

SPECIALIST DETECTORS FOR NUCLEAR PHYSICS

SILICON DETECTOR TYPE: SINGLE SIDED TRAPEZIOD SINGLE AREA PAD DETECTOR

TECHNOLOGY: 4INCH SILICON

DESIGN: Silicon planar totally depleted ion implanted detectors p on n resistivity silicon with over voltage capability. The detectors are all designed to have a leading silicon edge cut and located within 1 mm of the active region with packages optimized for minimum dead area over total 4 pi spherical surface. A perfect sphere of 30 cm diameter can be built from assembling trapezoid

DESIGNATION TYPE:	II1	II2	II3	II4
ACTIVE AREA:	8.4 cm ²	15 cm ²	18.2 cm ²	20.5 cm ²
HEIGHT:	46.73 mm	46.95 mm	43.44 mm	43.57 mm
BASE:	25.53 mm	37.98 mm	45.49 mm	48.64 mm
TOP:	10.45 mm	25.86 mm	38.09 mm	45.56 mm
SIDE:	47.34 mm	47.34 mm	43.59 mm	43.60 mm

DEAD LAYER: Junction 0.6 μm maximum, Ohmic 1.5 μm maximum
 THICKNESS: 500 μm
 THICKNESS TOLERANCE: ± 25 μm
 THICKNESS UNIFORMITY: ± 5 μm
 FULL DEPLETION (FD): 50 V typically, 90 V maximum
 OPERATING VOLTAGE: FD to FD + 30 %
 ELEMENT CAPACITANCE: 210 pF 375 pF 445 pF 512 pF
 (typically)
 LEAKAGE CURRENT: 250 nA 350 nA 400 nA 500 nA
 ALPHA RESOLUTION (Am 241): 1 % maximum
 RESPONSE TIME: 10 ns typically
 METALLISATION: Junction 1750 Å Ohmic 3000 Å
 METALLISSATION
 TOLERANCE: Junction ± 50 Å Ohmic ± 1000 Å
 OXIDE WIDTH: 1 mm
 PACKAGE: Transmission PCB Kapton lead to connector
 WIRE BONDING: 2 wires/detector

MINIMUM ACCEPTANCE LEVEL: 100 %

EXPERIMENTS: Indiana University silicon sphere of 15 cm diameter comprising of 160 detectors.
 It is used at GANIL and currently at TEXAS A & M.
 Legnaro Ball also use the II detectors in Italy.

QUALITY ASSURANCE :ISO9001

