Micron Semiconductor Limited

SILICON CATALOGUE

WWW.MICRONSEMICONDUCTOR.CO.UK

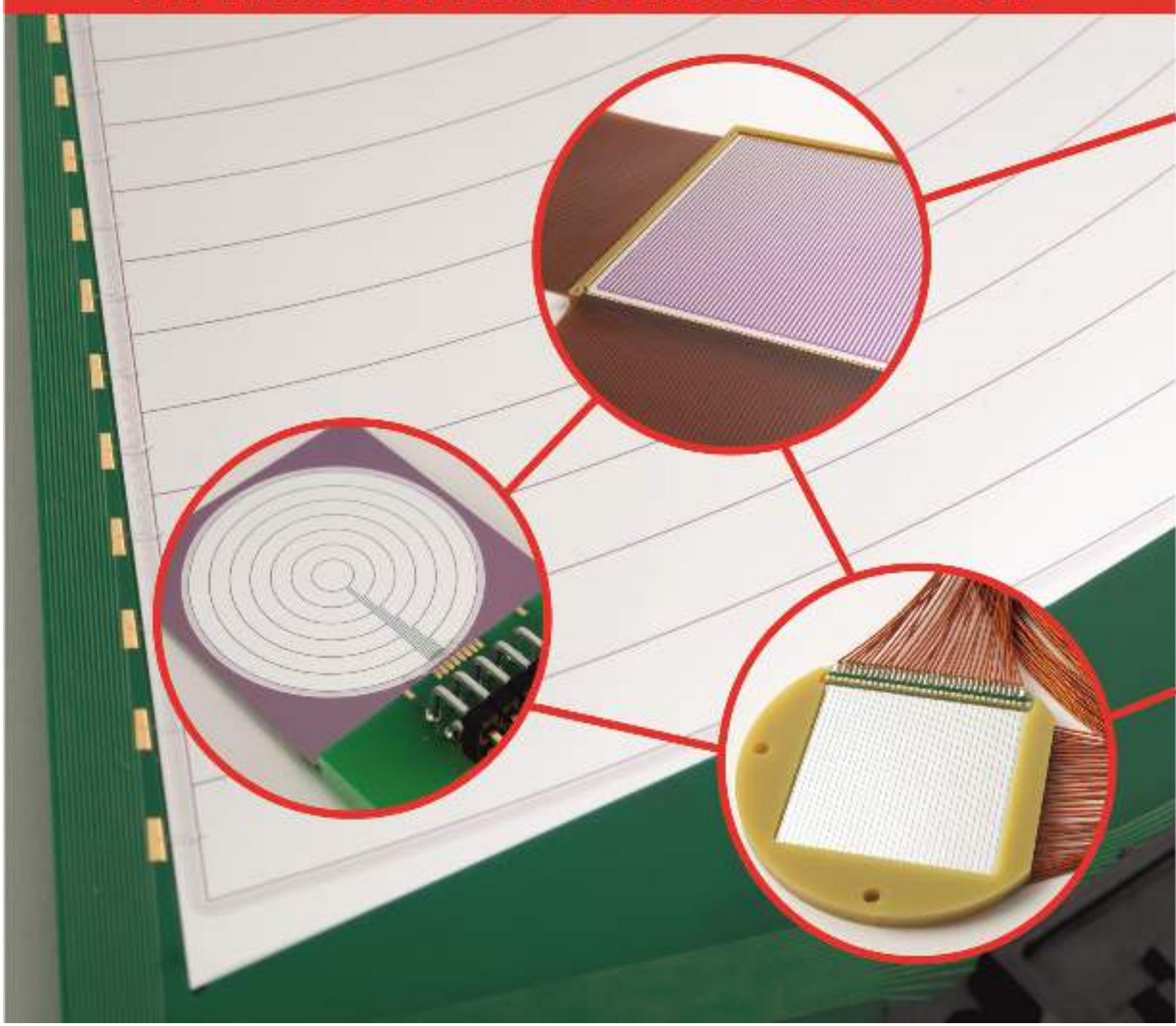


Table of Contents

PRODUCT CHOICE 4

SILICON SENSOR OPTIONS 4

Silicon Type 4

Silicon Wafer Size and Thickness 4

Junction and Ohmic Window Type 4

Implant Type 4

Metallisation Coverage Type 4

Metallisation Type 5

SENSOR PACKAGE 5

SINGLE AREA DETECTORS 6

Circular Active Area Designs 6

Elliptical Active Area Designs 10

Donut Active Area Designs 11

Sector Active Area Designs 11

Trapezoids Active Area Designs 12

Square Active Area Designs 14

Rectangular Active Area Designs 16

MULTI ELEMENT DETECTORS 19

Single Sided 19

Circular Designs without a Central Hole 19

Circular Designs with a Central Hole 21

Multi Element Sector Designs 23

Multi Element Trapezoids Designs 24

Square Designs without a Central Hole 25

Square Designs with a Central Hole 26

Rectangular Designs (without a Central Hole) 26

Double Sided 27

Circular Designs without a Central Hole 27

Circular Designs with a Central Hole 28

Sector Circular Designs 30

STRIP DETECTORS 31

Single Sided 31

DC Strip Detectors without Bias Resistors 31

..... 33

DC Strip Detectors with Bias Resistors 33

DC Strip Detectors without Bias Resistors 34

DC Strip Detectors without Bias Resistors Trapezoids. 38

DC Strip Detectors with Bias Resistors 38

MICROSTRIP DETECTORS 39
Single Sided 39
Orthogonal AC Microstrip Detectors 39
Double Sided 40
Orthogonal AC Microstrip Detectors 40
Stereo AC Microstrip Detectors 41
PAD DETECTORS 42
Single Sided 42
DC Pad Detectors (without Bias Resistors) 42
Double Sided 44
DC Pad Detectors (without Bias Resistors) 44
PIXEL DETECTORS 45
Single Sided 45
DC Pad Detectors 45
POSITION SENSITIVE DETECTORS 46
Single Sided 46
Single Area Devices 46
Single Area Tetra-Lateral Devices 46
Multi Element Area Devices 47
Strip Devices 47
Double Sided 48
Single Area Duo-Lateral Devices 48
Strip Devices 49
NOTES 50
NOTES 51
NOTES 52
INDEX 53

PRODUCT CHOICE

SILICON SENSOR OPTIONS

Silicon Type

N-Type

The majority of devices are fabricated on n-type float zone material with a crystal orientation of <100>. This material has a high resistivity typically in the range 3 – 10 KΩ cm.

P-Type

P-type silicon processing can be offered on all designs where segmentation isolation is possible.

NTD

Neutron transmutation doped n-type silicon is offered for applications where low resistivity variation across the wafer is required. This material has a much higher depletion voltage than regular high resistivity n-type material.

Silicon Wafer Size and Thickness

The wafer size corresponds to the standard* silicon thicknesses that the device can be processed on.

WAFER SIZE	STANDARD SILICON THICKNESSES (µm)
4-inch	20, 30, 40, 50δ, 65, 80, 100, 140, 250, 300, 500, 1000, 1500
6-inch	150, 200, 300, 400, 500, 675, 1000, 1500

*Other non standard and R&D silicon thicknesses are available on request.

δ Thicknesses 50 µm or below that do not require NRE will be noted with a §.

Junction and Ohmic Window Type

Implant Type

The range of dead layer windows available and R&D window are listed below. Window types refer to the junction of a device, but type 2 and 7 also available on the rear ohmic side.

FRONT JUNCTION P-SIDE				REAR OHMIC N-SIDE			
WINDOW TYPE	DEAD LAYER (µm)	MINIMUM ENERGY THRESHOLD		WINDOW TYPE	DEAD LAYER (µm)	MINIMUM ENERGY THRESHOLD	
		Electron (KeV)	Proton (KeV)			Electron (KeV)	Proton (KeV)
2	0.5	4	90	2	0.3	2	70
7	0.3	2	70	7	0.15	1.5	40
9	0.1	1	20				
9.5	0.05	0.5	10				
9.75	0.01	0.1	1				
PSD	0.03	0.3	5				

Metallisation Coverage Type

The coverage of the metal over the active area can be suited to the sensors application and to compliment the dead layer of the implant. The metal coverage refers to both the junction side and ohmic sides.

METAL COVERAGE	DESCRIPTION
M	A continuous metal coverage of standard thickness over the whole active area region.
G	Grid coverage, typically 3 %, of standard thickness metallisation over the whole active area and contact pads for wire bonding.
P	A periphery metal band, typically 30 µm wide, around the edge of the active areas and contact pads for wire bonding. The majority of the active area has no dead layer contribution from the metal.
T	A standard periphery coverage, as described above, for good electrical contact, and a thin metal coverage typically 0.1 - 0.3 µm over the majority of the active area.
DM	A double metal process used to track readout signal in a direction different to the active area elements.
E	An equipotential metal band array used on PSD devices.

Metallisation Type

The standard metallisation scheme is 100 % sputtered aluminium of thickness 0.3 µm for good ultra sonic wire bonding connections.

The evaporated metal system Ti/Ni/Au is also available on request. Gold ohmic contacts are used for high operating temperature detectors +55^{o} to +120^{o} required for military applications

SENSOR PACKAGE

The silicon chips can be delivered as chip only or assembled in a standard or custom package.

The majority of packages are made from standard FR4 material. Black FR4 material can be offered where light transmission through the package needs to be minimised.

Many of the designs currently offered on FR4 material can be modified and transferred onto ceramic 96% alumina or aluminium nitride for operation in ultra high vacuum environments. Other package materials such as polyamide and kapton for high density readouts with limited space have been utilised for many applications.

The connector type (straight or 90 degree) and orientation (exiting the junction or ohmic side) can also be changed to suit the experimental arrangement. Where a common pitch is used it may also be possible to request an alternative connector on an existing package.

SINGLE AREA DETECTORS

Circular Active Area Designs

Single sided single area circular active area with circular, square or multi faceted outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA DIAMETER (mm)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	MSD003[§]	3.00	∅ 7.00	2/7 9/9,5	M/T/P	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Black FR4
	MSD0036[§]	3.60	∅ 7.60	2	M	2	M	4	50 – 1500 um	Standard FR4
	MSD003810	3.810	∅ 8.69	2/7 9/9,5	M/T/P	2	M	4	50 – 1500 um 65 – 2000 um	Chip Only
	MSD004	4.00	∅ 8.00	2/7 9/9,5	M/T/P	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD004572	4.572	∅ 6.912	2/7 9/9,5	M/T/P	2	M	4	50 – 500 um 65 – 500 um	Chip Only
	MSD005	5.00	9.00 x 9.00	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Chip Only
	MSD005	5.00	∅ 9.00	2	M	2	M	4	50 – 1500 um	Black FR4
	MSD006	6.00	∅ 10.00	2	M	2	M	4	50 – 1500 um	Black FR4

	MSD062	6.20	8.20 x 8.20	2/7 9/9,5	M/T/P	2	M	4	50 – 500 um	Chip Only
	MSD007	7.00	10.00 x 10.00	2/7 9/9,5	M/T/P	2	M	3 & 4	50 – 1500 um 65 – 1000 um	Range of Black FR4 Designs
	MSD007	7.00	∅ 11 .00	2/7 9/9,5	M/T	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD008	8.00	10.0 x 10.0	2/7 9/9,5	M/T/P	2	M	4	50 – 1500 um 65 – 1000 um	Black FR4
	MSD008§	8.00	∅ 12.00	2/7 9/9,5	M	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Black FR4
	MSD008§	8.00	∅ 12.00	2/7 9/9,5	M	2	M	4	Below 20 um	Black FR4
	MSD009	9.00	11.00 x 11.00	2	M	2	M	4	50 – 500 um	Chip Only
	MSD010	10.00	16.00 Flat-To-Flat (16 Sides)	2/7 9/9,5	M/T/P	2	M	4	50 – 1500 um 65 – 1000 um	Black FR4
	MSD011	10.00	12.00 Flat-To-Flat (8 Sides)	2	M	2	M	6	140 – 500 um	Ceramic
	MSD012	12.00	∅ 16.00	2/7 9/9,5	M/T/P	2	M	6	140 – 1500 um	Black FR4

	MSD012§	12.00	∅ 16.00	2/7 9/9,5	M/T/P	2	M	6	Below 20 um	Mixed FR4
	MSD013	13.00	19.00 Flat-To-Flat (8 Sides)	2	M	2	M	6	140 – 2000 um	Chip Only
	MSD014	14.00	∅ 20.40	2	M	2	M	6	140 – 2000 um	Chip Only
	MSD015	15.00	19.00 Flat-To-Flat (8 Sides)	2	M	2	M	6	140 – 1500 um	Chip Only
	MSD015-2	15.00	20.80 Flat-To-Flat (8 Sides)	2	M	2	M	6	140 – 2000 um	Chip Only
	MSD017§	16.80	∅ 20.80	2/7 9/9,5	M	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Black FR4
	MSD017§	16.80	∅ 20.80	2/7 9/9,5	M	2	M	4	Below 20 um	Black FR4
	MSD018	18.00	21.00 Flat-To-Flat (8 Sides)	2/7 9/9,5	M/T/P	2	M	4	50 – 1000 um 65 – 1000 um	Black FR4
	MSD020	20.00	22.00 x 22.00	2	M	2	M	6	140 – 500 um	Chip Only
	MSD020	20.00	∅ 24.00	2/7 9/9,5	T/P	2	M	4	50 – 1500 um 65 – 1500 um	Range of Black FR4 Designs

	MSD022	21.70	∅ 25.70	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD023	23.00 (With protrusion of 31.00)	∅ 27.00 – 35.00	2/7 9/9,5	T/P	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD024-2§	24.00	28.00 Flat-To-Flat (12 Sides)	2	M	2	M	6	Below 50 um 140 – 1500 um	Standard FR4
	MSD024	24.50	28.76 Flat-To-Flat (16 Sides)	2	M	2	M	6	300 um	Housed in a metal case
	MSD024-1	24.50	28.76 Flat-To-Flat (16 Sides)	2	M	2	M	6	140 – 1500 um	Chip Only
	MSD026	26.00	∅ 30.00	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD026§	26.00	∅ 30.00	2/7 9/9,5	M	2	M	6	Below 50 um 140 – 1500 um	Black FR4
	MSD026§	26.00	∅ 30.00	2/7 9/9,5	M	2	M	6	Below 20 um	Black FR4
	MSD028	28.14	30.91 Flat-To-Flat (16 Sides)	2	M	2	M	6	140 – 500 um	Housed in a metal case
	MSD030	30.00	32.00 x 32.00	2	M	2	M	4	50 – 500 um	Chip Only

	MSD032	32.00	∅ 36.00	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSD035	35.00	39.00 Flat-To-Flat	2/7 9/9,5	G	2	M	4	50 – 1500 um 65 – 1500 um	Range of Black FR4 Designs
	MSD040	40.00	44.00 Flat-To-Flat (16 Sides)	2	M	2	M	4	50 – 1500 um	Flexi Rigid Package
	MSD044	44.00	48.00 Flat-To-Flat (16 Sides)	2/7 9/9,5	M	2	M	6	140 – 1500 um	Ceramic
	MSD050	50.00	54.66 Flat-To-Flat (16 Sides)	2		2	M	6	140 – 1500 um	Housed in a metal case
	MSD085	85.00	90.00 Flat-To-Flat (16 Sides)	2/7 9/9,5	M/T/P	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4

Elliptical Active Area Designs

Single sided elliptical active area with elliptical outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA DIAMETER (mm)		CHIP DIMENSIONS (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		Major	Minor	Major	Minor	Implant	Metal	Implant	Metal			
	MSE 1	36.95	32.00	40.95	36.95	2/7 9/9,5	M	2	M	4	50 – 1500 um	Black FR4

Donut Active Area Designs

Single sided single area circular active area with central hole and multi faceted outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm)		CHIP DIMENSIONS (mm^2)	HOLE ∅ (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		Inner	Outer			Implant	Metal	Implant	Metal			
	LL21	∅ 6.60	14.068 Flat-To-Flat (12 Sides)	15.068 x 15.068 Flat-To-Flat (12 Sides)	5.60	2/7 9/9,5	G	2	M	6	140 – 300 um	Standard FR4

Sector Active Area Designs

Single sided sector active area with multiple assemblies completing almost 360º coverage.

ASSEMBLY EXAMPLES	DESIGN	SECTOR COVERAGE	ACTIVE AREA DIAMETER (mm)		CHIP DIMENSIONS (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			Inner	Outer	Inner	Outer	Implant	Metal	Implant	Metal			
	QQQ1	82º	18.00	100.00	11.50	103.00	2	M	2	M	4	50 – 1500 um	Standard FR4

Trapezoids Active Area Designs



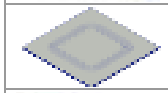
Single sided trapezoid active area with multiple assemblies completing almost 360º coverage. Some of these assemblies have been installed in the 4π detector CHIMERA at the Superconductive Cyclotron at INFN-Laboratori Nazionali del Sud in Catania.

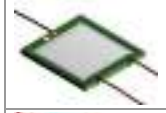
ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	TOTAL ACTIVE AREA (mm)			CHIP DIMENSIONS (mm)			JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			Length (mm)	Width 1 (mm)	Width 2 (mm)	Length (mm)	Width 1 (mm)	Width 2 (mm)	Implant	Metal	Implant	Metal			
	H1	1	3.61	4.51	2.71	7.61	9.63	5.84	2	M	2	M	4	50 – 1500 um	Chip Only
	RRR-10	1	54.45	46.90	37.78	55.65	48.20	38.88	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-11	1	54.45	55.20	46.99	55.65	56.50	48.10	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-12	1	54.45	62.48	55.28	55.65	63.60	56.40	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-13	1	54.45	68.21	62.37	55.65	69.48	63.61	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-14	1	54.45	72.73	68.27	55.65	73.98	69.42	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi

	RRR-15	1	54.45	75.84	72.76	55.65	77.07	73.93	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-16	1	54.45	77.34	75.86	55.65	78.56	77.04	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-17	1	54.45	77.35	77.35	55.65	78.55	78.55	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-25	1	90.60	77.80	44.72	91.80	78.38	45.70	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi
	RRR-26	1	90.54	83.03	20.44	91.75	84.36	21.25	2/7 9/9,5	M/P/T	2	M	6	140 – 300 um	Rigid Flexi

Square Active Area Designs

Single sided single area square active area with square outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	MSX011	1.00 x 1.00	15.356 x 15.356	2	P*	2	M	4	50 – 500 um	Ceramic
	MSX002	2.00 x 2.00	4.00 x 4.00	2/7/9/9.5	M/P*	2	M	6	140 – 500 um	Ceramic with metal housing
	MSX002-2	2.00 x 2.00	6.00 x 6.00	2	M	2	M	6	140 – 1500 um	Chip Only
	MSX031	3.00 x 3.00	15.356 x 15.356	2	P*	2	M	4	50 – 500 um	Ceramic
	MSX048	4.80 x 4.80	5.10 x 5.10	2/7 9/9,5	P	2	M	6	140 – 300 um	Chip Only
	MSX051	5.00 x 5.00	15.356 x 15.356	2	P*	2	M	4	50 – 500 um	Ceramic
	MSX10	3.14 x 3.14	7.14 x 7.14	2	M	2	M	4	50 – 1500 um	Standard FR4
	MSX064	8.00 x 8.00	10.00 x 10.00	2/7 9/9,5	p	2	M	6	140 – 500 um	Black FR4
	MSX03	10.00 x 10.00	13.00 x 13.00	2/7 9/9,5	M/T/P	2	M	4	50 – 1000 um 65 – 1000 um	Range of FR4 and ceramic designs

	MSX03	10.00 x 10.00	13.00 x 13.00	2/7 9/9,5	G	2	M	6	140 – 1000 um	Range of FR4 and ceramic designs
	MSX0311	10.00 x 10.00	15.356 x 15.356	2	M/P*	2	M	4	50 – 500 um	Ceramic
	MSX04	20.00 x 20.00	22.95 x 22.95	2	M	2	M	4	50 – 1000 um	Standard FR4
	MSX04§	20.00 x 20.00	24.00 x 24.00	2/7 9/9,5	M	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Standard FR4 Ceramic
	MSX09	30.00 x 30.00	33.00 x 33.00	2	M	2	M	4	50 – 1000 um	Standard FR4
	MSX25	50.00 x 50.00	54.30 x 54.30	2/7 9/9,5	M/G	2	M	4	50 – 1500 um 65 – 1500 um	Range of FR4 and ceramic designs
	MSX25	50.00 x 50.00	54.3.0 x 54.30	2/7 9/9,5	M	2	M	6	140 – 1500 um	Range of FR4 and ceramic designs
	MSX40	63.975 x 63.975	67.975 x 67.975	2/7 9/9,5	M/G	2	M	4	50 – 1500 um 65 – 1500 um	Range of FR4 & Rogers designs
	MSX40§	63.975 x 63.975	67.975 x 67.975	2	M	2	M	6	Below 50 um 140 – 1500 um	Range of FR4 & Rogers designs
	MSX100-1	97.22 x 97.22	102.00 x 102.00	2	M	2	M	6	140 – 1500 um	Standard FR4

	MSX100	100.0 x 100.0	102.00 x 102.00	2	M	2	M	6	140 – 500 um	Standard FR4

Rectangular Active Area Designs

Single sided single area rectangular active area with rectangular outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	MSX02	2.75 x 5.25	3.30 x 6.05	2	M	2	M			T05
	MSX07	3.00 x 7.00	3.74 x 7.74	2	M	2	M	4	140 um	Chip Only
	MSX07-2	3.00 x 7.00	3.50 x 7.50	2/7 9/9,5	G	2	M	6	140 um	Chip Only
	MSX90x5	5.00 x 90.00	9.00 x 94.00	2	M	2	M	6	140 - 1500 um	Standard FR4 (in metal housing option)
	MSX91	6.50 x 14.00	10.50 x 18.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX D4	7.00 x 11.20	11.00 x 15.20	2	M	2	M	6	140 – 1500 um	Black FR4

	MSX28x8	8.00 x 28.00	10.00 x 28.00	2/7 9/9,5	P	2	M	6	140 – 500 um	Black FR4
	MSX D56	8.90 x 11.20	12.90 x 15.20 (Trapezoid Chip Shape)	2/7 9/9,5	M	2	M	6	140 – 1500 um	Black FR4
	MSX160	10.00 x 16.00	14.00 x 20.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX150	11.30 x 16.50	13.50 x 18.50	2/7 9/9,5	P	2	M	6	140 – 500 um	Detailed FR4 & Metal Housing
	MSX900	12.00 x 60.00	15.00 x 63.00	2/7 9/9,5	P	2	M	6	140 – 1000 um	Ceramic
	MSX060	15.00 x 40.00	18.00 x 43.00	2/7 9/9,5	M/T/P	2	M	4	50 – 1000 um 65 – 1000 um	Chip Only
	MSX060	15.00 x 40.00	19.00 x 44.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX1377	22.00 x 62.60	26.00 x 66.60 28.10 x 68.70	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX H3	24.00 x 43.00	28.00 x 47.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX3128	46.00 x 68.00	50.00 x 72.00 52.10 x 74.10	2	M	2	M	6	140 – 1500 um	Standard FR4
	MSX062	47.97 x 127.97	52.00 x 132.00	2	M	2	M	6	140 – 1500 um	Standard FR4

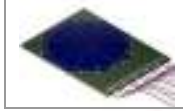
	MSX35	50.00 x 70.00	52.00 x 72.00	2	M/G	2	M	4	50 – 500 um	Range of FR4 Designs
	MSX7200	65.00 x 120.00	69.00 x 124.00	2	M	2	M	6	140 – 1500 um	Standard FR4

MULTI ELEMENT DETECTORS

Single Sided

Circular Designs without a Central Hole

Single sided multi element circular active areas with circular or multi faceted outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	ACTIVE AREA DIAMETER (mm)	CHIP DIMENSIONS (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
					Implant	Metal	Implant	Metal			
	MSA002/012	2, Annular	12.00	16.00 Flat-to-Flat (8 Sided)	2/7 9/9,5	M & T	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	LL36	8 Elements	$\varnothing_{OUTER}$ 12.00 – 3.70 $\varnothing_{INNER}$ 3.50	Ø 16.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	LL7	4, Annular	16.00	19.00 Flat-to-Flat (8 Sided)	2	M	2	M	4	50 – 1000 um	Standard FR4
	MSA003/016[§]	3 Elements	16.00	18.10 Flat-to-Flat Nº Sides = 8	2/7 9/9,5	M	2	M	4	Below 50 um 50 – 500 um 65 – 500 um	Black FR4
	MSA002/018	2, Annular	18.00	22.00 Flat-to-Flat Nº Sides = 8	2/7 9/9,5	P & M	2	M	6	140 – 1500 um	Black FR4
	LL11	5, Annular	19.90	21.00 Flat-to-Flat (8 Sided)	2	G	2	M	4	50 – 300 um	Ceramic
	LL10	15 Elements	20.00	21.00 Flat-to-Flat (8 Sided)	2/7 9/9,5	G	2	M	4	50 – 300 um 65 – 300 um	Ceramic

	MSA002/020	2, Annular	20.00	24.00 Flat-to-Flat Nº Sides = 16	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Chip Only
	LL8	7, Annular	28.00	31.60 Flat-to-Flat (4 Sided)	2	M	2	M	4	50 – 1000 um	Standard FR4
	MSA 002/040 (MSA040 Dual)	2, Annular	40.00	44.00 Flat-to-Flat (16 Sided)	2	M	2	M	6	140 – 1500 um	Flexi Rigid
	MSA016	90 Annular Elements	49.50	Ø 53.30	2	DM	2	M	6	140 – 1500 um	Chip Only

Circular Designs with a Central Hole

Single sided multi element circular active areas with central hole and circular or multi faceted outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	ACTIVE AREA DIAMETER (mm)		CHIP DIMENSIONS (mm)	HOLE Ø (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			Inner	Outer			Implant	Metal	Implant	Metal			
	LL1	4 Quadrants	15.995	33.80	34.80 Flat-to-Flat (12 Sided)	14.0	2/7 9/9,5	M	2	M	4	50 – 300 um 65 – 300 um	Standard FR4
	LL2	4 Quadrants	6.858	24.13	25.35 Flat-to-Flat (8 Sided)	5.600	2/7 9/9,5	M	2	M	4	50 – 300 um 65 – 300 um	Standard FR4
	LL2	4 Quadrants	6.858	24.13	25.35 Flat-to-Flat (8 Sided)	5.600	2/7 9/9,5	P	2	M	6	50 – 300 um 65 – 300 um	Standard FR4
	LL3	4 Quadrants	6.75	18.05	18.60 Flat-to-Flat (8 Sided)	4.90	2/7 9/9,5	M/G/P/T	2	M	4	50 – 300 um 65 – 300 um	Ceramic
	LL4	4 Quadrants	4.25	10.05	10.60 Flat-to-Flat (8 Sided)	3.30	2/7 9/9,5	M/G	2	M	4	50 – 300 um 65 – 300 um	Standard FR4
	LL4	4 Quadrants	4.25	10.05	10.60 Flat-to-Flat (8 Sided)	3.30	2/7 9/9,5	M/G	2	M	6	140 - 300 um	Standard FR4
	LL13	4 Quadrants	5.85	FLAT = 18.00	19.00 Flat-to-Flat (8 Sided)	4.90	2/7 9/9,5	G/P	2	M	6	140 – 300 um	Ceramic
	LL22	4 Quadrants	6.60	FLAT = 14.138	18.288 Flat-to-Flat (12 Sided)	5.60	2/7 9/9,5	G	2	M	6	140 – 1000 um	Standard FR4

	LL23	3 Elements	6.60	FLAT = 14.138	15.068 Flat-to-Flat (8 Sided Special)	5.60	2/7 9/9,5	G	2	M	6	140 – 300 um	Standard FR4
	LL30	2 Elements	5.00	28.80 Flat-To-Flat (12 Sides)	30.80 Flat-To-Flat (12 Sides)	4.00	2/7 9/9,5	G	2	M	6	140 – 500 um	Chip Only
	LL31	1 Element	3.50	12.00	Ø 16.00	2.50	2	M	2	M	6	140 – 500 um	Standard FR4
	LL32	4 Quadrants	6.40	10.00	10.75 Flat-to-Flat (8 Sided)	5.40	2/7 9/9,5	M/G	2	M			Chip Only
	MSA002/040-2	8 Quadrants	15.00	40.00	44.00 Flat-to-Flat (8 Sides)	12.00	2/7/9/ 9.5	M	2	M	6	140 - 1500	Rogers PCB
	MSA003/044	24 Elements	20.00	44.60	Ø 50.60	17.00	2	DM	2	M	6	140 – 1500 um	Chip Only
	MSA127	127 Elements	4.00	134.65	136.472 Flat-to-Flat (8 Sided Special)	2.00	2	M	2	M	6	140 – 1000 um	Ceramic Flip chip mounted

Multi Element Sector Designs

Single sided multi element active area with multiple assemblies completing almost 360º coverage.

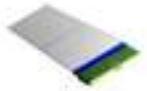
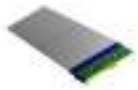
ASSEMBLY EXAMPLES	DESIGN	JUNCTION		TOTAL SECTOR COVERAGE	ACTIVE AREA DIAMETER (mm)		CHIP DIAMETER (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)		Inner	Outer	Inner	Outer	Implant	Metal	Implant	Metal			
	YY1	16	5000	42º	100.00	259.80	89.95	264.00	2/7 9/9,5	M/T/P	2	M	4	50 – 1000 um 65 – 1000 um	Standard FR4

Multi Element Trapezoids Designs

Single sided trapezoid active areas with multiple assemblies completing almost 360º coverage. Some of these assemblies have been installed in the 4π detector CHIMERA at the Superconductive Cyclotron at INFN-Laboratori Nazionali del Sud in Catania.

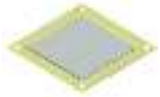


ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	TOTAL ACTIVE AREA (mm)			CHIP DIMENSIONS (mm)			JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			Length (mm)	Width 1 (mm)	Width 2 (mm)	Length (mm)	Width 1 (mm)	Width 2 (mm)	Implant	Metal	Implant	Metal			
	D123	3	16.50	11.41	4.85	21.50	16.68	8.13	2	M	2	M	6	140 – 1000 um	Black FR4
	RRR-1	2	99.10	62.25	22.85	106.60	63.20	23.70	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-2	2	104.15	62.10	34.70	111.65	63.10	35.60	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-3	2	103.90	58.60	38.25	111.40	59.60	39.15	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-4	2	108.10	55.50	38.65	115.60	56.50	39.60	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-5	2	93.35	61.95	47.55	100.85	62.95	48.45	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4

	RRR-6	2	81.90	55.85	45.45	89.40	56.85	46.40	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-7	2	95.80	60.80	48.85	103.30	61.80	49.80	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-8	2	81.85	61.95	52.00	89.35	62.95	52.90	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4
	RRR-9	2	105.15	63.80	51.55	112.65	64.80	52.45	2/7 9/9,5	M/T	2	M	6	140 – 300 um	Standard FR4

Square Designs without a Central Hole

Single sided multi element square active areas with square outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	ELEMENT ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
					Implant	Metal	Implant	Metal			
	MSQ25	4 Quadrants	24.975 x 24.975	57.02 x 57.02 maximum	2	M	2	M	4	50 – 2000 um	Range of FR4 designs
	MSQ25	4 Quadrants	24.975 x 24.975	54.00 x 54.00	2/7 9/9,5	M	2	M	6	140 – 1500 um	Range of FR4 designs

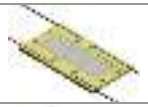
Square Designs with a Central Hole

Single sided multi element square active areas with a central hole and square outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	ACTIVE AREA (mm)		CHIP DIMENSIONS (mm)	HOLE ∅ (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			Inner	Outer			Implant	Metal	Implant	Metal			
	LL16	4 Quadrants	∅ 2.00	12.00 x 12.00	14.00 Flat-to-Flat (4 Sided)	1.05	2/7 9/9,5	G	2	M	6	140 – 300 um	Standard FR4

Rectangular Designs (without a Central Hole)

Single sided multi element active areas with rectangular outer chip dimensions.

ASSEMBLY EXAMPLES	DESIGN	NUMBER OF ELEMENTS	TOTAL ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
					Implant	Metal	Implant	Metal			
	MLTS	3	~ 1.61 x 11.10	7.20 x 15.10	2	M	2	M	6	140 – 1500 um	Standard FR4
	D7	4	6.00 x 15.00	10.00 x 19.00	2/7 9/9,5	P	2	M	6	140 – 1500 um	Black FR4
	XXX5	2	6.00 x 15.00	10.00 x 19.00	2/7 9/9,5	P	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	XXX3	4	6.34 x 12.712	8.50 x 14.70	2/7 9/9,5	M & P	2	M	4	50 – 500 um 65 – 500 um	Standard FR4
	MSPX1x3	3	11.00 x 41.00	15.00 x 45.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	XXX4	2	26.50 x 57.50	29.50 x 60.50	2/7 9/9,5	M	2	M	4	50 – 1000 um 65 – 1000 um	Standard FR4

Double Sided

Circular Designs without a Central Hole

Double sided multi element circular active areas with circular or multi faceted outer chip dimensions.

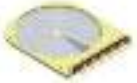
ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		ACTIVE AREA Ø (mm)		CHIP DIMENSIONS Ø (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)	ELEMENTS	PITCH (µm)	Inner	Outer	Nº Flats	Flat-to-Flat	Implant	Metal	Implant	Metal			
	MSA 003/030	4 (1 central pad & 3 Rings)	Variable	4 Quadrants	90º	-	30.00	8	34.00	2	M	2	M	4	50 – 1500 um	Standard FR4

Circular Designs with a Central Hole

Double sided multi element active area with central hole. A single assembly completing almost 360° coverage. All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[1].

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		ACTIVE AREA Ø (mm)		CHIP DIMENSIONS Ø (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)	ELEMENTS	PITCH (µm)	Inner	Outer	Inner	Outer	Implant	Metal	Implant	Metal			
	S1(DS)	64 Incomplete Rings	1505	16 Sectors	22.5°	48.00	96.00	46.00	100.00	2	M	2	M	4	50 – 500 um	Standard FR4
	S1_1500(DS)	64 Incomplete Rings	1505	16 Sectors	22.5°	48.00	96.00	42.00	Flat-to-Flat 101.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	S2(DS)§	48 Incomplete Rings	491	16 Sectors	22.5°	23.06	70.00	20.00	76.00	2	M	2	M	4	Below 50 um 50 – 1000 um	Standard FR4
	S2_1500(DS)	45 Incomplete Rings	491	16 Sectors	22.5°	26.01	70.00	20.00	Flat-to-Flat 76.00	2	M	2	M	4	65 – 1500 um	Standard FR4
	S3(DS)§	24 Complete Rings	986	32 Sectors	11.25°	23.00	70.00	20.00	76.00	2	DM	2/7	M/P	4	Below 50 um 50 – 1000 um	Standard FR4
	S3(SS)§	32 Sectors	11.25°	-	-	23.00	70.00	20.00	76.00	2/7 9/9,5	M/P	2	M	4	Below 50 um 50 – 1000 um	Standard FR4
	S4(DS)	128 Sectors	2.8125°	256 Complete Rings	215	15.00	124.98	10.00	130.10	2/7 9/9,5	P	2	M	6	140 – 1500 um	Range of FR4 Designs
	S5(DS)	24 Incomplete Rings	Varies	16 Sectors	22.5°	22.96	70.09	20.00	76.00	2/7 9/9,5	P	2/7	P	4	50 – 1000 um 65 – 1000 um	Standard FR4
	S7(DS)	45 Complete Rings	493	16 Sectors	22.5°	25.92	70.09	20.00	76.00	2	DM	2	M	4	50 – 1500 um 65 – 1500 um	Standard FR4
	S9(DS)	7 Incomplete Rings	Varies	16 Sectors	22.5°	22.96	70.09	20.00	76.00	2/7/9/ 9.5	P	2	M	4	50 – 1500 um	Standard FR4

[1] Some modifications may be necessary to the detector package.

	S10(DS)	36 Complete Rings	1000	16 Sectors	22.5°	8.00	79.80	4.00	86.00	2	DM	2	M	6	140 – 1500 um	Standard FR4
	S12(DS)	64 Sectors	5.625°	64 Incomplete Rings	757	25.10	125.80	29.10	Flat-to-Flat 130.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	S13(DS)	64 Sectors	5.625°	64 Incomplete Rings	757	25.00	120.90	20.00	Flat-to-Flat 125.00	2/7/9/ 9.5	P	2	M	6	140 – 1500 um	Standard FR4
	S14(DS)	36 Incomplete Rings	833	12 Sectors	30°	10.00	69.78	6.00	Flat-to-Flat 73.80	2/7/9/ 9.5	P	2	M	4	50 – 1500 um	Standard FR4

Sector Circular Designs

Double sided multi element active area of sectors and annular strips with central hole. Multiple assemblies completing almost 360° coverage.

ASSEMBLY EXAMPLES	DESIGN	SECTOR COVERAGE	JUNCTION		OHMIC		ACTIVE AREA DIAMETER (mm)		CHIP DIAMETER (mm)		JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
			ELEMENTS	PITCH (µm)	ELEMENTS	PITCH (°)	Inner	Outer	Inner	Outer	Implant	Metal	Implant	Metal			
	QQQ2[§]	82°	16	2000	24	3.75	18.00	82.00	11.50	85.00.	2	M	2	M	4	Below 50 um 50 – 1000 um 65 – 1000 um	Standard FR4
	QQQ3	90°	16	3057	16	5.625	100.20	198.00	96.20	200.20	2/7 9/9,5	M/T/P	2	M	6	140 – 1500 um	Standard FR4
	QQQ6	90°	32	1200	4	~22.5	32.85	155.95	28.80	160.00	2/7 9/9,5	P	2	M	6	140 – 1500 um	Flexi Rigid
	QQQ5	90°	32	2550	4	22.5	50.50	163.90	46.40	168.00	2/7 9/9,5	P	2	M	6	140 – 1500 um	Flexi Rigid
	MMM	60°	16	6410	8	6.80	65.20	270.20	55.26	272.20	2	M	2	M	6	140 – 500 um	Standard FR4
	MMM2	60°	17	Upon Request	8	6.80	Upon Request	Upon Request	Upon Request	Upon Request	2	M	2	M	6	140 – 1000 um	Standard FR4
	MMM3	60°	16	Upon Request	8	6.80	Upon Request	Upon Request	Upon Request	Upon Request	2	M	2	M	6	140 – 1000 um	Standard FR4
	MMM5	60°	15	6412.75	8	6.80°	78.02	270.02	Upon Request	Upon Request	2	M	2	M	6	140 – 1500 um	Standard FR4

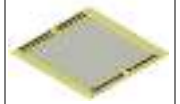
	MMM6	52.4°	32	3250	16	3.275°	30.00	133.90	28.00	136.00	2	M	2	M	6	140 – 1500 um	Standard FR4

STRIP DETECTORS

Single Sided

DC Strip Detectors without Bias Resistors

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)			Implant	Metal	Implant	Metal			
	ZZZ	20	1000	7.00 x 19.90	11.00 x 24.00	2	M	2	M	4	50 – 1500 um	Standard FR4
	BB35	8	1575	12.50 x 96.00	14.50 x 98.00	2/7/9/9.5	9	2	M	6	140 – 500 um	Rigid Flexi
	EE2	40	500	20.00 x 50.00	22.40 x 52.40	2	M	2	M	4	50 – 500 um	Standard FR4
	EE1	96	650	20 .00 x 62.40	22.90 x 65.00	2	M	2	M	4	50 – 500 um	Standard FR4
	BB22	256	450	20 .00 x 115.15	24 .00 x 119.20	2/7 9/9,5	P	2	M	6	140 – 1500 um	Black FR4

	BB9	4	7000	27.90 x 94.80	30.00 x 96.88	2	M	2	M	6	140 – 1000 um	Standard FR4
	BB10	8	600	38.30 x 50.00	42.30 x 78.00	2	M	2	M	4	50 – 1500 um	Standard FR4
	BB37	64	4944	39.45 x 74.15	43.30 x 54.00	2	M	2	M	6	150 – 1500 um	Standard FR4
	BB16	4	11600	46.30 x 70.40 Trapezoid Left & Right	50.40 x 75.56 Trapezoid Left & Right	2	M	2	M	4	50 – 1500 um	Standard FR4
	BB23	4	12462.5	50 .00 x 50.00	52 .20 x 52.20 54 .30 x 54.30	2	M	2	M	6	140 – 1500 um	Standard FR4
	W1[§]	16	3100	49.50 x 49.50	54.60 x 54.60	2/7 9/9,5	M	2	M	6	Below 20 um	Standard FR4.
	BB19	64	1200	50.00 x 76.77	53.50 x 80.32	2/7 9/9,5	P	2	M	4	50 – 1000 um 65 – 1000 um	Ceramic
	W4	8	15000	63.00 x 120.00	67.00 x 124.00	2/7 9/9,5	G	2	G	6	140 – 1500 um	Standard FR4
	TTT17	64	1500	95.97 x 95.97	100.00 x 100.00	2	M	2	M	6	140 – 1500 um	Standard FR4
	TTT12	20	4850	96.95 x 96.95	101.00 x 101.00	2/7 9/9,5	G	2	M	6	140 – 1500 um	Standard FR4

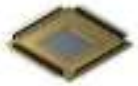
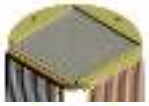
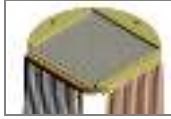
DC Strip Detectors with Bias Resistors

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)			Implant	Metal	Implant	Metal			
	BB18	128	560	71.63 x 71.63	75.60 x 75.60	2	M	2	M	4	50 – 1000 um	Standard FR4

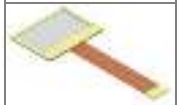
Double Sided

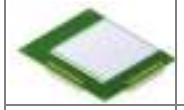
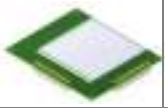
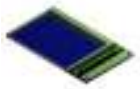
DC Strip Detectors without Bias Resistors

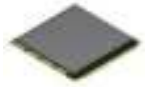
All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[2].

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		STRIPS	PITCH (µm)	STRIPS	PITCH (µm)			Implant	Metal	Implant	Metal			
	BB8	16	1250	16	1250	20.00 x 20.00	22.90 x 22.90	2/7 9/9,5	M/P/T	2/7/9	M/P/T	4	50 – 1000 um 65 – 1000 um	Range of designs in different materials.
	BB21	128	950	11	2000	21.90 x 121.50	25.00 x 125.00	2/7 9/9,5	M/P/T	2/7/9	M/P/T	6	140 – 1000 um	Chip Only
	BB2	24	1000	24	1000	24.00 x 24.00	26.00 x 26.00	2	M	2	M	4	50 – 500 um	Standard FR4
	BB5	80	400	80	400	31.95 x 31.95	37.60 x 37.60	2	M	2	M	4	50 – 1500 um	Standard FR4
	W5	32	1180	32	1180	37.66 x 37.66	41.80 x 41.80	2	M	2	M	6	140 – 1500 um	Standard FR4
	W7	32	1000	32	1000	31.95 x 31.95	36.00 x 36.00	2	M	2	M	6	140 – 1500 um	Standard FR4

[2] Some modifications may be necessary to the detector package.

	BB1	40	1000	40	1000	39.90 x 39.90	45.52 x 45.52 max	2	M	2	M	4	50 – 1500 um	Standard FR4
	BB15	64	1172.5	4	10087.5	40.3 x 75.00	43.30 x 78.00	2	M	2	M	4	50 – 1000 um	Standard FR4
	BB36	16	4662.5	16	2537.5	40.55 x 74.55	43.60 x 77.60	2	M	2	M	6	140 – 1000 um	Rigid Flexi
	BB17	48	1000	128	1000	47.97 x 127.97	52.00 x 132.00	2/7 9/9,5	P	2	M	6	140 – 1500 um	Standard FR4
	BB20	192	670	72	670	48.21 x 128.61	52.21 x 132.61	2/7 9/9,5	P	2	M	6	140 – 1500 um	Rigid Flexi
	W1[§]	16	3100	16	3100	49.50 x 49.50	53.78 x 53.78	2/7 9/9,5	M/G/P/T	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Range of designs in different materials.
	W1	16	3100	16	3100	49.50 x 49.50	54.60 x 54.60	2/7 9/9,5	M/G	2	M	6	140 – 1500 um	Range of designs in different materials.
	W1 PARA	16	3100	16	3100	49.50 x 49.50	54.60 x 54.60	2/7 9/9,5	M/G	2	M	6	140 – 1500 um	Standard FR4.
	W6	32	1550	32	1550	49.50 x 49.50	53.55 x 53.55	2	M	2	M	6	140 – 1500 um	Standard FR4
	W2	100	500	100	500	49.95 x 49.95	53.00 x 53.00	2	M	2	M	4	50 – 1500 um	Chip Only
	BB24	48	1250	96	1250	59.97 x 119.70	64.00 x 124.00	2/7 9/9,5	P	2	M	6	140 – 1500 um	Standard FR4

	BB13	128	485	128	485	62.03 x 62.03	64.00 x 64.00	2	M	2	M	4	50 – 500 um	Flexi Rigid
	BB12	160	390	160	390	62.35 x 62.35	66.35 x 66.35	2	M	2	M	4	50 – 1500 um	Standard FR4
	BB28§	64	1000	64	1000	63.95 x 63.95	68.00 x 68.00	2/7 9/9.5	M/P	2	M	6	150 – 1500 um	Flexi-Rigid
	BB7§	32	2000	32	2000	63.96 x 63.96	67.975 x 67.975	2/7 9/9,5	M/P/T	2	M	4	Below 50 um 50 – 1500 um 65 – 1500 um	Range of designs in different materials.
	BB7	32	2000	32	2000	63.96 x 63.96	67.975 x 67.975	2	M	2	M	6	140 – 1500 um	Range of designs in different materials.
	BB4	64	1000	64	1000	63.96 x 63.96	66.75 x 66.75	2	M	2	M	4	50 – 1000 um	Chip Only
	BB11	24	3000	48	1000	71.90 x 47.90	76.00 x 52.00	2/7 9/9,5	G	2/7/9	G	4	50 – 1500 um 65 – 1000 um	Standard FR4
	TTT11	128	717	128	742	91.716 x 94.916	95.75 x 98.75	2	M	2	M	6	140 – 1500 um	Flexi Rigid
	TTT9	1024	90.80	1024	90.80	92.91 x 95.43	95.15 x 97.75	2	M	2	M	6	140 – 1500 um	Chip Only
	TTT6	64	1470	64	1470	93.20 x 93.20	99.20 x 99.20	2	M	2	M	6	1500 um	Chip Only
	TTT10	32	3000	32	3000	95.97 x 95.97	100.00 x 100.00	2	M	2	M	6	140 – 1500 um	Standard FR4

	TTT2	128	760	128	760	97.22 x 97.22	100.42 x 100.42	2	M	2	M	6	140 – 1000 um	Range of designs in different materials.
	TTT3	128	760	128	760	97.22 x 97.22	100.42 x 100.42	2/7 9/9,5	G/P/T	2	M	6	140 – 1000 um	Standard FR4
	TTT4	128	760	128	760	97.22 x 97.22	100.42 x 100.42	2/7 9/9,5	M/G/P/T	2	M	6	140 – 1000 um	Standard FR4
	TTT5	128	760	128	760	97.22 x 97.22	100.42 x 100.42	2/7 9/9,5	G	2	M	6	140 – 1000 um	Standard FR4

DC Strip Detectors without Bias Resistors Trapezoids.

All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[3].

DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
	STRIPS	PITCH (µm)	STRIPS	PITCH (µm)			Implant	Metal	Implant	Metal			
FFF2	128	715	130	750	~104.39 x 25.20 x 91.45	106.50 x 26.73 x 91.45 (Wedge)	2	M	2	M	6	65 – 500 um	Flexi Rigid PCB
MMM4	16	Variable	16	Variable	108.85 x 23.65 x 92.79 (Wedge)	112.91 x 26.62 x 98.33 (Wedge)	2/7 9/9,5	M/P/T	2	M	6	140 – 1500 um	Flexi Rigid PCB

DC Strip Detectors with Bias Resistors

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		STRIPS	PITCH (µm)	STRIPS	PITCH (µm)			Implant	Metal	Implant	Metal			
	BB14	256	227	128	875	58.06 x 111.95	61.00 x 115.00	2	M	2	M	6	140 – 1000 um	Chip Only

[3] Some modifications may be necessary to the detector package.

MICROSTRIP DETECTORS

Single Sided

Orthogonal AC Microstrip Detectors

DESIGN	JUNCTION		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
	ELEMENTS	PITCH (µm)			Implant	Metal	Implant	Metal			
OOO	256	25	6.40 x 77.33	8.44 x 78.40	2	M	2	M	6	140 – 500 um	Chip Only
OOO2	400	80	32.00 x 60.00	35.00 x 63.00	2	M	2	M	6	140 – 1000 um	Chip Only
UUU1	320	194	64.00 x 106.80		2	M	2	M	6	140 – 500 um	Chip Only
UUU2	384	228	87.50 x 87.50	89.50 x 89.50	2	M	2	M	6	140 – 500 um	Chip Only
TTT15	768	125	96.03 x 96.00	98.01 x 97.86	2	M	2	M	6	140 – 500 um	Chip Only

Double Sided

Orthogonal AC Microstrip Detectors

All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[4].

DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
	STRIPS	PITCH (μm)	STRIPS	PITCH (μm)			Implant	Metal	Implant	Metal			
BBB1	799	50	821	50	39.95 x 41.05	41.25 x 42.35	2	M	2	M	4	65 – 500 um	Chip Only
BBB2	874	55	881	50	48.07 x 44.05	49.36 x 45.35	2	M	2	M	4	65 – 500 um	Chip Only
BBB3	1275	55	859	50	70.12 x 42.50	71.42 x 43.85	2	M	2	M	4	65 – 500 um	Chip Only
BBB4	1023	50	631	105	51.15 x 66.26	54.45 x 67.50	2	M	2	M	4	65 – 500 um	Chip Only
BBB5	1023	50	525	100	51.15 x 52.50	53.85 x 54.45	2	M	2	M	4	65 – 500 um	Chip Only
BB26	128	498	128	498	63.54 x 63.54	67.60 67.60	2	M	2	M	4	140 – 500 um	Chip Only
BBB11	1024	50	768	57	51.17 x 57.54	52.66 x 59.04	2	M	2	M	4	140 – 300 um	Chip Only
DDD5	384	50	768	153.5	19.20 x 117.89.00	21.20 x 120.125	2	M	2	DM	6	140 – 500 um	Chip Only
BB32	610	200	150	200	29.90 x 121.90	32.00 x 124.00	2	M	2	M	6	300 – 700 um	Chip Only
BB33	605	200	313	200	62.50 x 120.90	64.60 x 123.00	2	M	2	M	6	300 – 700 um	Chip Only
TTT1	128	758	128	758	96.97 x 96.97	98.95 x 98.95	2	G	2	G	6	140 – 500 um	Standard FR4

[4] Some modifications may be necessary to the detector package.

Stereo AC Microstrip Detectors

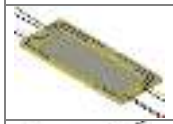
DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
	STRIPS	PITCH (µm)	STRIPS	PITCH (µm)			Implant	Metal	Implant	Metal			
GGG	640	50	512	62.5 (2°)	32.00 x 58.27	34.00 x 60.00	2	M	2	M	4	65 – 500 um	Chip Only
BBB6	1023	50 - 41	667	105	51.13 x 41.93 x 66.57	52.78 x 43.28 x 67.95 (Wedge)	2	M	2	M	4	65 – 500 um	Chip Only
EEE	512	112	512	112 (1.2°)		59.30 x 74.70.	2	M	2	M	6	140 – 500 um	Chip Only
FFF	1024	50	768	62.5		79.21 x 59.21 x 16.73 (Wedge)	2	M	2	M	4	65 – 500 um	Chip Only
HHH	516	160	516	160		115.90 x 23.20 x 85.40 (Wedge)	2	M	2	M	6	140 – 500 um	Chip Only

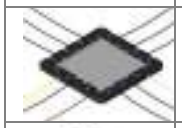
Please contact Micron Semiconductor Ltd directly for details on the R3B layers A, B, C & D and the Belle and Super Belle detector designs.

PAD DETECTORS

Single Sided

DC Pad Detectors (without Bias Resistors)

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		PIXEL ARRAY	PITCH ARRAY (µm)			Implant	Metal	Implant	Metal			
	MSPX 1x1	1 x 1	1000 x 1000	1.00 x 1.00	4.00 x 20.50	2	M	2	M	4	50 – 1500 um	Stackable Standard FR4
	MSPX 1x1	1 x 1	1000 x 1000	1.00 x 1.00	4.00 x 20.50	2	M	2	M	6	140 – 1500 um	Stackable Standard FR4
	MSPX 1x16	1 x 16	1000 x 1000	1.00 x 17.50	4.00 x 20.50	2	M	2	M	4	50 – 1500 um	Stackable Standard FR4
	MSPX 1x16	1 x 16	1000 x 1000	1.00 x 17.50	4.00 x 20.50	2	M	2	M	6	140 – 1500 um	Stackable Standard FR4
	MSPX 1x5	1 x 5	Variable	18.10 x 60.50	22.10 x 64.50 24.20 x 66.60	2	M	2	M	6	140 – 1500 um	Stackable Standard FR4
	MSPX 3 x 3-3	3 x 3	4120 x 4120	12.24 x 12.24	16.40 x 16.40	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Stackable Black FR4
	MSPX 3 x 3-2	3 x 3	Variable	12.88 x 12.88	16.90 x 16.90	2	M	2	M	4	50 – 1500 um	Stackable Black FR4
	MSPX 4x4	4 x 4	4950 x 4950	19.95 x 19.95	24.00 x 24.00	2	DM	2	M	6	140 – 1500 um	Chip Only

	MSPX 4x4	4 x 4	4950 x 4950	19.95 x 19.95	24.00 x 24.00	2/7 9/9,5	G	2	M	6	140 – 1500 um	Stackable Black FR4
	MSPX 3x3	3 x 3	12 120 x 12 120	36.24 x 36.24	40.24 x 40.24	2/7 9/9,5	M	2	M	6	140 – 1500 um	Stackable Black FR4
	MSPX 12x12	12 x 12	4950 x 4950	59.95 x 59.95	64.00 x 64.00	2	DM	2	M	6	140 – 1500 um	Range of designs in different materials.
	MSPAD 1x9	1 x 9	Variable	6.00 x 54.00	10.00 x 58.90	2/7 9/9,5	M	2	M	4	50 – 1500 um 65 – 1500 um	Black FR4
	MSPX 042	4 x 4	10 000 x 10 000	46.00 x 46.00	60.00 x 60.00	2	M	2	M	4	50 – 2000 um	Black FR4
	MSPAD 1x4-1	1 x 4	Variable	12.00 x 48.00	16.00 x 52.00	2	M	2	M	4	50 – 1500 um	Stackable Black FR4
	MSPAD 1x7 (Based on Design I)	1 x 7	8 720 x 40 000	60.94 x 40.00	65.14 x 44.00	2	M	2	M	4	50 – 1500 um	Standard FR4
	MSPAD1x8	1 x 8	11 700 x 12 112.5	11.70 x 96.80	13.70 x 98.80	2/7/9/ 9.5	p	2	M	6	140 – 500 um	Rigid Flexi
	MSPX 080	8 x 8	12 075 x 12 075	96.95 x 96.95	99.00 x 99.00	2	DM	2	M	6	140 – 1000 um	Chip Only
	MSPAD 1x4-2	1 x 4	Variable	16.00 x 50.00	20.00 x 54.00	2	M	2	M	4	50 – 1500 um	Stackable Black FR4

	MSPX06 3	63 Total	Various	∅ 100.00	∅ 104.00	2/7 9/9,5	M/G	2	M	6	140 – 1500 um	Ceramic
	MSPX 128	128 Total	Hexagon Flat to-Flat 8910	∅ 117.15	∅ 123.15	2/7 9/9,5	G	2	M	6	140 – 2000 um	Ceramic

Double Sided

DC Pad Detectors (without Bias Resistors)

All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[5].

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		TOTAL ACTIVE AREA (mm)	CHIP DIMENSIONS (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	PITCH (µm)	ELEMENTS	PITCH (µm)			Implant	Metal	Implant	Metal			
	MSPAD 1x5	5	Variable	5	Variable	10.00 x 40.80	16.00 x 46.80	2	M	2	M	4	50 – 2000 um	Black FR4

[5] Some modifications may be necessary to the detector package.

PIXEL DETECTORS

Single Sided

DC Pad Detectors

DESIGN	JUNCTION		ACTIVE AREA (mm)	CHIP DIMENSIONS (mm)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
	PIXEL ARRAY	PITCH ARRAY (µm)			Implant	Metal	Implant	Metal			
MSPX 96x128	96 x 128	150.00 x 150.00	14.35 x 19.15	17.35 x 22.15	2	M	2	M	6	140 – 1000 um	Chip Only
MSPX 80 x 335	80 x 335	50.00 x 252.5	17.18 x 19.985	18.15 x 20.95	2	M	2	M	6	140 – 1000 um	Chip Only
MSPX 256 x 256-1	256 x 256	55.00 x 55.00	14.06 x 14.06	15.90 x 15.90	2	M	2	M	6	140 – 1000 um	Chip Only
MSPX 256 x 256-2	256 x 256	55.00 x 55.00	14.06 x 14.06	15.90 x 16.10	2	M	2	M	6	140 – 1000 um	Chip Only

POSITION SENSITIVE DETECTORS

Single Sided

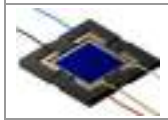
Single Area Devices

Single area devices with readout along two ends of the active area and the rear of the device.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	T	50.00 x 10.00	52.00 x 12.00	PSD	E	2	M	4	50 – 500 um	Standard FR4 with metal housing
	T-2	50.00 x 10.00	54.00 x 14.00	PSD	E	2	M	4	50 – 1500 um	Standard FR4 with metal housing

Single Area Tetra-Lateral Devices

Single area devices with readout on all four corners of the active area and the rear of the device.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	MSPSD TL 50	5.00 x 5.00	15.356 x 15.356	PSD	E	2	M	4	50 – 500 um	Chip Only
	MSPSD TL 07	7.00 x 7.00	10.00 x 10.00	PSD	E	2	M	4	50 – 500 um	Chip Only
	MSPSD TL 20	20.00 x 20.00	24.00 x 24.00	PSD	E	2	M	4	50 – 1500 um	Black FR4
	MSPSD TL 63	63.00 x 63.00	66.00 x 66.00	PSD	E	2	M	4	50 – 1500 um	Black FR4

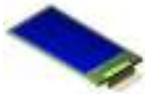
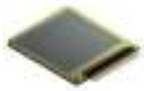
Multi Element Area Devices

Single sided multi element area devices with readout along two ends of the active area and the rear of the device.

	DESIGN	JUNCTION		TOTAL ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	ELEMENT ACTIVE AREA (mm^2)			Implant	Metal	Implant	Metal			
	TT	2	90.00 x 10.00	90.00 x 10.00	94.00 x 14.00	PSD	E	2	M	6	150 – 1500 um	Standard FR4

Strip Devices

Single sided strip devices with readout along two ends of each strip and the rear of the device.

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		TOTAL ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		ELEMENTS	ELEMENT ACTIVE AREA (mm^2)			Implant	Metal	Implant	Metal			
	X2	4	5.55 x 94.80	22.20 x 94.80	24.6 x 96.80	PSD	E	PSD	E	6	140 – 500 um	Standard FR4
	X3	4	10.00 x 75.00	40.30 x 75.00	43.3 x 78.00	PSD	E	PSD	E	4	50 – 1000 um	Standard FR4
	X4	8	5.10 x 75.00	41.50 x 75.00	45.60 x 79.00	PSD	E	PSD	E	4	50 – 1500 um	Standard FR4
	X1[§]	16	3.00 x 50.00	50.00 x 50.00	54.00 x 54.00	PSD	E	PSD	E	4	Below 50 um 50 – 1500 um	Standard FR4

Double Sided

Single Area Duo-Lateral Devices

Double sided single area devices with readout along two opposite edges on the front of the devices and orthogonal readout edge on the rear of the device.

ASSEMBLY EXAMPLES	DESIGN	ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
				Implant	Metal	Implant	Metal			
	MSPSD DL 010	1.00 x 1.00	3.00 x 3.00	PSD	E	PSD	E	4	50 – 500 um	Chip Only
	MSPSD DL 011§	1.00 x 1.00	15.356 x 15.356	PSD	E	PSD	E	4	50 – 500 um	Ceramic
	MSPSD DL 030	3.00 x 3.00	5.00 x 5.00	PSD	E	PSD	E	4	50 – 500 um	Chip Only
	MSPSD DL 031§	3.00 x 3.00	15.356 x 15.356	PSD	E	PSD	E	4	50 – 500 um	Ceramic
	MSPSD DL 050	5.00 x 5.00	7.00 x 7.00	PSD	E	PSD	E	4	50 – 500 um	Chip Only
	MSPSD DL 051§	5.00 x 5.00	15.356 x 15.356	PSD	E	PSD	E	4	50 – 500 um	Ceramic
	MSPSD DL 03	10.00 x 10.00	12.00 x 12.00	PSD	E	2	M	4	50 – 500 um	Chip Only
	MSPSD DL 0311§	10.00 x 10.00	15.356 x 15.356	PSD	E	2	M	4	50 – 500 um	Ceramic
	MSPSD DL 04	20.00 x 20.00	21.00 x 23.00	PSD	E	2	M	4	50 – 300 um	Standard FR4
	MSPSD DL 041	20.00 x 20.00	24.00 x 24.00	PSD	E	2	M	4	50 – 1500 um	Black FR4
	MSPSD DL 63	63.00 x 63.00	66.00 x 66.00	PSD	E	2	M	4	50 – 1000 um	Chip Only

Strip Devices

Double sided strip devices with readout along two ends of each strip front and rear of the device. All double sided devices can be fabricated as single sided devices using either the double sided junction or ohmic side[6].

ASSEMBLY EXAMPLES	DESIGN	JUNCTION		OHMIC		ACTIVE AREA (mm^2)	CHIP DIMENSIONS (mm^2)	JUNCTION WINDOW		OHMIC WINDOW		WAFER SIZE (inch)	SILICON THICKNESS RANGE	PACKAGE
		STRIPS	ELEMENT ACTIVE AREA (mm^2)	STRIPS	ELEMENT ACTIVE AREA (mm^2)			Implant	Metal	Implant	Metal			
	Super X3	4	10.00 x 75.00	4	18.675 x 40.30	40.30 x 75.00	43.30 x 78.00	PSD	E	PSD	E	4	50 – 1000 um	Standard FR4
	X6	8	4.95 x 75.00	4	18.675 x 40.30	40.30 x 75.00	43.30 x 78.00	PSD	E	PSD	E	4	40 – 1000 um	Standard FR4
	X5	32	2.97 x 95.97	32	2.97 x 95.97	95.97 x 95.97	100.00 x 100.00	PSD	E	PSD	E	6	140 – 1500 um	Standard FR4

[6] Some modifications may be necessary to the detector package.

NOTES

NOTES

NOTES

INDEX

BB1 35
BB10 32
BB11 36
BB12 36
BB13 36
BB14 38
BB15 35
BB16 32
BB17 35
BB18 33
BB19 32
BB2 34
BB20 35
BB21 34
BB22 31
BB23 32
BB24 35
BB26 40
BB28 36
BB32 40
BB33 40
BB35 31
BB36 35
BB37 32
BB4 36
BB5 34
BB7 36
BB8 34
BB9 32
BBB1 40
BBB11 40
BBB2 40
BBB3 40
BBB4 40
BBB5 40
BBB6 41
D123 24
D7 26
DDD5 40
EE1 31
EE2 31
EEE 41
FFF 41
FFF2 38
GGG 41
H1 12
H2 26
HHH 41
LL1 21
LL10 19
LL11 19
LL13 21
LL16 26
LL2 21
LL21 11
LL22 21
LL23 22
LL3 21
LL30 22
LL31 22
LL32 22
LL36 19
LL4 21
LL7 19
LL8 20
MLTS 26
MMM 30
MMM2 30
MMM3 30
MMM4 38
MMM5 30
MMM6 31
MSA002/012 19
MSA002/018 19
MSA002/020 20
MSA002/044 22
MSA003/016 19
MSA003/030 27
MSA003/044 22
MSA016 20
MSA127 22
MSD003 6
MSD0036 6
MSD003810 6

MSD004 6
MSD004572 6
MSD005 6
MSD006 6
MSD007 7
MSD008 7
MSD009 7
MSD010 7
MSD011 7
MSD012 ..... 7, 8
MSD013 8
MSD014 8
MSD015 8
MSD015-2 8
MSD017 8
MSD018 8
MSD020 8
MSD022 9
MSD023 9
MSD024 9
MSD024-1 9
MSD024-2 9
MSD026 9
MSD028 9
MSD030 9
MSD032 10
MSD035 10
MSD040 10
MSD044 10
MSD050 10
MSD062 7
MSD085 10
MSE 1 10
MSPAD 1x4-1 43
MSPAD 1x4-2 43
MSPAD 1x5 44
MSPAD 1x7 (Based on the Design I 43
MSPAD 1x9 43
MSPAD1x8 43
MSPSD DL 010 48
MSPSD DL 011 48
MSPSD DL 03 48
MSPSD DL 030 48
MSPSD DL 031 48
MSPSD DL 0311 48
MSPSD DL 04 48
MSPSD DL 041 48
MSPSD DL 050 48
MSPSD DL 051 48
MSPSD DL 63 48
MSPSD TL 07 46
MSPSD TL 20 46
MSPSD TL 50 46
MSPSD TL 63 46
MSPX 042 43
MSPX 080 43
MSPX 128 44
MSPX 12x12 43
MSPX 1x1 42
MSPX 1x16 42
MSPX 1x5 42
MSPX 256 x 256-1 45
MSPX 256 x 256-2 45
MSPX 3 x 3-2 42
MSPX 3 x 3-3 42
MSPX 3x3 43
MSPX 4x4 ..... 42, 43
MSPX 80 x 335 45
MSPX 96x128 45
MSPX063 44
MSQ25 25
MSX D4 16
MSX D56 17
MSX H3 17
MSX002 14
MSX002-2 14
MSX011 14
MSX02 16
MSX03 ..... 14, 15
MSX031 14
MSX0311 15
MSX04 15
MSX048 14
MSX051 14
MSX060 17
MSX062 17
MSX064 14
MSX07 16
MSX07-2 16
MSX09 15
MSX10 14
MSX100 16
MSX100-1 15
MSX150 17
MSX160 17
MSX25 15
MSX28x8 17
MSX35 18
MSX40 15
MSX7200 18
MSX900 17
MSX90x5 16
MSX91 16
OOO 39
OOO2 39
QQQ1 11
QQQ2 30
QQQ3 30
QQQ5 30
QQQ6 30
RRR-1 24
RRR-10 12
RRR-11 12
RRR-12 12
RRR-13 12

RRR-14 12
RRR-15 13
RRR-16 13
RRR-17 13
RRR-2 24
RRR-25 13
RRR-26 13
RRR-3 24
RRR-4 24
RRR-5 24
RRR-6 25
RRR-7 25
RRR-8 25
RRR-9 25
S1(DS) 28
S1_1500(DS) 28
S10(DS) 29
S12(DS) 29
S13(DS) 29
S14(DS) 29
S2(DS) 28
S2_1500(DS) 28
S3(DS) 28
S3(SS) 28
S4 28
S5(DS) 28
S7(DS) 28
S9(DS) 28
Super X3 49
T 46
T-2 46
TT 47
TTT1 40
TTT10 36
TTT11 36
TTT12 32
TTT15 39
TTT17 32
TTT2 37
TTT3 37
TTT4 37
TTT5 37
TTT6 36
TTT9 36
UUU1 39
UUU2 39
W1 ..... 32, 35
W1 PARA 35
W2 35
W4 32
W5 34
W6 35
W7 34
X1 47
X2 47
X3 47
X4 47
X5 49
X6 49
XXX3 26
XXX4 26
XXX5 26
YY1 23
ZZZ 31

Micron Semiconductor Limited



WWW.MICRONSEMICONDUCTOR.CO.UK

Worldwide Contacts

Head Office:

Micron Semiconductor Ltd
1 Royal Buildings
85 Marlborough Rd
Lancing
West Sussex
BN15 8SJ, UK

Telephone: +44 (0)1903 755 252
Sales: Amanda G Perini-Boothby
sales@micronsemiconductor.co.uk

Production: Stephen D Wilburn
netsales@micronsemiconductor.co.uk

Design: Susanne Walsh
design@micronsemiconductor.co.uk

Micron Semiconductor Kazakhstan

Sales: Martuk Brothers
info@martuk.kz

Australasia Direct Sales:

Micron Semiconductor Ltd
/, Prodigitek Scientific Instruments
100 Station Rd
Seven Hills
NSW
2745, Australia

Telephone: +614 1700 5523
Contact: Patrick Johnson
Sales@prodigitek.com

Chinese Direct Sales:

Micron Semiconductor Ltd
/, Beijing Wahenyida
Science and Technology Development Co, Ltd.
Rm 1015, Tower D, Wanda Plaza Yi No 18,
Shijingshan Rd, Shijingshan Dst
P.R.C (CHINA)

Telephone: +86 10 88256670
Fax: +86 10 882570
Contact: Jessica Dong
jessicadong@wahenyida.com

Japanese Direct Sales:

Micron Semiconductor Ltd
/, Clear Pulse Co. Ltd
25-17, Chuo 6-chome,
Ota-ku, Tokyo, 143-0024
Japan

Telephone: +81-3-3755-0045
Fax: +81-3-3755-7877
Contact: Akinori Yamaguchi
yamaguchi@clearpulse.co.jp

Korean Direct Sales:

Sales: TaeUK Kang
kangtaeuk@gmail.com

Romanian Direct Sales:

Micron Semiconductor Ltd
/, Specsys Solutions SRL
10-12 Amidonului St
1st Floor, Apt 3, Sector 2
Bucharest
Romania

Sales: Slavița Șopoi
slavita@specsys.ro

MS025-03-1