

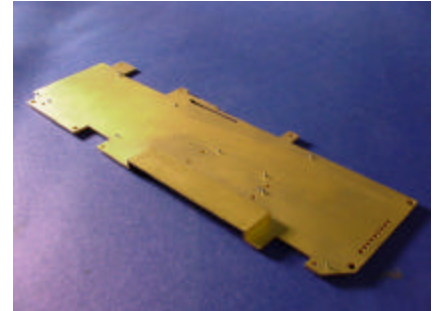


Metal Matrix Composites (AlSiC)

PCC
Advanced Forming
Technology

Core Capabilities:

- Molded Net Shapes
- Plates as thin as .010"
- Tight flatness tolerance
- Net-shape 3-D casting
- Custom material development.



Integrated Solutions:

- Molded net shapes
- In-Situ cast ceramics
- In-Situ cast metals
- In-Situ cast seal rings
- In-Situ cast feed-thrus
- Integrated heat exchanger
- Au/Sn or Au/Ge brazed connectors

Typical Design (Plates):

- Max length: 16.0"±.003"
- Max width: 9.0"±.003"
- Min. thick: .010"±.001"
- Surface Finish:
63 µin RMS (as cast)
- Tolerances on features: ±0.5% typ
- Flatness: 0.0015" per inch.
- Draft: 2° up to ¼" height

Material	AlSiC-20	AlSiC-63	AlSiC-68	AlSiC-70	AlSiC-SD
Physical Properties					
CTE (20-30 °C)	14.0	8.0	7.4	7.0	8.1
Thermal Conductivity W/m ² K	165	175	175	175	175
Electrical Resistivity (10 ⁻⁶ ohm-cm)					
Density (g/cc)	2.81	3.01	3.03	3.04	3.02
Melting Pt. (°C)	557 to 596	557 to 613	557 to 613	557 to 613	557 to 613
Mechanical Properties					
Ultimate Tensile (MPa)	449	253	207	205	249
Hardness (Rockwell B)		88	97	99	88
Young's Modulus (GPa)	110	220	223	230	246

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