



中国科学院高能物理研究所
Institute of High Energy Physics
Chinese Academy of Sciences

TaichuPix-3 test

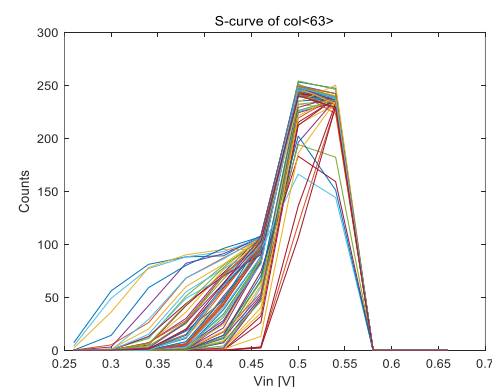
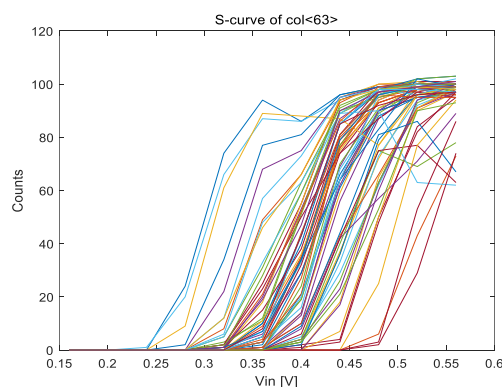
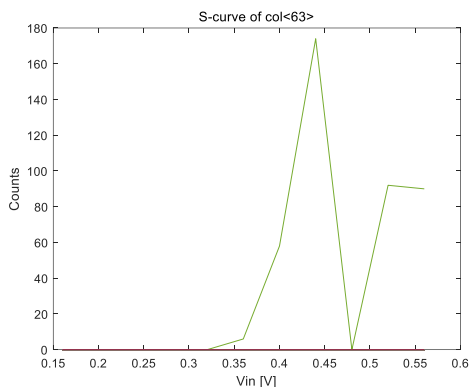
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2023-3-23

Investigation on issue of s-curve test

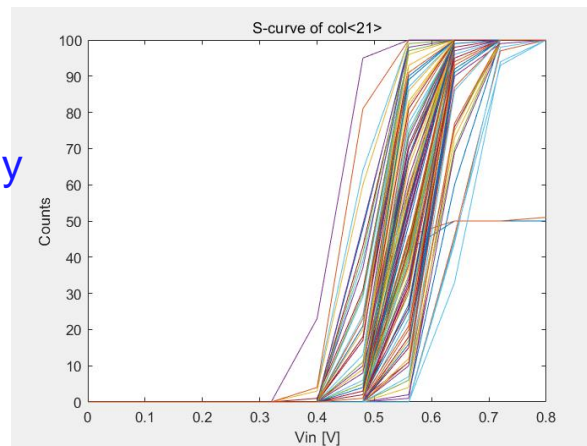
■ Two voltage VHIGH and VLOW needed for the s-curve test

- Normally provided by DAC on the interposer board
 - Different s-curve results observed with the same setting



S-curve of FlexV1p3-F_U7 @ITHR=128 using DAC

- This week we tried to provide VH & VL by a power supply
 - Stable s-curve results obtained with U1 and U2 chip
 - More verification will be done with chips on other position

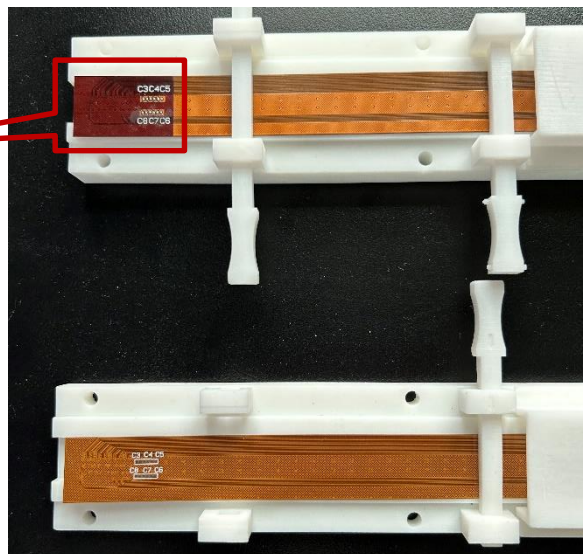


S-curve of FlexV1p4-U_U1
@ITHR=192 using power supply

New batch of flex boards

- **25 2-layer flex from FASTPRINT company received, same as previous bunch**
 - Thickness: **0.31 mm** (from the delivery list)
 - Sent 5 to solder the socket, **4 boards were bonded with two chips**
- **15 2-layer flex and 15 4-layer flex from SCC company received**
 - Thickness: **0.161 mm** for 2-layer; **0.213 mm** for 4-layer (from the final inspection report)
 - Sent 3 4-layer flex to solder the socket, **2 boards were bonded with one chip**

Old 4-layer
stiffener on
backside of socket

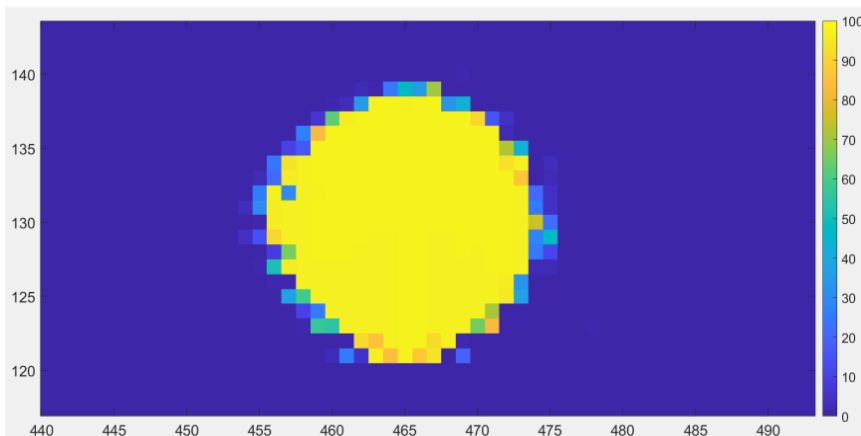


New 4-layer

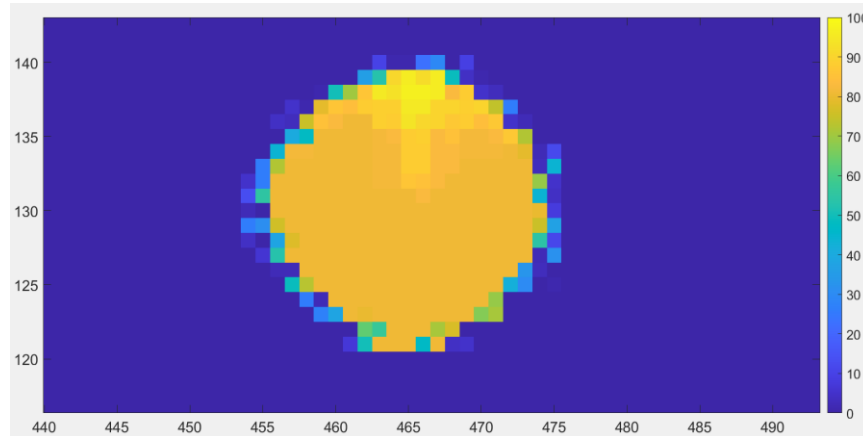
Test result of new 4-layer flex

■ FlexV1p4-Y: U1 chip

- OCT mode: 100% success ratio
- Apulse test: has response to $V_{in} = 1.13\text{ V}$
- Laser test:



ITHR = 64



ITHR = 48

Wafer test for the 2nd round wafers

- Test result

Wafer num.	Num of good die	Yield	Note
1	26	0.65	1 st round
2	29	0.725	
7	31	0.775	
8	29	0.725	
9	11	0.275	
4	19	0.475	2 nd round
5	25	0.625	
6	21	0.525	
10	27	0.675	
11	24	0.6	
12	14	0.35	