

Probe Card Edge Sensors

PROBE CARD EDGE SENSORS

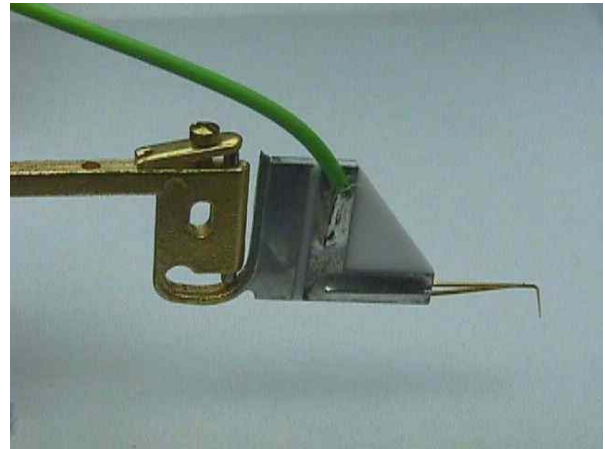
Edge sensors are multi-purpose probes that were originally used to trigger the step and repeat operation of a prober. They are also used to control prober Z travel where automatic sensing of probe to device under test position is not feasible. Edge Sensors are available with standard probe tips for normal electrical contact or they can be supplied with an isolated contact.

An edge sensor is typically a normally closed, single pole, single throw switch that is built into the probe card as an integral part of the probe array. Edge sensors can be applied in a number of ways depending on the needs of your test application. Accuprobe can supply edge sensors based on z-adjustable or blade probes.

EDGE SENSOR OPERATION

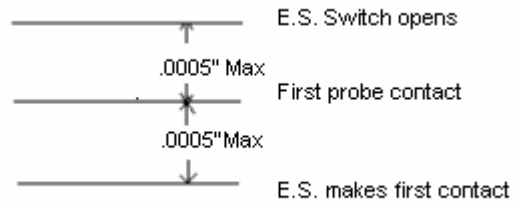
The edge sensors can be selected to operate in standard or isolated mode. The isolated configuration utilizes a sapphire bead to provide electrical isolation from the circuit under test. Other configurations are also possible to satisfy unique test requirements. All edge sensor probes and switch components are gold plated for best performance and reliability.

The standard and isolated edge sensor configurations are by far the most widely used configuration in the industry. The edge sensor probe is typically placed along a scribe line or in an inactive area of the circuit. When placement of a standard edge sensor becomes difficult due to high probe density or other active circuit limitations, an isolated edge sensor can be used. An isolated edge sensor provides placement flexibility since the jewel isolation bead distributes the contact force over a large "footprint"



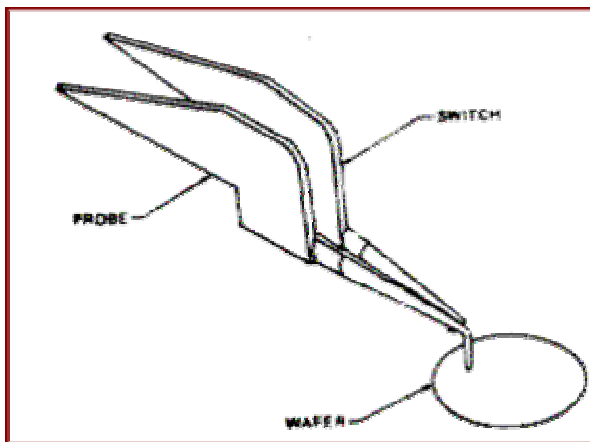
Z-Adjustable Edge Sensor

and can be placed in an active circuit area. A typical edge sensor contacts within 0.0005" before first probe contact and opens within 0.0005" after first contact. (+/- .0002"). Accuprobe can also set the edge sensor adjustment to meet specific customer requirements.

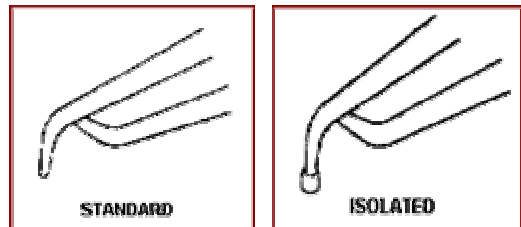


MULTIPLE EDGE SENSORS

In many applications multiple edge sensors can reduce test time and/or save probes from potential damage. A single edge sensor placed anywhere



Blade Probe Edge Sensor



Probing the World
of Microelectronics

Probe Card Edge Sensors

on the device could cause some of the probes to hang off the edge of a wafer or substrate. Multiple edge sensors are wired in series such that any one edge sensor switch opening will signal the prober. Multiple edge sensors wired in such a fashion will eliminate a partial touchdown, speed the indexing in X or Y-axis and/or control overdrive on irregular device surfaces.

ORDERING INFORMATION

Select edge sensor type and operation from the charts below. Custom configurations as well as non-standard operational characteristics can also be supported

Z-Adjustable Edge Sensor Selection Guide

| E | Type | 1 | | S | Tip Type | 1 | | |
|---|-------------|--------|-------|-------------------|----------|------------------|---|-----------------|
| | | Holder | "L2" | | | Switch Depth "D" | | |
| E | Edge Sensor | 1 | Short | .430"(10.922mm) | S | Standard | 1 | .317" (8.052mm) |
| | | 2 | Long | 1.720" (43.688mm) | E | Isolated | 2 | .324" (8.230mm) |
| | | | | | | | 3 | .339" (8.611mm) |
| | | | | | | | 4 | .369" (9.373mm) |

Notes:

- 1 BeCu not available in .0005" tip.
- 2 Not all combinations of tip material, Tip Drop "B", and tip diameter "A", are possible.

Blade Probe Edge Sensor Selection Guide

| Edge Sensor Type | Profile | Length | Type | Switch Direction | | | Tip Drop "B" | | |
|------------------|---------------|--------------------|------|------------------|----------|---|--------------|---|-----------------|
| EB | Metal blade | A | S | S | Standard | 1 | Right | A | .008" (.2032mm) |
| | | B | M | E | Isolated | 2 | Left | B | .015" (.381mm) |
| | | C | L | | | | | C | .030" (.762mm) |
| | | D | | | | | | D | .060" (1.524mm) |
| | | E | | | | | | | |
| | | F | | | | | | | |
| | | G | | | | | | | |
| EC | Ceramic blade | Ceramic types only | | | | | | | |
| | | 1 | | | | | | | |
| | | 2 | | | | | | | |
| | | 3 | | | | | | | |
| | | Z1 | | | | | | | |
| | | Z2 | | | | | | | |

BITA ELEKTRONIK SVENSKA AB
 POB 3434
 SE-10368 STOCKHOLM, Sweden
 Ph. +46 (8) 319000
 Fx. +46 (8) 326064
 info@bita.se - www.bita.se

