

# QUESTECH

## Diamond Sawing

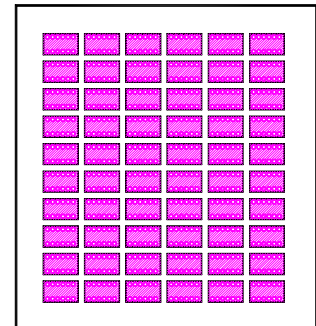
### Applications

#### General

- Optical alignment and diamond sawing of most hard and brittle materials
- Odd waste strip (alley) circuit stepping
- Mixed circuit types on a plate
- Economical prototype and volume production quantities
- Combined with laser cutting to produce intricate contours

#### Types

- Microwave Hybrid Circuit Substrates
  - Thin Film
- Conventional Hybrid Circuit Substrates
  - Thick Film
  - Direct Bond Copper
- Ceramic Microcircuit Package Components
  - Co-fired
  - Thick Film



#### Typical Hybrid Application Uses

- Optically align and cut through via castellations to form circuit or package edge
- Optically align to thin or thick film metalization patterns to accurately define substrate edge
- Precision edged finished circuit blanks
- Precision heat spreaders and mount tabs

#### Materials

- |                  |                       |          |
|------------------|-----------------------|----------|
| Alumina Ceramic  | Crystalline Materials | Ferrites |
| 92%              | Quartz                | Glass    |
| 96%              | Sapphire              |          |
| 99%              | Silicon               |          |
| Beryllia Ceramic | Gallium Arsenide      |          |
| Aluminum Nitride | Fused Silica          |          |

#### Design Guidelines

Property	Nominal	Units
Cut Location to Pattern*	+/- .002	Inches
Cut Size*	+/- .002	Inches
Chip Outs*	.003 Max.	Inches
Cleanliness	No Visible Surface Contamination	at 10X
Substrate Size	6 Diameter / 5 x 5 Max.	Inches
Packaging	Chip Carriers or Custom	n/a

\* Tolerances are dependent upon materials and cut configurations.

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