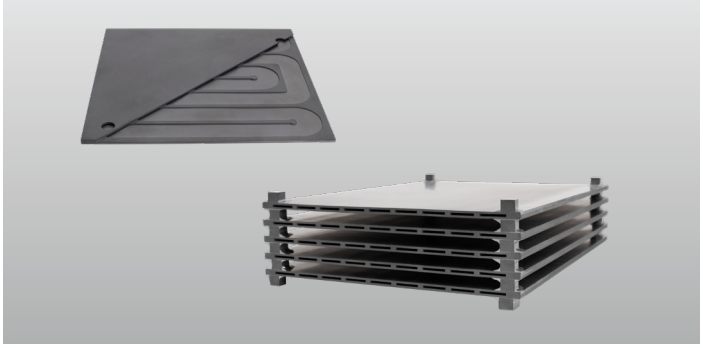
HEAT EXCHANGERS
FOR THERMAL MANAGEMENT



APPLICATIONS

- Hydrogen production process

FEATURES

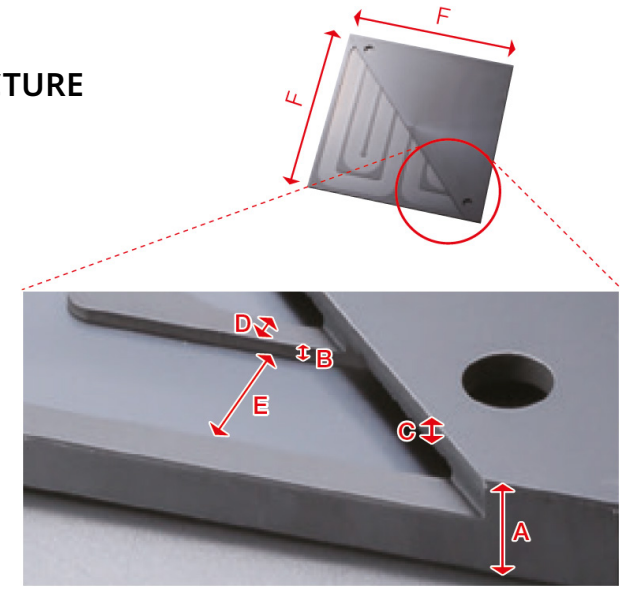
- High chemical resistance
- High temperature resistance
- High thermal conductivity

DESIGN GUIDELINE FOR FLOW CHANNEL STRUCTURE

Standard product dimensions

Unit: mm

		Minimum	Maximum
A	Product thickness	2	15
B	Channel height	0.5	10
C	Lid plate thickness	0.5	-
D	Channel wall thickness	2	-
E	Channel width	1	12
D/E	Line & space	> 0.2	
B/D	Aspect ratio	< 2.5	
F	Maximum size	600 sq.	



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Material characteristics

			Unit	A476T	A479T	SC140
Typical colour			-	White	White	Black
Content			wt%	96	99.5	-
Bulk density			-	3.7	3.9	3.1
Mechanical characteristics	Vickers hardness		GPa	13.9	16.3	23
	Flexural strength (3-point bending)		MPa	380	470	450 (4-point bending)
	Modulus of elasticity (E-modulus)		GPa	340	380	430
	Poisson's ratio		-	0.23	0.23	0.17
Thermal characteristics	Thermal conductivity		W/m*K	26	30	180
	Specific heat capacity		J/(g*K)	0.78	0.79	0.67
	Coefficient of linear thermal expansion	40-400°C	ppm/K	7	7.6	3.7
Electrical characteristics	Dielectric strength		kV/mm	15	18	-
	Volume resistivity	RT	Ω*cm	$>10^{14}$	$>10^{14}$	5.0×10^{6}
		300 °C		1.0×10^{10}	4.9×10^{10}	-
		500 °C		1.1×10^{8}	3.5×10^{8}	-
	Dielectric loss angle		1MHz	3.0×10^{-4}	1.0×10^{-4}	-
	Dielectric constant		1MHz	9.6	10.2	-

Values are typical data from test pieces. Other materials can also be considered upon request from prototyping.

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