

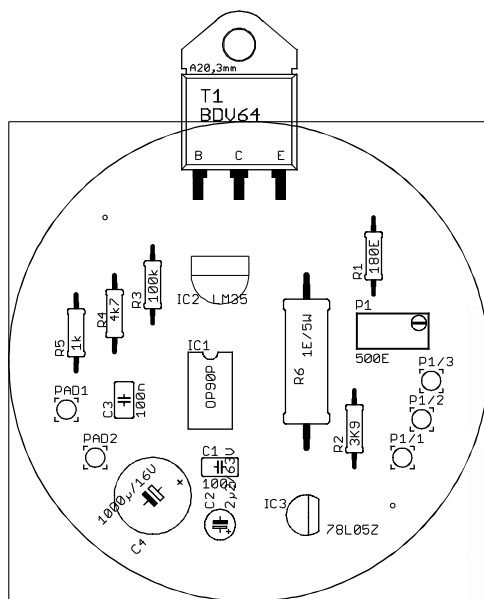
Projekt: 3D-Visualisierung

Vom Layout zur 3D-Vorschau

Berichte und Beschreibungen aus meinem Hobby-Keller.

Nachdem ich meine Leiterplatte mit EAGLE- CAD erstellt hatte, stieß ich bei einer Internetrecherche auf eine Möglichkeit diese vorab als 3D-Modell zu visualisieren. Mit EAGLE3D und POV-Ray kein Problem.

Da ich von dieser Möglichkeit angetan bin, möchte ich meinen Anwendungsfall einmal kurz darstellen!

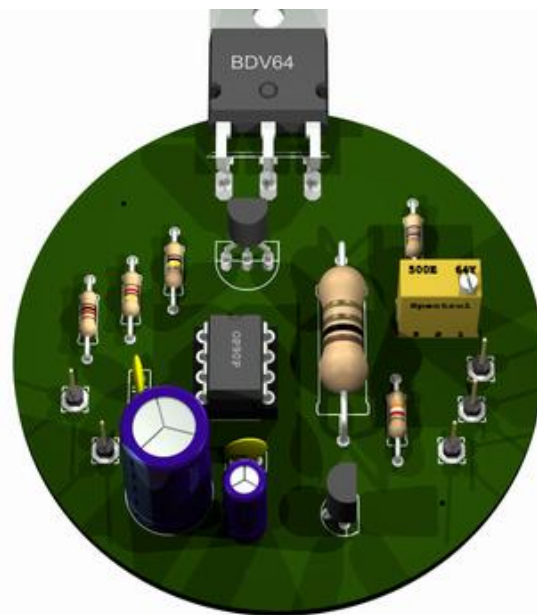


Bestückungsdruck in EAGLE-CAD

Das Programm Eagle3D wird im EagleCAD-Boardlayout als ulp gestartet.

POV-Ray besitzt eine Programmiersprache mit der die darzustellenden Objekte zu beschreiben sind.

Die POV-Ray gerechte Objektbeschreibung meiner Leiterplatte übernimmt genialer Weise das Programm EAGLE3D. Dabei stellt EAGLE3D ein eigenes 3D-Bauteilearchiv zur Verfügung.



Mit EAGLE3D und POV-Ray generierte Ansicht.

Da dieses Thema für mich absolutes Neuland ist verweise ich hier lediglich auf einige Quellen:

- <http://www.matwei.de>
- <http://www.povray.org>
- <http://www.basti-info.de/pov-ray/inhalt.htm>
- <http://www.f-lohmueller.de/>
- <https://ssl-id.de/b-redemann.de/sp-eagle3d.shtml>
- <http://de.wikipedia.org/wiki/Povray>

*Viel Spaß beim
Werkeln wünscht*



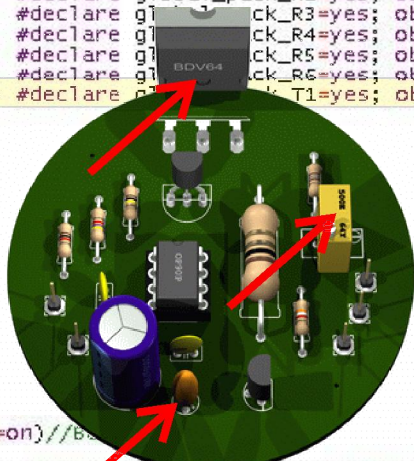
Als Anlage ein Beispiel für Objektkorrekturen „von Hand“.

Änderungen in Datei: Temperaturreferenz REV 1.1.pov

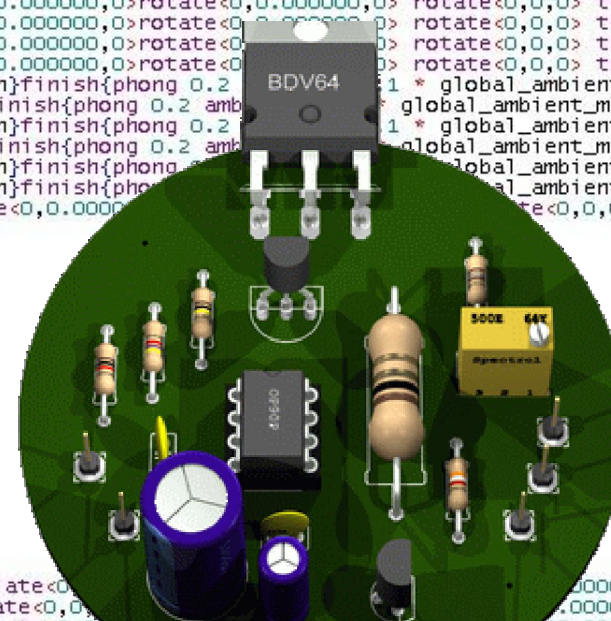
```

} //End difference(reale Bohrungen/Durchbrüche)
#end
#if(pcb_parts=on) //Bauteile
union{
  #ifndef(pack_C1) #declare global_pack_C1=yes; object {CAP_DIS_CERAMIC_25MM_50MM("100n",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<
  #ifndef(pack_C2) #declare global_pack_C2=yes; object {CAP_DIS_TT_2MM5_4MM ("2µ2/63V",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rotate<0,
  #ifndef(pack_C3) #declare global_pack_C3=yes; object {CAP_DIS_CERAMIC_25MM_50MM("100n",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rota
  #ifndef(pack_C4) #declare global_pack_C4=yes; object {CAP_DIS_ELKO_5MM_10MM("1000µ/16V",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-225.100000,0> rota
  #ifndef(pack_IC1) #declare global_pack_IC1=yes; object {IC_DIS_DIP8("OP90P",,"",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-270.000000,0> rotate<0,0,0>
  #ifndef(pack_IC1) object{SOCKET_DIP8()rotate<0,-270.000000,0> rotate<0,0,0> translate<26.670000,0.000000,27.940000>}#end
  #ifndef(pack_IC2) #declare global_pack_IC2=yes; object {TR_T092_L("LM35",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-180.000000,0> rotate<0,0,0> tra
  #ifndef(pack_IC3) #declare global_pack_IC3=yes; object {TR_T092_G("78L052",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rotate<0,0,0> tra
  #ifndef(pack_P1) #declare global_pack_P1=yes; object {RES_DIS_TRIM_S64Y("500E",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-270.000000,0> rotate<0,0,0>
  #ifndef(pack_P1_1) #declare global_pack_P1_1=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<5
  #ifndef(pack_P1_2) #declare global_pack_P1_2=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<5
  #ifndef(pack_P1_3) #declare global_pack_P1_3=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<5
  #ifndef(pack_PAD1) #declare global_pack_PAD1=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<7
  #ifndef(pack_PAD2) #declare global_pack_PAD2=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<1
  #ifndef(pack_R1) #declare global_pack_R1=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R2) #declare global_pack_R2=yes; object {RES_DIS_0207_10MM(texture{pigment{Orange}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},text
  #ifndef(pack_R3) #declare global_pack_R3=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R4) #declare global_pack_R4=yes; object {RES_DIS_0207_10MM(texture{pigment{Yellow}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},tex
  #ifndef(pack_R5) #declare global_pack_R5=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R6) #declare global_pack_R6=yes; object {RES_DIS_0617_22MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_T1) #declare global_pack_T1=yes; object {TR_S0T93_V("BDV64",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translat
} //End union
#end

```



Änderungen: C2 Elko
T1 legen
P1 drehen



```

#if(pcb_parts=on) //Bauteile
union{
  #ifndef(pack_C1) #declare global_pack_C1=yes; object {CAP_DIS_CERAMIC_25MM_50MM("100n",)translate<0,0,0> rotate<0,0.000000,0> rotate<0,0.000000,0> rotate<
  #ifndef(pack_C2) #declare global_pack_C2=yes; object {CAP_DIS_ELKO_5MM_10MM("2µ2/63V",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rotat
  #ifndef(pack_C3) #declare global_pack_C3=yes; object {CAP_DIS_CERAMIC_25MM_50MM("100n",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rota
  #ifndef(pack_C4) #declare global_pack_C4=yes; object {CAP_DIS_ELKO_5MM_10MM("1000µ/16V",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-225.100000,0> ro
  #ifndef(pack_IC1) #declare global_pack_IC1=yes; object {IC_DIS_DIP8("OP90P",,"Motorola",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-270.000000,0> rot
  #ifndef(pack_IC1) object{SOCKET_DIP8()rotate<0,-270.000000,0> rotate<0,0,0> translate<26.670000,0.000000,27.940000>}#end
  #ifndef(pack_IC2) #declare global_pack_IC2=yes; object {TR_T092_L("LM35",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-180.000000,0> rotate<0,0,0> tra
  #ifndef(pack_IC3) #declare global_pack_IC3=yes; object {TR_T092_G("78L052",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,-90.000000,0> rotate<0,0,0> tr
  #ifndef(pack_P1) #declare global_pack_P1=yes; object {RES_DIS_TRIM_S64Y("500E",)translate<0,0,0> rotate<0,0,0>rotate<0,0,0> rotate<0,0,0> translate<50.8
  #ifndef(pack_P1_1) #declare global_pack_P1_1=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<
  #ifndef(pack_P1_2) #declare global_pack_P1_2=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<
  #ifndef(pack_P1_3) #declare global_pack_P1_3=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<
  #ifndef(pack_PAD1) #declare global_pack_PAD1=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<
  #ifndef(pack_PAD2) #declare global_pack_PAD2=yes; object {PH_2MM_1X1()translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translate<
  #ifndef(pack_R1) #declare global_pack_R1=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R2) #declare global_pack_R2=yes; object {RES_DIS_0207_10MM(texture{pigment{Orange}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},tex
  #ifndef(pack_R3) #declare global_pack_R3=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R4) #declare global_pack_R4=yes; object {RES_DIS_0207_10MM(texture{pigment{Yellow}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},tex
  #ifndef(pack_R5) #declare global_pack_R5=yes; object {RES_DIS_0207_10MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_R6) #declare global_pack_R6=yes; object {RES_DIS_0617_22MM(texture{pigment{DarkBrown}finish{phong 0.2 ambient (0.1 * global_ambient_mul)}}},te
  #ifndef(pack_T1) #declare global_pack_T1=yes; object {TR_S0T93_H("BDV64",)translate<0,0,0> rotate<0,0.000000,0>rotate<0,0.000000,0> rotate<0,0,0> translat
} //End union
#end

```