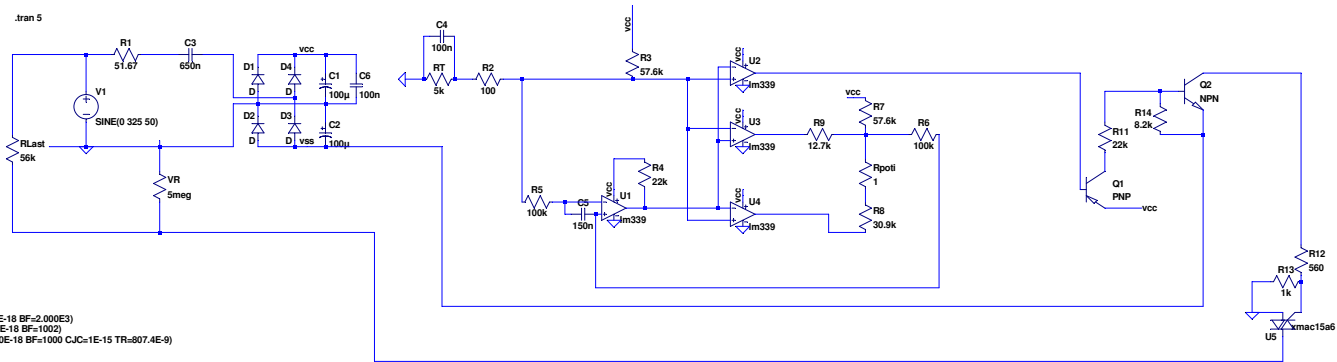


.Iran 5



```

.SUBCKT LM339 1 2 3 4 5
F1 9 3 V1 1
IEE 3 7 DC 100.0E-6
V11 21 1 DC .75
V12 22 2 DC .75
Q1 9 21 7 QM
Q2 8 22 7 QM
Q3 9 8 4 QM0
Q4 8 8 4 QM1
.MODEL QM PNP(S=800.0E-18 BF=2.000E3)
.MODEL QM1 NPN(S=800.0E-18 BF=1002)
.MODEL QM0 NPN(S=800.0E-18 BF=1000 CJC=1E-15 TR=807.4E-9)
E1 10 4 9 4 1
V1 10 11 DC 0
Q5 5 11 4 QCC
.MODEL QCC NPN(S=800.0E-18 BF=20.29E3 CJC=1E-15 TF=942.6E-12 TR=543.8E-9)
DP 4 3 DX
RP 3 4 46.3E3
.MODEL DX D(S=800.0E-18)
.ENDS

```

*Triac pinout: MT2 G MT1

```

*MAC15A6 MCE 2-27-96
*600V 15A pkg:TO-220 2,3,1
.SUBCKT XMAC15A6 1 2 3
QN1 5 4 3 NOUT OFF
QN2 11 6 7 NOUT OFF
QP1 6 11 3 POUT OFF
QP2 4 5 7 POUT OFF
DF 4 5 DZ OFF
DR 6 11 DZ OFF
RF 4 6 40MEG
RT2 1 7 18.8M
RH 7 6 87.5
RGP 8 3 23.1
RG 2 8 11.5
RS 8 4 102
DN 9 2 DIN OFF
RN 9 3 41.6
GNN 6 7 9 15.2M
GNP 4 5 9 3 18.1M
DP 2 10 DIP OFF
RP 10 3 29.5
GP 7 6 10 3 10.3M
.MODEL DIN D(S=45.8F)
.MODEL DIP D(S=45.8F N=1.2)
.MODEL DZ D(S=45.8F N=1.5 IBV=10U BV=400)
.MODEL POUT NPN(S=45.8F BF=5 CJE=4.02N TF=38.2U)
.MODEL NOUT NPN(S=45.8F BF=20 CJE=4.02N CJC=804P TF=2.55U)
.ENDS XMAC15A6

```

```

*MAC15A8 MCE 2-27-96
*600V 15A pkg:TO-220 2,3,1
.SUBCKT XMAC15A8 1 2 3
QN1 5 4 3 NOUT OFF
QN2 11 6 7 NOUT OFF
QP1 6 11 3 POUT OFF
QP2 4 5 7 POUT OFF
DF 4 5 DZ OFF
DR 6 11 DZ OFF
RF 4 6 60MEG
RT2 1 7 18.8M
RH 7 6 87.5
RGP 8 3 23.1
RG 2 8 11.5
RS 8 4 102
DN 9 2 DIN OFF
RN 9 3 41.6
GNN 6 7 9 15.2M
GNP 4 5 9 3 18.1M
DP 2 10 DIP OFF
RP 10 3 29.5
GP 7 6 10 3 10.3M
.MODEL DIN D(S=45.8F)

```