EXTERNAL

INTERNAL

LED DRIVER BOX with DALI Comms

Current
clamp

DALI Transmit/Receive circuitry

16V

Q9 2N2222

R22
82

D5
1N4148

R23
3k3

C1
10µ

U4
ZR431

3V3

R21
10k

D3
1N4148

D6
KDZ6_2B

R24
2k2

R26
10k

Microcontroller

Q8
2N3904

D2
1N4148

R20
10k

D1
1N4148

R25
10k

Q10
2N3904

V7
16
Rser=0.05

V8
3.3
Rser=0.1

connector

V3
16
Rser=0.1

Reverse
polarity
accident

.tran 0 10m 0 startup
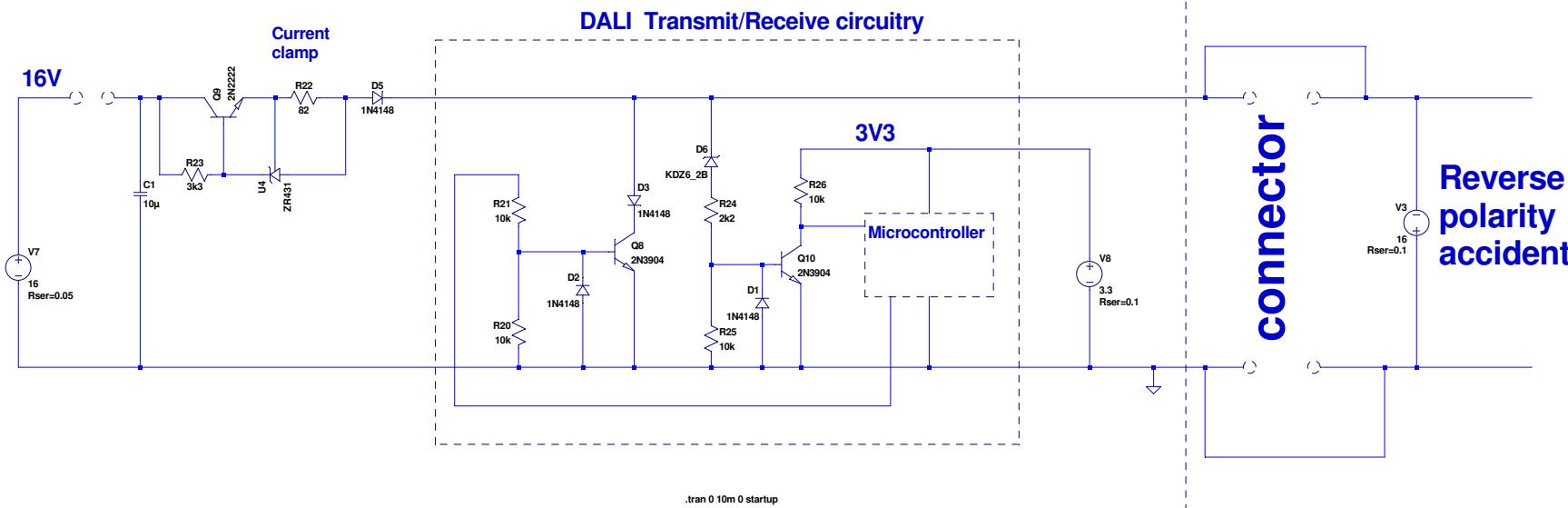
*ZETEX ZR431 Spice Model v1.0 Last Revised 31/3/2005
*
*NOTE: This is a simplified Model. Do not rely on this Model for
*validation of circuit stability. It does not accurately replicate
*stability boundary conditions with additional load capacitance.
*Check stability by normal breadboarding techniques.
*
.SUBCKT ZR431 1 2 3
*Connections Vz Vref Gnd
*Input current
L2 2 12 2E-9
Rin 12 13 Rmod1 20E6
Cin 12 13 1E-12
D1 13 12 Dmod
D2 12 11 Dmod
*Reference voltage, Voltage dependence
Iref 13 21 2.4985E-3
Rref 21 13 Rmod2 1000
G1 21 13 11 13 1.43E-6
*Gain, time constant and clamp voltage
G2 13 31 12 21 0.004
Rt1 31 13 1E8
Ct1 31 32 800E-12
Rt2 32 13 2000
Ct2 31 33 50E-12
Rt3 33 33 13 5
D3 31 13 Dmod
D4 13 31 Dmod
*Buffer,Output
G3 13 41 13 31 0.22
L1 1 11 2E-9
Rz 11 42 10
D5 42 41 Dmod
D6 13 41 Dmod
D7 13 11 Dmod
Rx 13 23 0.5
L3 3 23 2E-9
Rq 11 13 Rmod3 74E3
*
.MODEL Rmod1 RES (TC1=2.95E-3 TC2=-5E-7)
.MODEL Rmod2 RES (TC1=8.5E-6 TC2=-3.3E-7)
.MODEL Rmod3 RES (TC1=-2.5E-3 TC2=2E-5)
.MODEL Dmod D IS=1E-14 RS=0.1 BV=22 CJO=0.1E-12
.ENDS ZR431
*
*$
*

--- C:\forum\revpolly\REV POL PFET 3.asc ---