

Semiconductor Refrigerator Assemblies of Alumina (Al₂O₃)

Features

- Small Volume
- Light Weight
- Long Life
- High Reliability
- Heating and Refrigeration

Application

- Electron Communication
- Laboratory Devices
- Medical Instruments
- Fridges for Automobiles
- Drinkers

Specifications of Alumina (Al₂O₃) Substrate

Item	Unit	Value
Alumina Content	%	96
Dielectric Constant (at 25°C, 1MHz)		9~10
Dielectric Loss Angle(at 25°C, 1MHz)	× 10 ⁻⁴	<4
Insulating Strength	kV/mm	>15
Volume Resistivity (at 25°C)	Ω cm	>10 ¹³
Thermal Expansion Coefficient (at 25~50°C)	10 ⁻⁶ /°C	6.5~7.5
Bending Strength	MPa	>2800

Dimensions & Metallized Type of Alumina (Al₂O₃) Substrate

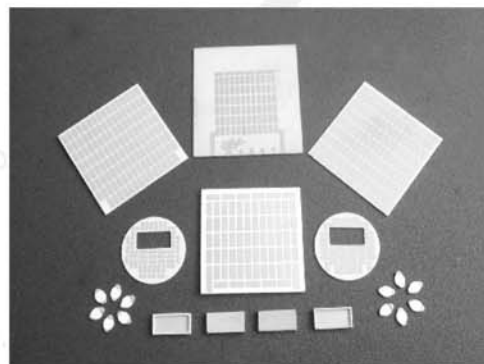
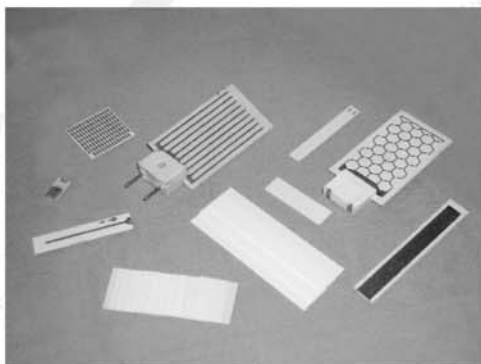
Unit: mm

Type	L×b	h	Metallized Type
ZL-01	50×50	0.80	Mo-Mn, Ni plated Mo-W, Ni plated Ag, Sn dipped DCB, Sn dipped
ZL-02	50×50	1.00	
ZL-03	40×40	0.68	
ZL-04	40×40	0.80	
ZL-05	40×40	1.00	
ZL-06	39.5×39.5	1.00	
ZL-07	39.5×39.5	0.80	
ZL-08	39.5×39.5	0.68	
ZL-09	30×30	0.68	
ZL-10	30×30	0.80	
ZL-11	29.5×29.5	0.68	
ZL-12	29.5×29.5	0.80	

Dimension, electrode figure and metallized type can be produced according to customers' requirements.

Specifications of Semiconductor Refrigerator Assemblies (Disc Type)

Type	Main Parameters				Dimensions			Weight
	I _{max} A	ΔT _{max} °C	V V	Q _{max} W	l mm	b mm	h mm	g
TEC1-01703	3.3	60	1.9	3.9	15	15	4.7	4.3
TEC1-12703	3.3	60	14.5	29.3	40	40	4.7	25.3
TEC1-01709	9.0	65	2.06	10.3	22	22	5.6	10.1
TEC1-04914	14	62	5.93	46.2	36	36	4.6	21
TES1-12703	3.0	62	15.4	25.7	30	30	3.6	12



Semiconductor refrigerator assemblies