

GRIT Square Detectors

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Square Detector pool

Square dets purchased at Micron SL

Thin:

grade A: TTT11 NTD Type 2M/2M 482um (wafer serial 3219-3) grade A: TTT11 NTD Type 2M/2M 495 um (wafer serial 3219-4) grade B (f.o.g.): TTT11 NTD Type 2M/2M 496 um (wafer serial 3219-7) Thick:

grade A: TTT11 FZ Type 2M/2M 496 um (wafer serial 3212-1) grade B (f.o.g.): TTT11 FZ Type 2M/2M 1549 um (wafer serial 3212-2)









(simple) setup as test bench





Energy resolution





Timing



(a) FWHM grid search.





using charge sharing signals (1.03+-0.08)ns with CFD

(2.1+-0.1)ns with LE

1.5 mm-thick FZ grade A



Timing



Side	Time resolution [ns]
Р	$1.63 {\pm} 0.04$
Ν	$11.8 {\pm} 0.4$

Energy resolution



Side	Energy resolution [-]
Р	$(2.51{\pm}0.06)~\%$
Ν	$(4.67{\pm}0.04)~\%$

Factor of 10 difference in correlation between n and p: \rightarrow depletion not reached

1.5 mm-thick FZ grade B



Gigantic difference between data sheet and our test: Impossible to give bias because the current explodes

Conclusion and perspectives-1

- -grade A/B ~500-um thin NTD working on a test bench but noise in experimental environment
- -possibly a ground mesh issue (difference with respect tot the desing of the trape)
- \rightarrow upgrade the kapton by adding GR mesh

-grade A 1500-um thick not fully depleted

- -grade B 1500-umthick can not be biased.
- \rightarrow ask (again) for advice? send them back (?)

Conclusion and perspectives-2

- plan to test DSSD and new Milano preamplifier [a test with former pad prototype has been performed, Stefano's]
- PSA test with thin DSSD performed at LNL CN accelerator, Li+C reaction. Under Analysis.