By doing some debugging on an existing product, I found that we don't meet a parameter for the CSD86350Q5D mosfet.
So we use the TPS51727 with 4 Buck NexFET (see 2nd figure)

Each of GATEH1 and GATEH2 signals drive 2 Buck NexFET's.
CSD86350Q5D asks for a 4.5V level for Vgs to get in the proper linear region
But the TPS51727 drives only 4.3V.
Is it because I have 2 mosfet connecter on the GATEH signals…?
The signal is flat during the active period. I would expect a slope if it was capacitance issue…

On the evaluation board, there is a provision to install a 5.11 ohm and Zener diode to help VBSTx (see first figure)
If this could improve the swing level, do I need to add the 5.11 ohm resistor
Maybe I can use another mosfet having better Vgs characteristics..

CSP1
CSN1
CSN2
CSP2
Csen
C344 22nF
C345 22nF
sense via
sense via
Rseries R258 40.2k
swrt1
RT2
ERT-J1VV154J
RT1
swrt2
R259 40.2k
Rpar R266 75k
R267 75k
L10
0.33uH 46A 0.83mOhm
ERT-J1VV154J
0.33uH 46A 0.83mOhm
L9
Vishay IHLP5050FDERR33M01
Rsequ R255 28k
R256 28k
12V to 0.9V 45A
22uF
22uF
22uF
22uF
22uF
22uF
22uF
22uF
swout1
swout2
array of vias
Q5 CSD86350Q5D
Q4 CSD86350Q5D
CSD86350Q5D Q2
GATEH1 3
SW1 4
GATEL1 5
1
2
8
7
6
6
GATEH1 3
SW1 4
GATEL1 5
1
2
8
7
6
6
GATEL2 5
SW2 4
GATEH2 3
6
7
8
2
1
6
GATEL2 5
SW2 4
GATEH2 3
6
7
8
2
1
sense via
sense via
C464 1uF
C465 1uF
VBST1
VBST2
V5
C435 2.2uF
R72 0 DNP
R83 0
R319
VREF
DNP
R111 0
500
5
PMON
TP55
R1528
en0v9
3.3V LEFT
PG_0.9V 16
TRIPSEL
3.3V_LEFT
VID0
VID1
DRVH1 30
VBST1 29
LL1 28
DRVL1 27
V5IN 26
PGND 25
DRVL2 24
LL2 23
VBST2 22
DRVH2 21
TPS51727
PGD
SLP
NC
EN
PMON
TRIPSEL
TONSEL
31
32
33
34
35
36
VID0 20
VID1 19
VID2 18
VID3 17
VID4 16
PD2 15
DACS 14