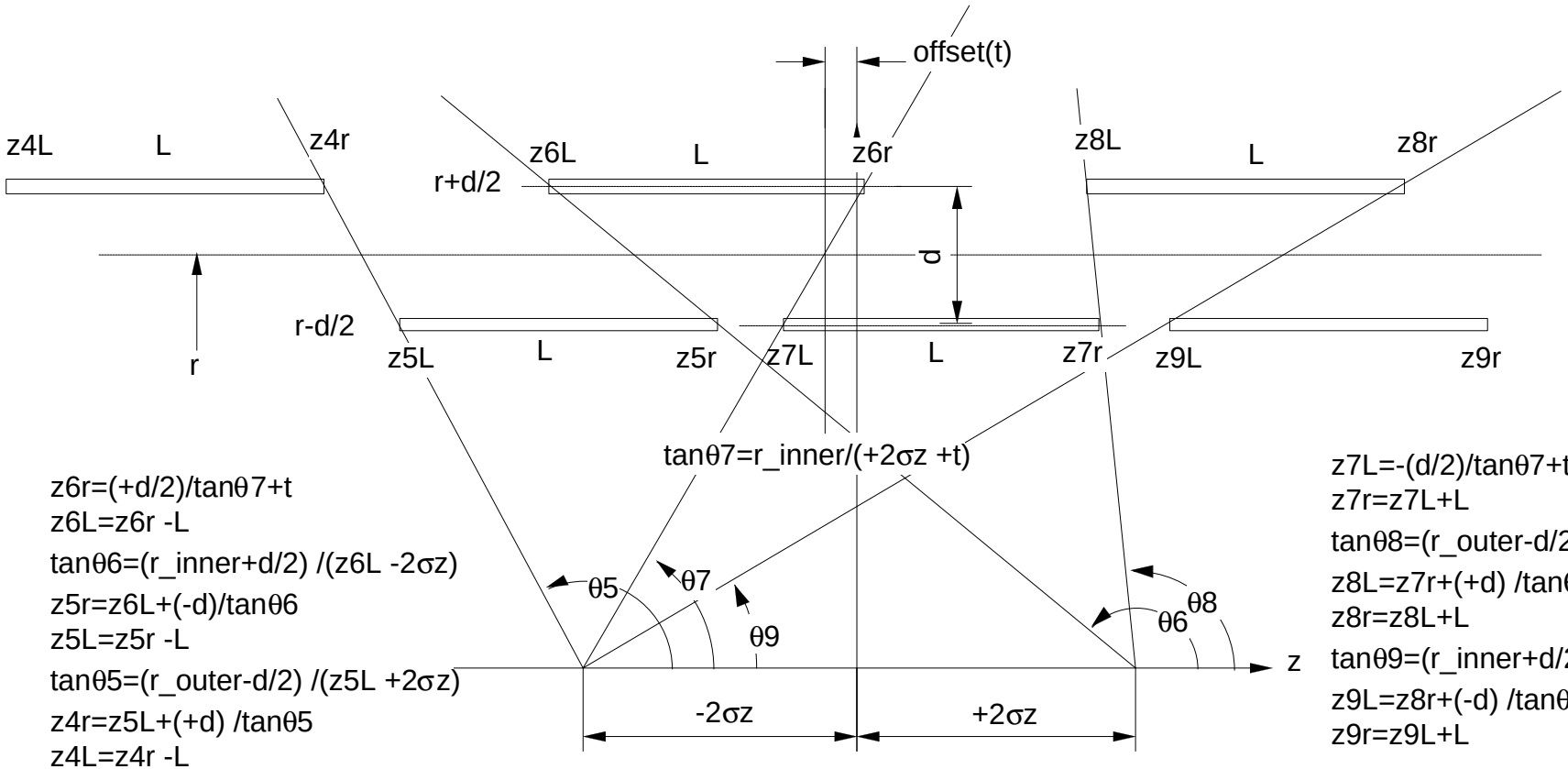
PROJECTION

ISSUE DATE 00/10/12




z6r=(+d/2)/tanθ7+t
z6L=z6r -L
tanθ6=(r_inner+d/2) /(z6L -2σz)
z5r=z6L+(-d)/tanθ6
z5L=z5r -L
tanθ5=(r_outer-d/2) /(z5L +2σz)
z4r=z5L+(+d) /tanθ5
z4L=z4r -L
...

z7L=-(d/2)/tanθ7+t
z7r=z7L+L
tanθ8=(r_outer-d/2) /(z7r -2σz)
z8L=z7r+(+d) /tanθ8
z8r=z8L+L
tanθ9=(r_inner+d/2) /(z8r +2σz)
z9L=z8r+(-d) /tanθ9
z9r=z9L+L
...

| ITEM NO. | TITLE | MATERIAL | QUANTITY | REMARKS |
|---|---|---|---|---|
| DESIGNED | Y. Unno | SCALE | TITLE | z spacing |
| DRAWN | | PAPER SIZE | DRAWING NO. | |
| CHECKED | | A4 | | BC001112-1428A |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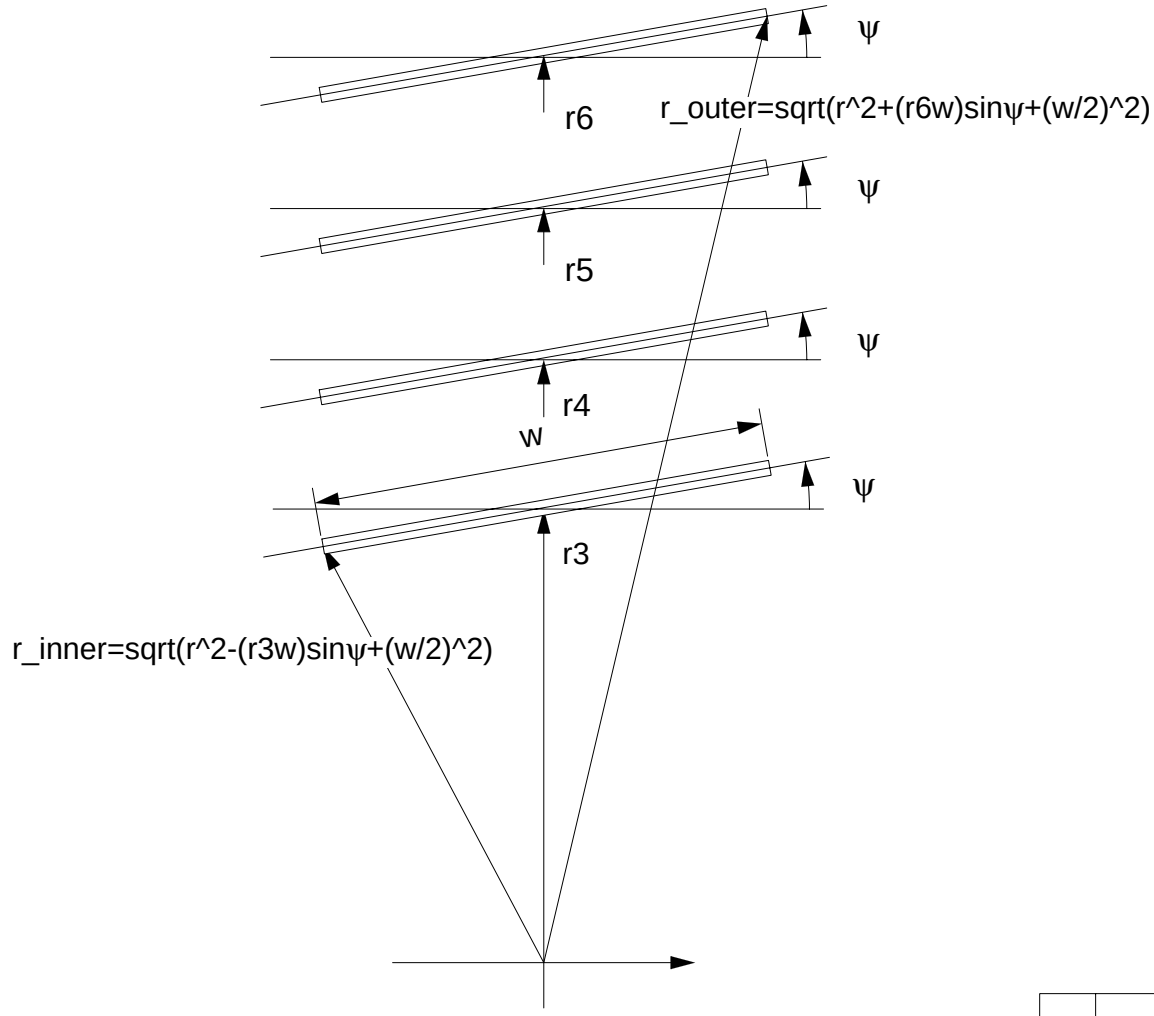
PROJECTION

ISSUE DATE 00/11/12




| ITEM NO. | TITLE | MATERIAL | QUANTITY | REMARKS |
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| DESIGNED: Y. Unno | SCALE: / | TITLE: z spacing - tilt | |
| DRAWN: | PAPER SIZE: A4 | DRAWING NO.: BC001112-1800A | |
| CHECKED: | | | |


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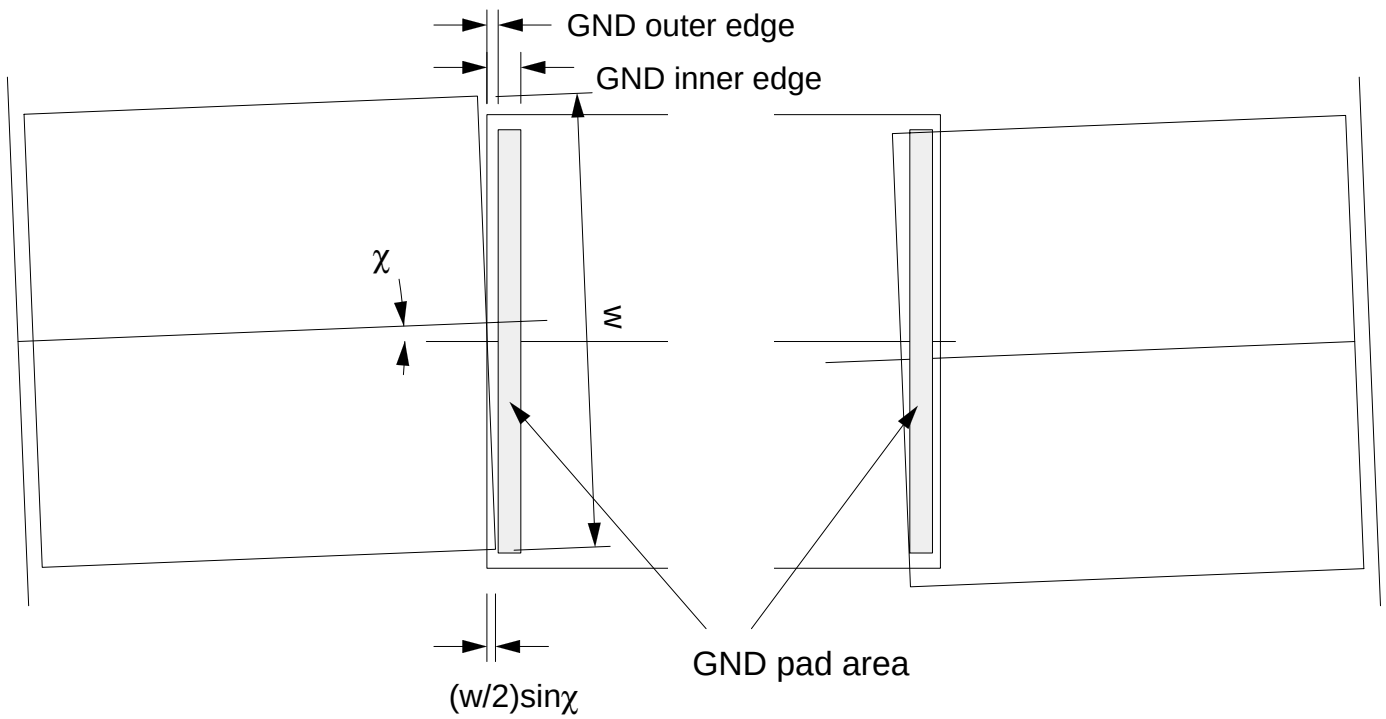
ISSUE DATE 00/11/12




| ITEM NO. | TITLE | MATERIAL | QUANTITY | REMARKS |
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|---|---|---|---|
| DESIGNED Y. Unno | SCALE / | TITLE z spacing - stereo | |
| DRAWN | | | |
| CHECKED | PAPER SIZE A4 | DRAWING NO. BC001112-1700A | |


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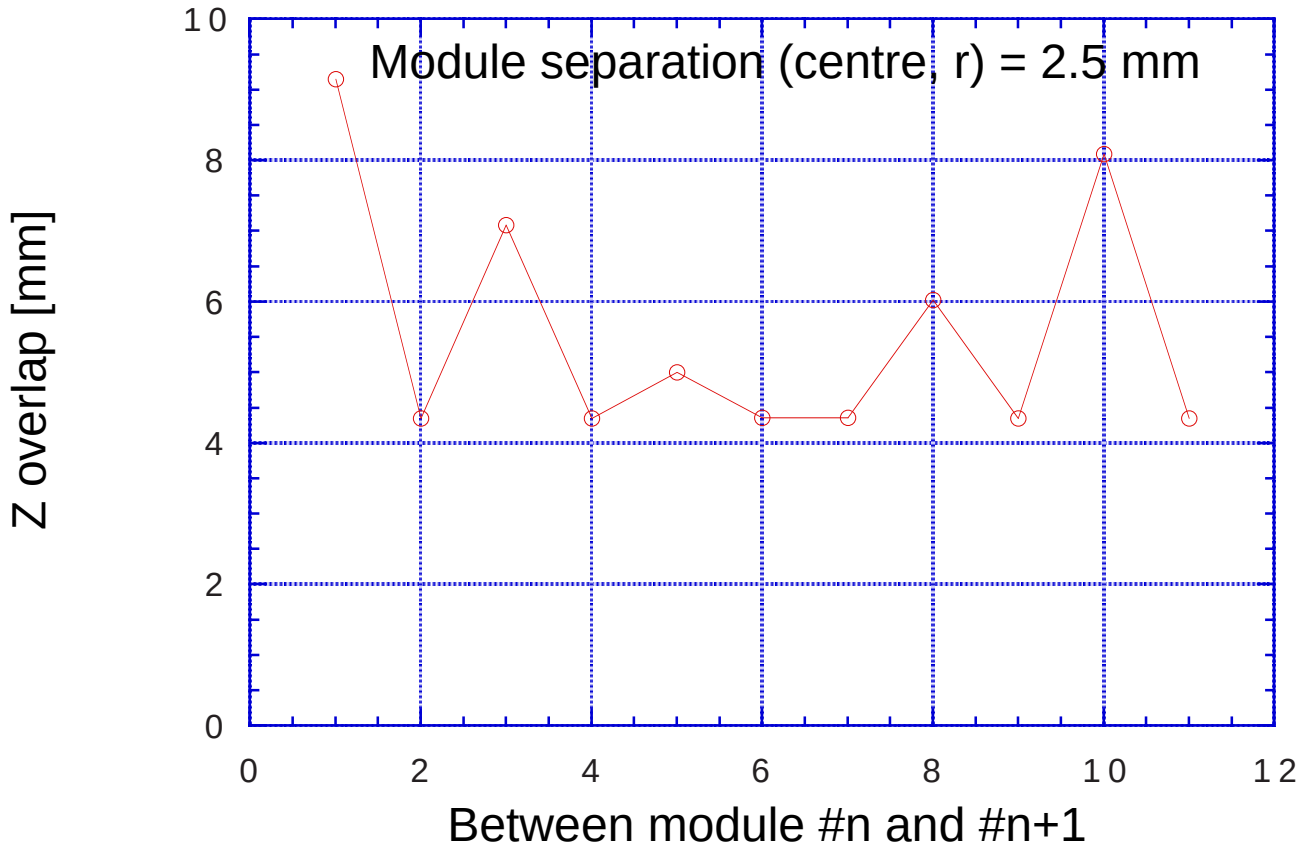
z-spacing calculation
(cf. z-overlap figure (MiniCad) for "non-overlap" region spacing)

| | | |
|---|---|---|
| Vertex s_z | 56 | mm |

| Sensor: | | | Module: | | | | | |
|---|---|---|---|---|---|---|---|---|
| Full length | 64 | mm | Centre gap | 0.09 | mm | | | |
| Strip-edge | -1 | mm | Full length | 128.09 | mm | | | |
| GND outer edge | -1.515 | | Strip overlap | 0.5 | mm | | | |
| GND inner edge | -3.075 | | Non-overlap length | 125.09 | mm | | | |
| Cut-edge width | 63.6 | mm | Stereo angle | 0.04 | rad | | | |
| Strips width | 61.44 | mm | Cut-edge stereo half-width | 1.2716608 | mm | | | |
| | | | End stay-clear outer | 0.2433392 | mm | | | |
| | | | End stay-clear inner | 4.3466608 | mm | | | |
| | | | | | | | | Mean radius [mm] |
| Centre separation | 2.5 | mm | | | | | B3 | 299 |
| Offset | -1.5 | mm | | | | | B4 | 371 |
| Radius inner | 299 | mm | Tilt | 10 | deg | | B5 | 443 |
| Radius outer | 514 | mm | | | | | B6 | 514 |
| r_inner | 295.21976 | mm | | | | | | |
| r_outer | 520.21491 | mm | | | | | | |

| | angle(left-ed | up(+1) | HV-GND | non-overlap | | module | | | |
|---|---|---|---|---|---|---|---|---|---|
| Module# | tan(theta_n) | down(-1) | offset | z_left [mm] | z_right [mm | z_centre [mn | z_left [mm] | z_right [mm | z-overlap |
| 1 | -0.4707916 | -1 | 0 | -736.416 | -611.326 | -673.871 | -737.916 | -609.826 | 9.151 |
| 2 | -0.406414 | 1 | 3.19 | -617.477 | -492.387 | -554.932 | -618.977 | -490.887 | 4.351 |
| 3 | -1.3594782 | -1 | 0 | -493.738 | -368.648 | -431.193 | -495.238 | -367.148 | 7.088 |
| 4 | -0.6116109 | 1 | 2.01 | -372.736 | -247.646 | -310.191 | -374.236 | -246.146 | 4.350 |
| 5 | -3.7881779 | -1 | 0 | -248.996 | -123.906 | -186.451 | -250.496 | -122.406 | 5.006 |
| 6 | -1.2461313 | 1 | 0.21 | -125.912 | -0.822 | -63.367 | -127.412 | 0.678 | 4.356 |
| 7 | 2.671672 | -1 | -0.21 | -2.178 | 122.912 | 60.367 | -3.678 | 124.412 | 4.357 |
| 8 | 47.558543 | 1 | -1.41 | 121.555 | 246.645 | 184.100 | 120.055 | 248.145 | 6.024 |
| 9 | 0.8266392 | -1 | 0 | 243.620 | 368.710 | 306.165 | 242.120 | 370.210 | 4.353 |
| 10 | 2.0215968 | 1 | -2.59 | 367.357 | 492.447 | 429.902 | 365.857 | 493.947 | 8.097 |
| 11 | 0.4904809 | -1 | 0 | 487.350 | 612.440 | 549.895 | 485.850 | 613.940 | 4.349 |
| 12 | 1.0370172 | 1 | -3.76 | 611.091 | 736.181 | 673.636 | 609.591 | 737.681 | |

| | | |
|---|---|---|
| Barrel length (Axial module egdge-edge) | 1475.597 | mm |


Module separation (centre, r) = 2.5 mm
Z overlap [mm]
Between module #n and #n+1
0
2
4
6
8
10
12

z-spacing calculation
(cf. z-overlap figure (MiniCad) for "non-overlap" region spacing)

| | | |
|---|---|---|
| Vertex s_z | 56 | mm |

| Sensor: | | | Module: | | | | | |
|---|---|---|---|---|---|---|---|---|
| Full length | 64 | mm | Centre gap | 0.09 | mm | | | |
| Strip-edge | -1 | mm | Full length | 128.09 | mm | | | |
| GND outer edge | -1.515 | | Strip overlap | 0.5 | mm | | | |
| GND inner edge | -3.075 | | Non-overlap length | 125.09 | mm | | | |
| Cut-edge width | 63.6 | mm | Stereo angle | 0.04 | rad | | | |
| Strips width | 61.44 | mm | Cut-edge stereo half-width | 1.2716608 | mm | | | |
| | | | End stay-clear outer | 0.2433392 | mm | | | |
| | | | End stay-clear inner | 4.3466608 | mm | | | |
| | | | | | | | | Mean radius [mm] |
| Centre separation | 2.8 | mm | | | | | B3 | 299 |
| Offset | -1.5 | mm | | | | | B4 | 371 |
| Radius inner | 299 | mm | Tilt | 10 | deg | | B5 | 443 |
| Radius outer | 514 | mm | | | | | B6 | 514 |
| r_inner | 295.21976 | mm | | | | | | |
| r_outer | 520.21491 | mm | | | | | | |

| | angle(left-ed | up(+1) | HV-GND | non-overlap | | module | | | |
|---|---|---|---|---|---|---|---|---|---|
| Module# | tan(theta_n) | down(-1) | offset | z_left [mm] | z_right [mm | z_centre [mn | z_left [mm] | z_right [mm | z-overlap |
| 1 | -0.4716497 | -1 | 0 | -734.962 | -609.872 | -672.417 | -736.462 | -608.372 | 9.879 |
| 2 | -0.4070248 | 1 | 3.41 | -616.751 | -491.661 | -554.206 | -618.251 | -490.161 | 4.354 |
| 3 | -1.3616664 | -1 | 0 | -493.015 | -367.925 | -430.470 | -494.515 | -366.425 | 7.574 |
| 4 | -0.6122205 | 1 | 2.09 | -372.498 | -247.408 | -309.953 | -373.998 | -245.908 | 4.352 |
| 5 | -3.7936123 | -1 | 0 | -248.760 | -123.670 | -186.215 | -250.260 | -122.170 | 5.246 |
| 6 | -1.2467416 | 1 | 0.15 | -125.916 | -0.826 | -63.371 | -127.416 | 0.674 | 4.348 |
| 7 | 2.671672 | -1 | -0.15 | -2.174 | 122.916 | 60.371 | -3.674 | 124.416 | 4.351 |
| 8 | 47.528004 | 1 | -1.41 | 121.565 | 246.655 | 184.110 | 120.065 | 248.155 | 6.386 |
| 9 | 0.8270339 | -1 | 0 | 243.269 | 368.359 | 305.814 | 241.769 | 369.859 | 4.356 |
| 10 | 2.0237803 | 1 | -2.74 | 367.003 | 492.093 | 429.548 | 365.503 | 493.593 | 8.702 |
| 11 | 0.4910168 | -1 | 0 | 486.390 | 611.480 | 548.935 | 484.890 | 612.980 | 4.354 |
| 12 | 1.0387093 | 1 | -4.05 | 610.126 | 735.216 | 672.671 | 608.626 | 736.716 | |

| | | |
|---|---|---|
| Barrel length (Axial module egdge-edge) | 1473.178 | mm |