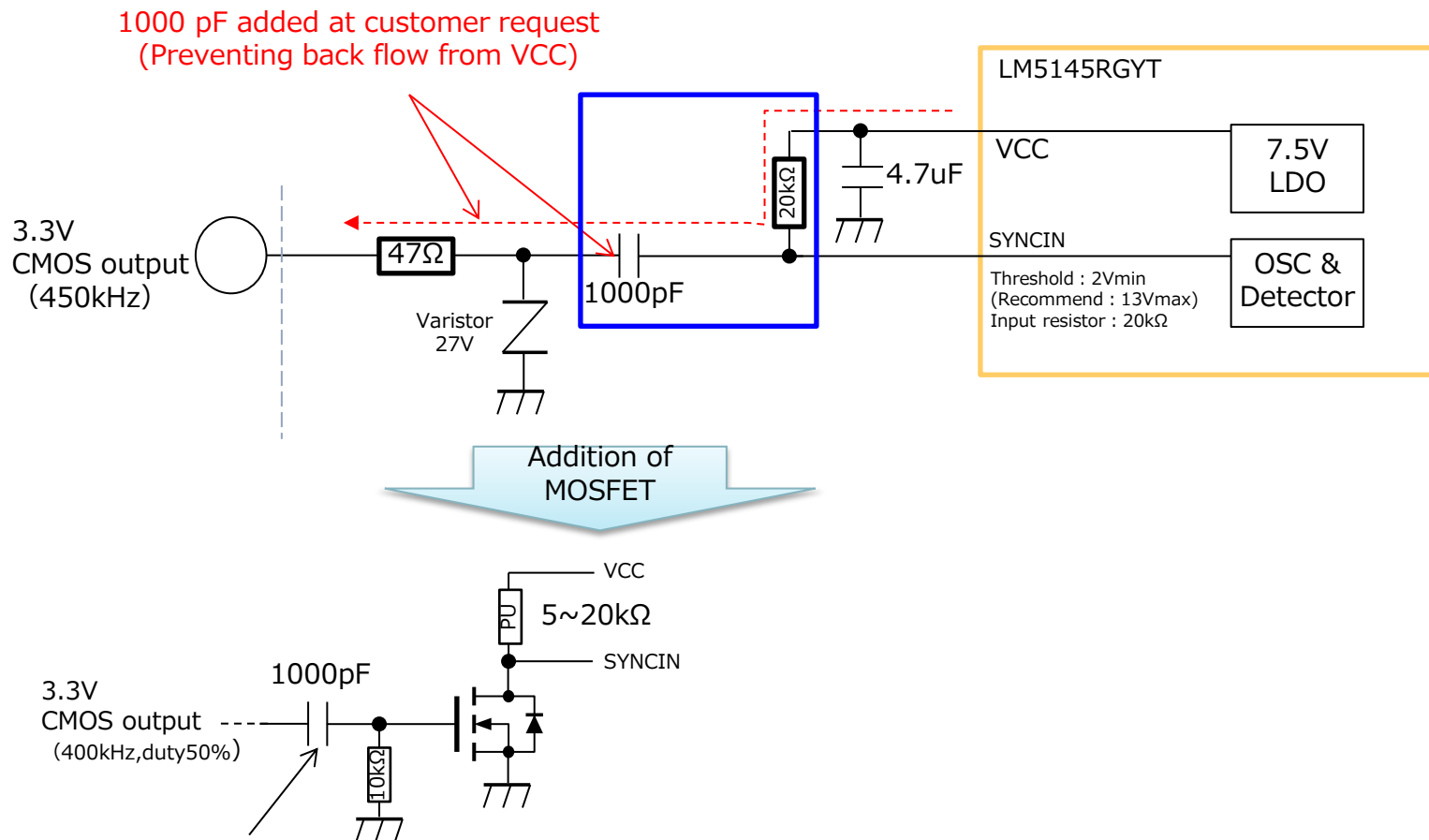# Question

Q1

Is it possible to perform FPWM and frequency SYNC operation with the addition of MOSFET shown below?
Is there no problem?

Q2

Is there a specification of the input capacitance of the SYNC pin when adding a MOSFET?
When 5 kΩ PU, the load of VCC increases by about 1.5 mA, but is there a problem within 20 mA in total with SW operation?

1000 pF added at customer request
(Preventing back flow from VCC)

LM5145RGYT

VCC — 7.5V LDO

20kΩ

4.7uF

3.3V CMOS output (450kHz)

47Ω

1000pF

Varistor 27V

SYNCIN

Threshold : 2Vmin
(Recommend : 13Vmax)
Input resistor : 20kΩ

OSC & Detector

Addition of MOSFET

VCC

PU 5~20kΩ

SYNCIN

3.3V CMOS output (400kHz,duty50%)

1000pF

10kΩ

Add by fail safe
Prevents transition from FPWM to DCM operation of the LM 5145 when the signal becomes continuous Hi.
(This power supply is required for current sink operation)

Question

"In terms of the LM5145's SYNCOUT signal, the recommendation is to measure the amplitude applied to the LM5175's RT/SYIN pin to verify it does not exceed the specification".

▌ Q3

Is it confirmed by actual measurement?

In case

We are concerned about troubles due to thermal characteristics and product variations.

▌ Q4

Clamping is considered with SBD etc. separately from 3.3 V power supply so that the RT / SYNC pin does not become 3.3 V or higher, but how much is the upper limit of tolerance for 3.3 V?

▌ Q5

Or Csync is set to 1000 pF [From EVM]

How much is the external signal amplitude recommended value?

(To satisfy the RT / SYNC pin voltage upper limit 3.3 V, H threshold 2.1 V min, L threshold 1.2 V max)