

## Microelectronics Packaging Materials Database (MPMD) マイクロエレクトロニクス実装材料データベース

Data Type: データベース  
Subject: パッケージ材料  
Publisher: CINDAS LLC  
URL: <https://cindasdata.com>

MPMDは、Semiconductor Research Corporationとのスポンサーシップによって開発されたマイクロエレクトロニクスパッケージ材料についての熱物性、機械物性、電気物性、物理物性の情報とデータのWebで利用可能なファクト・データベースです。

### 特徴

- CINDAS社の主要なDBとして提供。
- 1025材料、388物性、22500データカーブを提供
- ブラウザ (Firefox, Chrome, Safariサポート) とJavaスクリプト、Cookieのみで、参照可能
- IP認証

### 収録例:

Material Group(材料グループ): Adhesives(接着剤), Ceramics(セラミクス), Coatings and Unfilled Epoxies(塗料及び未充填エポキシ), Polymers(ポリマー), Solders(はんだ), Liquids & Gases(液体及びガス), Semiconductors (半導体) など

Material Name(材料名): Cermet, Titanium Aluminide Carbide, Ti(2)AlC, GE AISiMag 333 Alumina, Silica, SiO(2), Germanium など

Property Group(物性グループ): Mechanical, Thermophysical, Optical, Electrical など

Property Name (物性名): Compression(圧力), Bend(曲げ), Flexural(屈曲性), など

### 材料グループ:

Adhesives(接着剤), Ceramics(セラミクス: High K Oxides, Nitrides, Silicides, Carbides, Oxides, other) Coating and Unfileled Epoxies(塗料及び未充填エポキシ), Composites (合成物)(Laminate, Laminare (Glass/Epoxy), Others, Thermal Management), Compound(化合物) Molding, Elements(元素), Encapsulants and Underfill Materials(カプセルと未充填材料), Intermetallics (金属間化合物: Aluminides, Beryllides, Miscellaneous, Silicides), Liquids and Gasses(液体及びガス), Metal Alloys(金属合金), Polymers(ポリマー: others, Polyimides), Semiconductors&Optional/Sensor(半導体と光学/センサー), Solders(はんだ) Leaded/Lead-Free)等

### 内容のイメージ:

MPMD (version 12, data updated 2016.3)

Material Group: Ceramics - Nitrides, Silicides, Carbides, ...  
Material Name: Beta Silicon Carbide Film  
Property: Thermal Stress (MPa)  Change Units  Logarithmic  
Independent Variable: Temperature (K)  Change Units  Logarithmic

#### Select Materials ?

Select one or more materials from the list below. Hold the control key to select multiple materials. Available data curves will be displayed on the right. Then proceed to Step 2.

M1: Beta Silicon Carbide Film

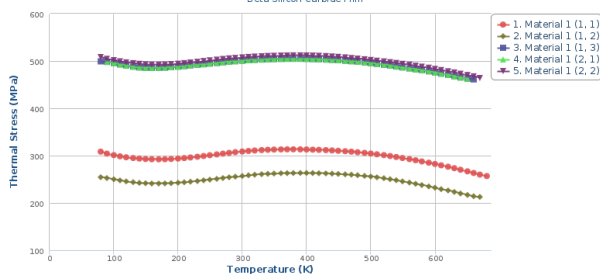
#### Select Data Curves/Test Conditions ?

Select between one and twenty data curve descriptions from the list below to view graphs. Hold the Control key to select multiple data curves.

Key: Selected Material: (Set, Curve) - Remarks

1. M1 (1, 1) - C1: Sample A
2. M1 (1, 2) - C2: Sample B
3. M1 (1, 3) - C3: Sample C

Thermal Stress vs Temperature  
Beta Silicon Carbide Film



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テキストにて数値  
の確認及びレファ  
レンス確認

(Listing 1 materials)

Material: Beta Silicon Carbide Film  
Property: Thermal Stress (MPa)  
Independent Variable: Temperature (K)

#### Preparation of Materials

Film Deposition Method :  
Beta-SiC films were deposited on Si wafers 10 cm in diameter by a chemical vapor deposition (CVD) process.

#### Additional Preparation/Conditioning

Descriptors-Numerical :  
Deposition Temperature 1650 K  
Descriptors-Textual :  
In order to create membranes for the vibration test, a central hole of 3 cm nominal diameter was etched in the back side of the Si substrate. A HF/HNO(3) etchant was used.

#### Material Description

These processes resulted in a surface roughness of less than 30 nm, and an optical transmission of 65% at a wavelength of 650 nm for the membranes.

#### Specimen Identification

Dimensions (Geometry) :  
Diameter 3.28 mm  
Film Thickness 1.6 micron

### お問合せ先



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