

U101 – Stability

For this converter to be stable there is a range of output inductance and output capacitance/ESR that is allowed

TI requires a minimum of 10uF low ESR capacitors on the output of the power supply to be stable

Here you have only 2.2uF of low ESR capacitance

The other caps have 2Ω for equivalent ESR on 22uF (C109,C110)

This is required for Intrinsic Safety

The next largest cap that has no added resistance is 2.2uF

You may be at risk with a stability issue because the output low ESR capacitance is not sufficient

Recommendation

See section on “Stability” under “Supportive Information”

I would not suggest using the load transient test

Need to do a small signal AC response

Other option is to contact TI or see if you can simulate the circuit (download simulation model or the simulator may be online)