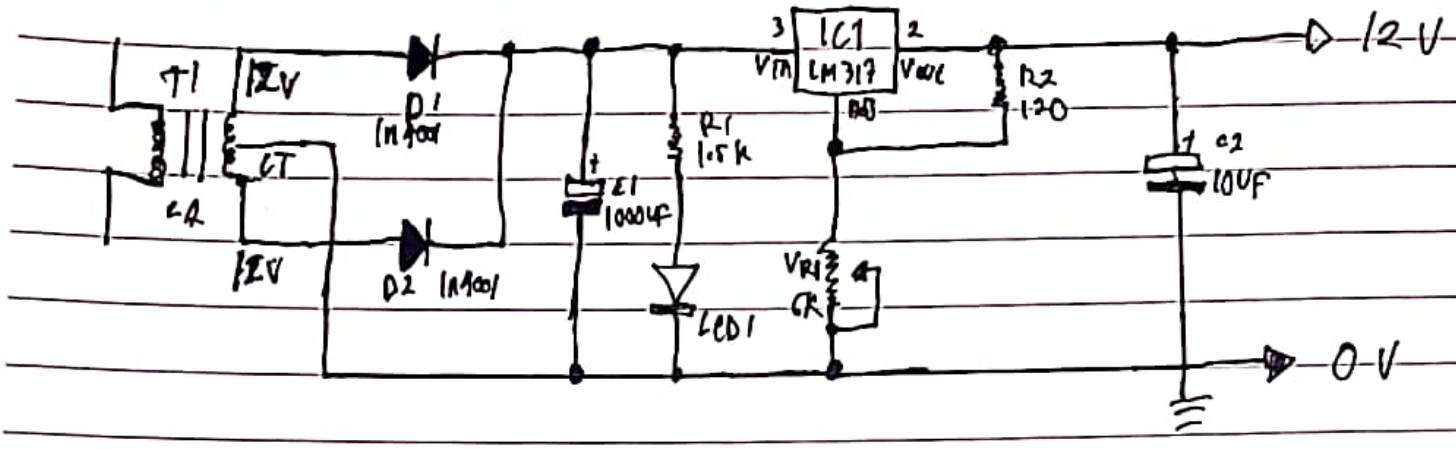
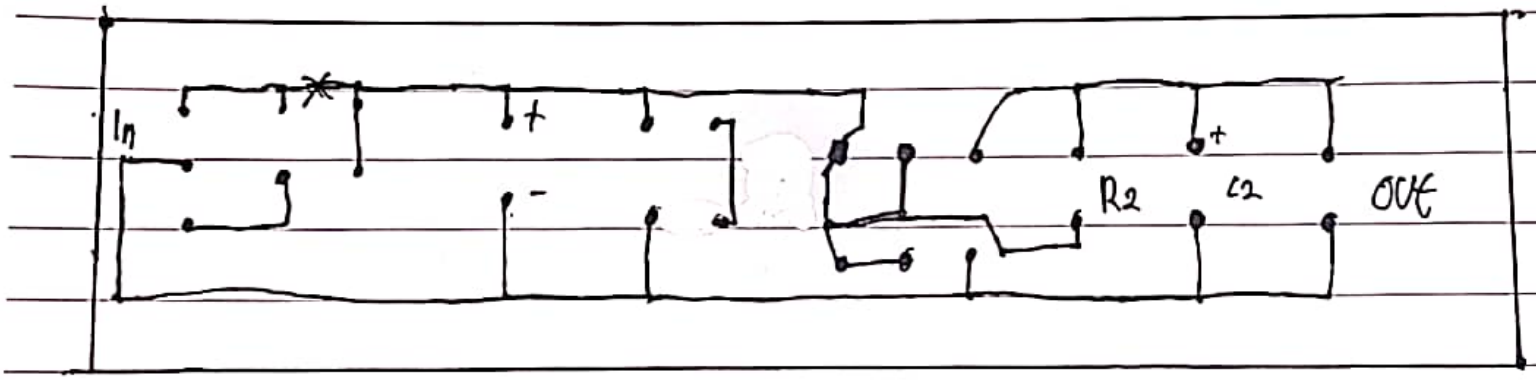
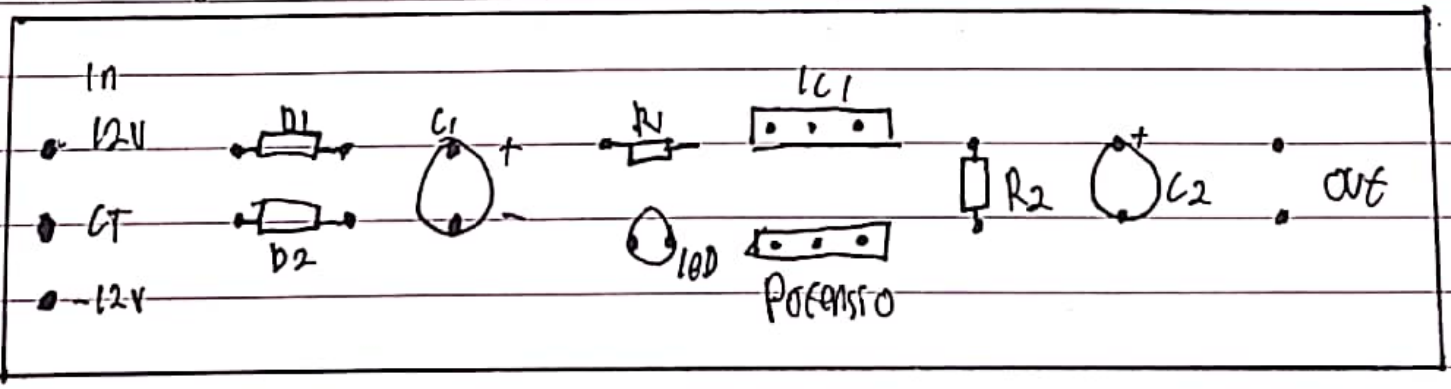
1. Rangkaian Power supply DC variabel 0 V - 12 V



2. Jalur PCB



Letak Komponen



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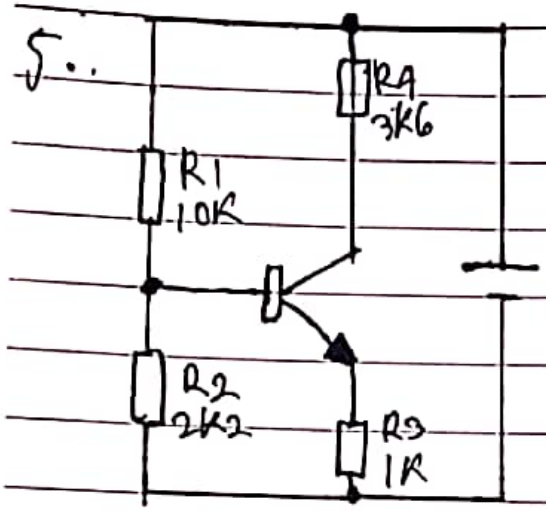

Dik : R1 = 10K = 10.000 V = 10V
R2 = 2K2 = 2200
R3 = 1K = 1000
R4 = 3K6 = 3600

$- Rt = \frac{R1 \cdot R2}{R1+R2} = \frac{10.000 \cdot 2200}{10.000+2200} = \frac{22.000.000}{12.200} = 1.803\ \Omega$

$- Vtt = \frac{Vcc \times R2}{R1+R2} = \frac{10 \cdot 2200}{10.000+2200} = \frac{22.000}{12.200} = 1,8\ V$

$Ie = (Vtt - Vbe) / (Rt / (Bet+1) + R4)$
$(1,8 - 0,7) / (1.803/(100+1)+3600)$
$= 1,1 / (17,851 + 3600$
$= 1,1 / 3617,851$
$= 0,0003\ A = 0,3\ A$

$Vce = Vcc - [Ie\ (Rc + R4)]$
$= 10 - [0,0003\ (1000 + 3600)]$
$= 10 - 1,38$
$= 8,62\ V$