DCM, Curent Mode, FULL BRIDGE SMPS, 100W

Transformer = ETD49-3C94 (ungapped)
NS/NP = 1.3
LP= 7.77mH; LS = 13.17mH
NP = 43; NS = 56

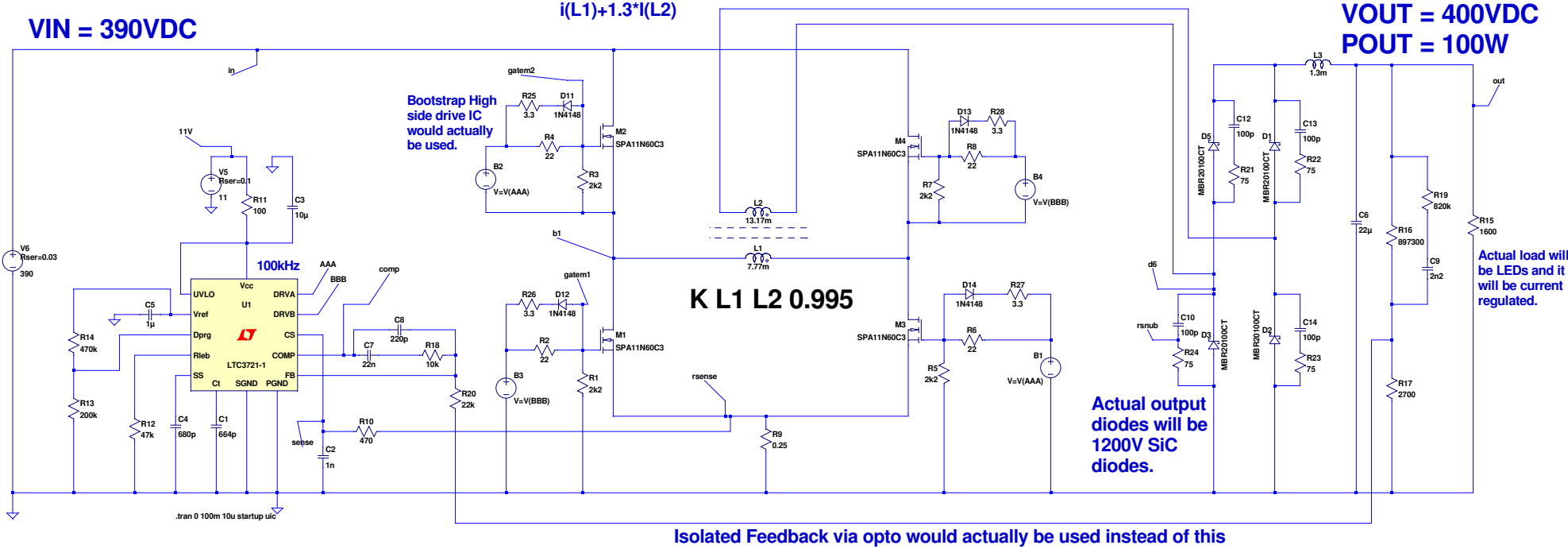
Please note that at the 26 ms point there is a high peak of the primary magnetising current to 460 mA.
The steady state magnetising current peak is 200 mA.
The 460 mA magnetising current peak corresponds to a B value of 0.397 mT.
-This is too close to saturation for comfort, especially when you think that Full Bridge transformers usually have non-gapped ferrite cores, meaning that 'flyway' saturation is a possibility.
One way round this problem is to re-design the Full Bridge so that the maximum duty cycle at full load is a maximum of 0.5.
The Full Bridge here has a maximum duty cycle of 0.7.
It would be even better if the Full Bridge control chip had a maximum possible Duy cycle of 0.5

.ic V(out) = 370V

Magnetising current in transformer i(L1)+1.3*I(L2)

VIN = 390VDC

VOUT = 400VDC
POUT = 100W



.save i(L1)
.save i(L2)
.save i(L3)
.save i(M1)
.save i(D3)
.save i(V6)
.save i(R24)
.save i(R1)
.save i(R2)
.save V(out)
.save V(in)
.save V(gatem1)
.save V(gatem2)
.save i(R10)
.save V(B3)
.save V(b1)
.save V(sense)
.save V(rsense)
.save V(comp)
.save V(AAA)
.save V(BBB)
.save V(d6)
.save V(rsnub)
.save V(vref)

Isolated Feedback via opto would actually be used instead of this

--- C:\forum\DCM FULL BRIDGE AT STARTUP _SATURATE\DCM Full Bridge saturating.asc ---