**Main Application:** Particle identification, telescopes of detectors, any type of \( \Delta E \) measurements. In addition to \( \Delta E/\Delta x \) experiments, the uniformly high field of B Series detectors makes them the best choice for rise-time discrimination or for precision timing experiments. These detectors are also useful in any experiment where an A Series detector is used; B Series detectors are preferable if radiation damage is likely.

**Supplied with T Mount unless otherwise specified.**

### B Series

**Totally Depleted Silicon Surface Barrier Detectors**

- All standard totally depleted detectors are cut off-axis from the parent crystal at a specific angle that will minimize ion channeling. Supplied in T Mount unless specified otherwise by appropriate letter prefix. Other areas and depths available on special order.

- First three digits of Model No. indicate total system resolution FWHM for \(^{241}\)Am, 5.486-MeV alphas, using standard ORTEC electronics and 0.5-\( \mu \)s shaping time constants. Beta resolution approximated by pulser width FWHM.

- Requires special order.

<table>
<thead>
<tr>
<th>Active Area (mm(^2))</th>
<th>Guaranteed Maximum Resolution (keV)**</th>
<th>Depletion Depth 150 ( \mu )m</th>
<th>Depletion Depth 200 ( \mu )m</th>
<th>Depletion Depth 250 ( \mu )m</th>
<th>Depletion Depth 300 ( \mu )m</th>
<th>Depletion Depth 400 ( \mu )m</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>150 ( \mu )m</td>
<td>125–175 ( \mu )m</td>
<td>176–225 ( \mu )m</td>
<td>226–275 ( \mu )m</td>
<td>276–325 ( \mu )m</td>
<td>326–375 ( \mu )m</td>
<td>B-015-050-150</td>
<td>B-015-050-200</td>
<td>B-015-050-250</td>
<td>B-015-050-300</td>
<td>B-015-050-400</td>
</tr>
<tr>
<td>150</td>
<td>176 ( \mu )m</td>
<td>165–215 ( \mu )m</td>
<td>216–265 ( \mu )m</td>
<td>266–315 ( \mu )m</td>
<td>316–365 ( \mu )m</td>
<td>366–415 ( \mu )m</td>
<td>B-016-050-150</td>
<td>B-016-050-200</td>
<td>B-016-050-250</td>
<td>B-016-050-300</td>
<td>B-016-050-400</td>
</tr>
<tr>
<td>300</td>
<td>226 ( \mu )m</td>
<td>215–265 ( \mu )m</td>
<td>266–315 ( \mu )m</td>
<td>316–365 ( \mu )m</td>
<td>366–415 ( \mu )m</td>
<td>416–465 ( \mu )m</td>
<td>B-017-050-150</td>
<td>B-017-050-200</td>
<td>B-017-050-250</td>
<td>B-017-050-300</td>
<td>B-017-050-400</td>
</tr>
<tr>
<td>450</td>
<td>276 ( \mu )m</td>
<td>265–315 ( \mu )m</td>
<td>316–365 ( \mu )m</td>
<td>366–415 ( \mu )m</td>
<td>416–465 ( \mu )m</td>
<td>466–515 ( \mu )m</td>
<td>B-018-050-150</td>
<td>B-018-050-200</td>
<td>B-018-050-250</td>
<td>B-018-050-300</td>
<td>B-018-050-400</td>
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</table>

<table>
<thead>
<tr>
<th>Active Area (mm(^2))</th>
<th>Guaranteed Maximum Resolution (keV)**</th>
<th>Depletion Depth 500 ( \mu )m</th>
<th>Depletion Depth 700 ( \mu )m</th>
<th>Depletion Depth 1000 ( \mu )m</th>
<th>Depletion Depth 1500 ( \mu )m</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>500 ( \mu )m</td>
<td>451–500 ( \mu )m</td>
<td>501–550 ( \mu )m</td>
<td>551–600 ( \mu )m</td>
<td>601–650 ( \mu )m</td>
<td>B-015-050-500</td>
<td>B-015-050-700</td>
<td>B-015-050-1000</td>
<td>B-015-050-1500</td>
<td>B-015-050-2000</td>
</tr>
<tr>
<td>150</td>
<td>700 ( \mu )m</td>
<td>601–650 ( \mu )m</td>
<td>651–700 ( \mu )m</td>
<td>701–750 ( \mu )m</td>
<td>751–800 ( \mu )m</td>
<td>B-016-050-500</td>
<td>B-016-050-700</td>
<td>B-016-050-1000</td>
<td>B-016-050-1500</td>
<td>B-016-050-2000</td>
</tr>
<tr>
<td>300</td>
<td>1000 ( \mu )m</td>
<td>951–1000 ( \mu )m</td>
<td>1051–1100 ( \mu )m</td>
<td>1151–1200 ( \mu )m</td>
<td>1251–1300 ( \mu )m</td>
<td>B-017-050-500</td>
<td>B-017-050-700</td>
<td>B-017-050-1000</td>
<td>B-017-050-1500</td>
<td>B-017-050-2000</td>
</tr>
<tr>
<td>450</td>
<td>1500 ( \mu )m</td>
<td>1451–1500 ( \mu )m</td>
<td>1551–1600 ( \mu )m</td>
<td>1651–1700 ( \mu )m</td>
<td>1751–1800 ( \mu )m</td>
<td>B-018-050-500</td>
<td>B-018-050-700</td>
<td>B-018-050-1000</td>
<td>B-018-050-1500</td>
<td>B-018-050-2000</td>
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<table>
<thead>
<tr>
<th>Active Area (mm(^2))</th>
<th>Guaranteed Maximum Resolution (keV)**</th>
<th>Depletion Depth 2000 ( \mu )m</th>
<th>Model No.</th>
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<tbody>
<tr>
<td>50</td>
<td>1950–2050 ( \mu )m</td>
<td>B-018-050-2000</td>
<td>18-13</td>
</tr>
<tr>
<td>150</td>
<td>2000–2100 ( \mu )m</td>
<td>B-020-150-2000</td>
<td>20-15</td>
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<tr>
<td>300</td>
<td>2050–2150 ( \mu )m</td>
<td>B-023-300-2000</td>
<td>23-18</td>
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<tr>
<td>450</td>
<td>2100–2200 ( \mu )m</td>
<td>B-026-450-2000</td>
<td>26-21</td>
</tr>
</tbody>
</table>

* All standard totally depleted detectors are cut off-axis from the parent crystal at a specific angle that will minimize ion channeling. Supplied in T Mount unless specified otherwise by appropriate letter prefix. Other areas and depths available on special order.

** First three digits of Model No. indicate total system resolution FWHM for \(^{241}\)Am, 5.486-MeV alphas, using standard ORTEC electronics and 0.5-\( \mu \)s shaping time constants. Beta resolution approximated by pulser width FWHM.

§ Requires special order.
Mounting Arrangements

A This is a "ring mount"; i.e., the silicon wafer is offered on its ring without output connectors. This infrequently used arrangement is available on special request.

T Microdot on the side of the can; without adjustable screws. (Open back.)

Dimensions are given in millimeters.

§ Built into a Microdot connector only.

For detectors 1500 or 2000 µm deep, add 1.5 mm to the Y dimension.

<table>
<thead>
<tr>
<th>Detector Size (mm²)</th>
<th>W (Nominal)</th>
<th>X</th>
<th>Y</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
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<tbody>
<tr>
<td>050</td>
<td>8.0</td>
<td>15.2</td>
<td>3.7</td>
<td>19.4</td>
<td>7.9</td>
<td>9.9</td>
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<tr>
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<td>13.8</td>
<td>22.0</td>
<td>3.7</td>
<td>26.1</td>
<td>7.9</td>
<td>9.9</td>
</tr>
<tr>
<td>300</td>
<td>19.5</td>
<td>27.1</td>
<td>3.7</td>
<td>31.6</td>
<td>7.9</td>
<td>9.9</td>
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<tr>
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<td>3.7</td>
<td>34.8</td>
<td>7.9</td>
<td>9.9</td>
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<tr>
<td>Tol.</td>
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<td>±0.3</td>
<td>±0.3</td>
<td>±0.3</td>
<td>±0.3</td>
<td>±0.3</td>
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