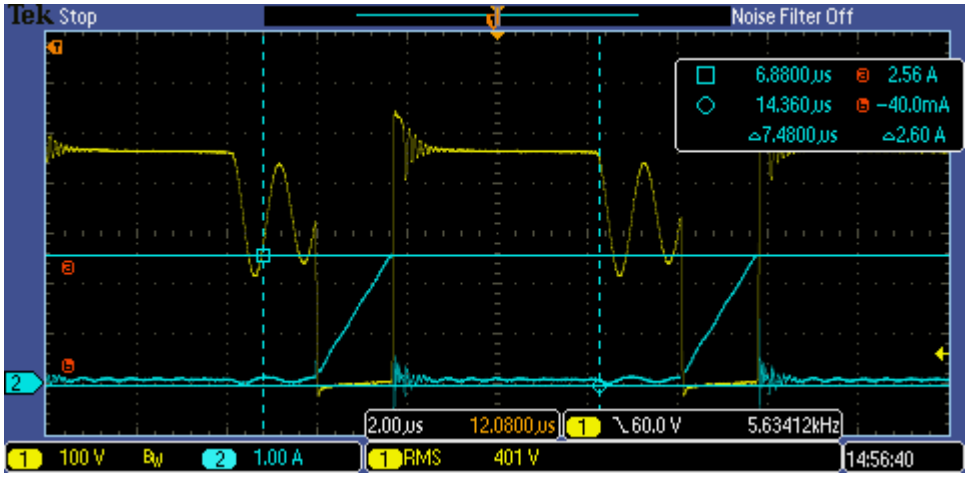
6 Test 3: Primary current at 3A faulty sample vs healthy sample

Healthy sample:

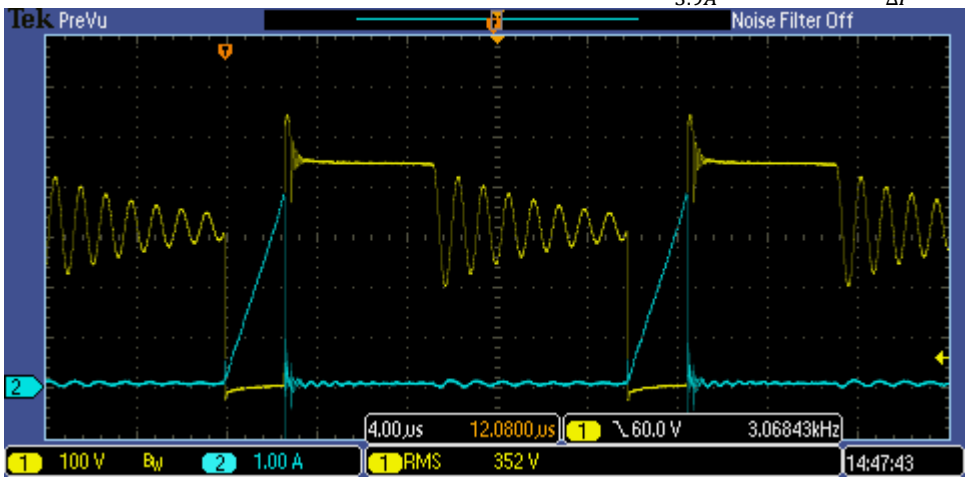
Switching frequency: ~123kHz
ton: 1.7us
peak current: ~2.6A ⇔ ~1.5A/us
drain voltage max: ~540V
primary inductance estimate: $L{\sim}222\mu H = \frac{\sqrt{2}\times 240V}{2.6A} \times 1.7\mu s = \frac{U}{\Delta I} \times \Delta t$

Note: the switching frequency is not the nominal frequency even at full load (132kHz), but it is jittering.



Faulty sample:

Switching frequency: ~56kHz
ton: ~2.6us
peak current: ~3.9A ⇔ ~1.5A/us
drain voltage max: ~540V
primary inductance estimate: $L{\sim}226\mu H = \frac{\sqrt{2}\times 240V}{3.9A} \times 2.6\mu s = \frac{U}{\Delta I} \times \Delta t$



The default current limit for the TOP270 is 5.17A. The current limit is set to ~4.76A which is 92% of the default limit by using R6 = 8k2. The current limit from which the PSU enter the variable frequency area is the limit kPS(upper) = 55% of the current limit set. 2.62A = 55% x 92% x 5.17A