

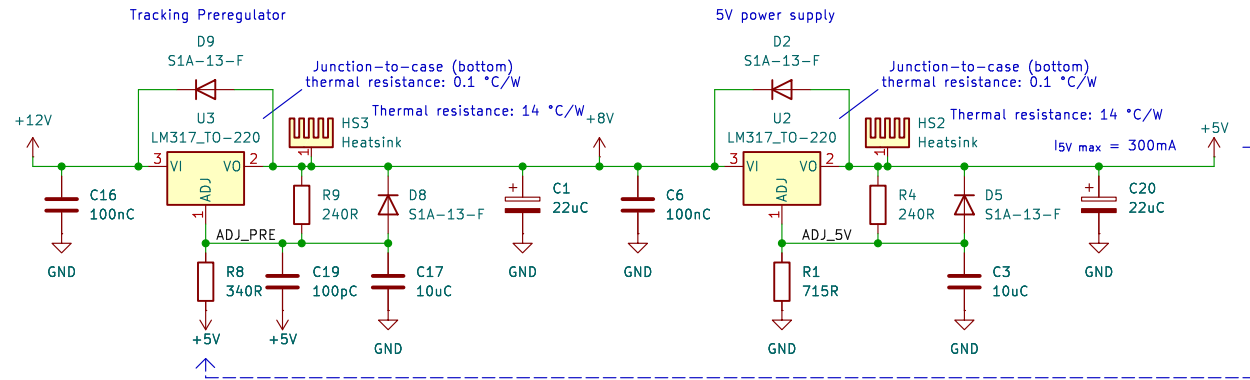
Thermal calculations

U1 power dissipation:
 $PD = PI - PO = (VI - VO) \cdot IO$
 $= (12 - 8) \cdot 0.3$
 $= 1.2 \text{ W}$

Thermal resistances:
 $\theta_{JA} = \theta_{JC} + \theta_{CS} + \theta_{SA}$
 $= 0.1 + 0.4 + 14$
 $= 14.5 \text{ }^{\circ}\text{C/W}$

Junction temperature rise:
 $(T_J - T_A) / PD = \theta_{JA}$
 $T_J = \theta_{JA} \cdot PD + T_A$
 $T_J = 14.5 \cdot 1.2 + 25$
 $T_J = 42.4 \text{ }^{\circ}\text{C}$

$T_{Jmax} = 125 \text{ }^{\circ}\text{C}$



Thermal calculations

U1 power dissipation:
 $PD = PI - PO = (VI - VO) \cdot IO$
 $= (8 - 5) \cdot 0.3$
 $= 0.9 \text{ W}$

Thermal resistances:
 $\theta_{JA} = \theta_{JC} + \theta_{CS} + \theta_{SA}$
 $= 0.1 + 0.4 + 14$
 $= 14.5 \text{ }^{\circ}\text{C/W}$

Junction temperature rise:
 $(T_J - T_A) / PD = \theta_{JA}$
 $T_J = \theta_{JA} \cdot PD + T_A$
 $T_J = 14.5 \cdot 0.9 + 25$
 $T_J = 38.5 \text{ }^{\circ}\text{C}$

$T_{Jmax} = 125 \text{ }^{\circ}\text{C}$

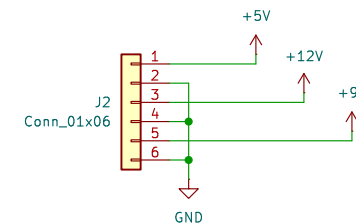
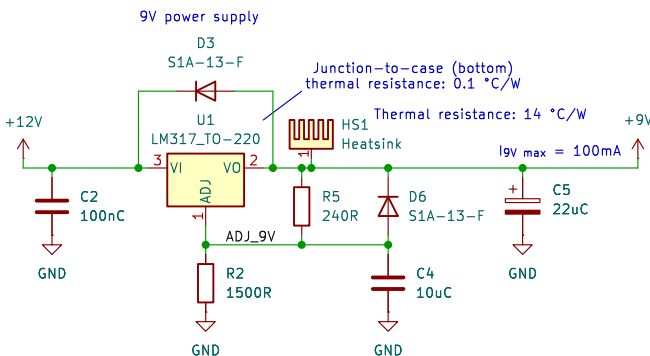
Thermal calculations

U1 power dissipation:
 $PD = PI - PO = (VI - VO) \cdot IO$
 $= (12 - 9) \cdot 0.1$
 $= 0.3 \text{ W}$

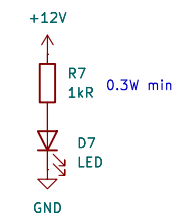
Thermal resistances:
 $\theta_{JA} = \theta_{JC} + \theta_{CS} + \theta_{SA}$
 $= 0.1 + 0.4 + 14$
 $= 14.5 \text{ }^{\circ}\text{C/W}$

Junction temperature rise:
 $(T_J - T_A) / PD = \theta_{JA}$
 $T_J = \theta_{JA} \cdot PD + T_A$
 $T_J = 14.5 \cdot 0.3 + 25$
 $T_J = 29.35 \text{ }^{\circ}\text{C}$

$T_{Jmax} = 125 \text{ }^{\circ}\text{C}$



Power ON indicator



Sheet: /
 File: Power_supply.kicad_sch

Title:

Size: A4
 KiCad E.D.A. 8.0.8

Date:

Rev:

Id: 1/1