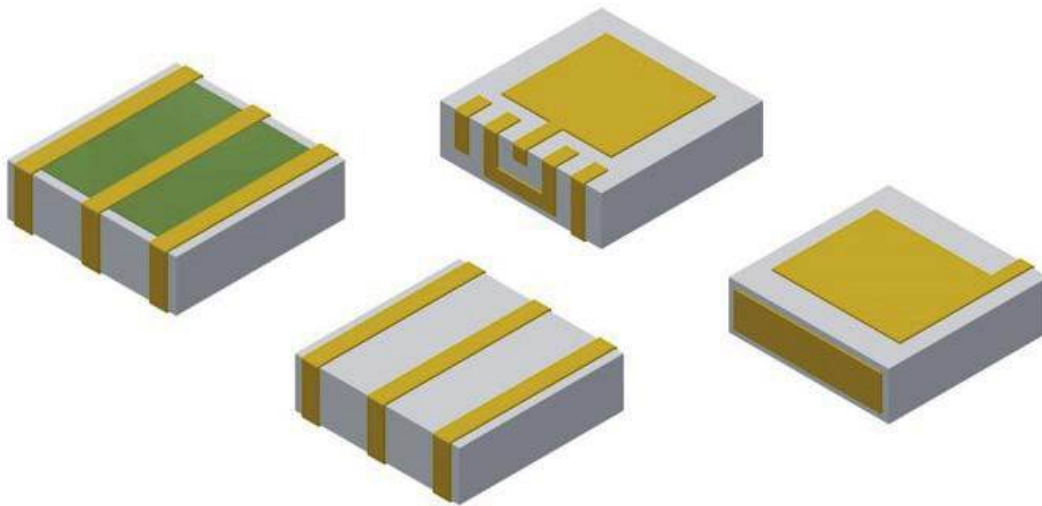


Side Wall Patterning - Custom Substrate



CAPABILITIES

- Conductor patterning on 4 surfaces
- Wire-bondable or solderable metalizations
- Allows attachment to side wall of substrate
- Tight dimensional tolerances

APPLICATIONS

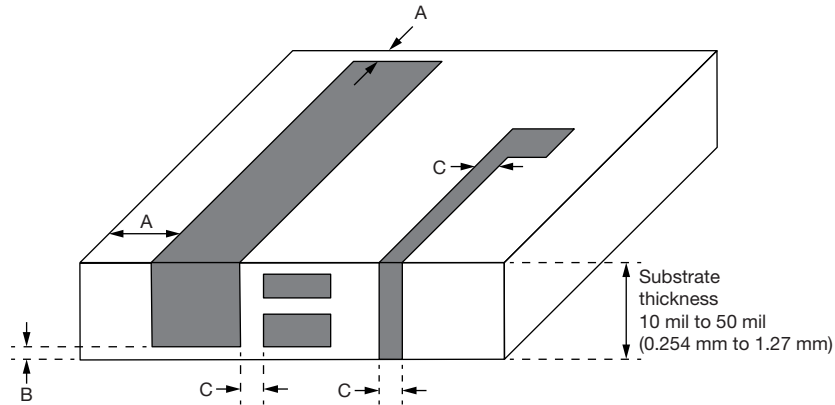
- Electro-mechanical or electro-optical applications that require an interface between the electric circuit and an element such as a mirror, lens, fiber, etc.
- High frequency circuits such as RF application, and high bit rate transceivers (TOSA / ROSA) that benefit by replacing wire bonds with side-patterned traces
- Applications that require a high degree of miniaturization

DESIGN SPECIFICATIONS AND RULES

- Substrate materials: alumina or AlN. Sidewall patterning can be deposited on plates ranging between 10 mils and 50 mils. Polished plates are preferred due to their tighter thickness tolerance.
- Metalization: TiW / Au, TiW / Ni / Au or TiW / Pd / Au as well as resistor and AuSn metalization available.
- Lines and gaps: lines and gaps down to 0.003" (75 microns) can be patterned on the component sidewalls.
- Pullback from bottom edge: traces designed to reach the bottom edge of the sidewall will require a ± 2 mil tolerance. Positive tolerance represents a gap from the bottom edge; negative tolerance represents metal wrapping around edge to the rear surface.
- Geometric tolerances down to ± 1 mil ($\pm 25 \mu\text{m}$) can be maintained on sidewall geometries. Tolerances between metal on diced edges of the ceramic tile down to ± 2 mil.
- Connectivity: side wall patterns can be isolated (standalone), connected to front side only (half wrap) or connected to both front and rear sides (full wrap).
- Component with sidewall patterning can have integrated resistors or AuSn solder pads embedded on the front or rear surfaces. These capabilities are not allowed on the sidewall itself.

| DESIGN SPECIFICATIONS | |
|---------------------------------------|--|
| Plate Thickness | 0.010" to 0.050" |
| Minimum Gap | 0.003" |
| Dimensional Tolerance | ± 0.001 " |
| Metal Pattern to Diced Edge Tolerance | ≥ 0.002 " |
| Metal Systems | TiW / Au / Au plate or TiW / Pd / Au |
| | TiW / Au / Ni plate / Au plate |
| | TaN / TiW / Au or NiCr / TiW / Au |
| | 80 / 20 AuSn pads available, consult factory |

SIDE WALL PATTERNING DESIGN RULES



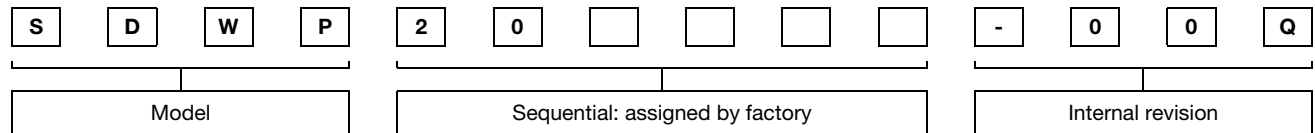
| A | B | C |
|--|--|---|
| Best alignment of metal to diced edges $\pm 0.002'' (\pm 50 \mu\text{m})$ | Metal pullback from bottom edge Typical: $0.002'' \pm 0.002'' (50 \mu\text{m} \pm 50 \mu\text{m})$ or $0'' \pm 0.002'' (0 \mu\text{m} \pm 50 \mu\text{m})$ Negative values wrap to rear side. | Line or gap $0.003'' (75 \mu\text{m})$ min. Typical tolerance: $\pm 0.002'' (\pm 50 \mu\text{m})$ Tight tolerance to $\pm 0.001'' (\pm 25 \mu\text{m})$ allowed in some cases |

CONTACT INFORMATION

For design assistance, contact: efi@vishay.com

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: SDWP20xxxx-00Q





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.