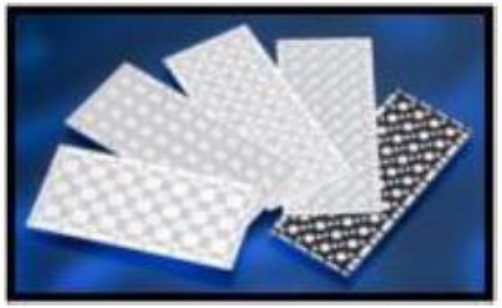
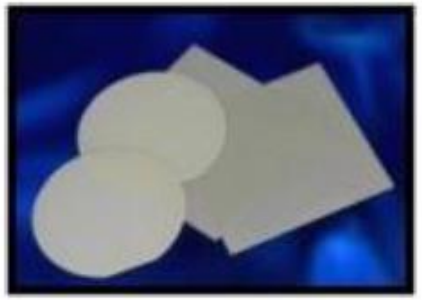
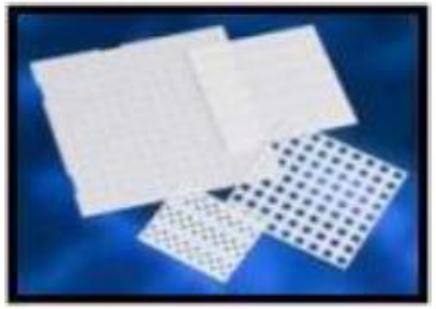
Substrate Products



LED substrate



Pressure sensor Component



Automobile HIC Substrate

Chip Resistor / Chip Array

- Ceramic Core W/W Inductor
- Automobile Ceramic Insulator

UMC
UNITED MINERAL & CHEMICAL CORP

Zipro

Ceramic Substrates Specifications

Material		Unit	AlN	ZTA Al_2O_3/ZrO_2	Al_2O_3				Reference
					96%	98%	98.5%	98.5%	
Item No.			ZP-ANS47	ZP-ZTAS	ZP-ALS96	ZP-ALS98	ZP-ALS985A	ZP-ALS985B	
Reflectivity	Thickness 0.5mm	%	30	N/A	88	N/A	N/A	N/A	
	Thickness 1.0mm	%	N/A	N/A	94	N/A	N/A	N/A	ASTM E903
Bulk Density		g/cm^3	≥3.26	≥4	≥3.72	≥3.74	≥3.74	≥3.75	ASTMC 373-88
Thermal Conductivity (25°C)		W/mK	≥170	≥24	≥24	≥25	≥25	≥24	ISO/DIS 22007-2.2
Coefficient of Thermal Expansion RT ~300°C		$x10^{-6}/°C$	3.16	6.12	5.8	6.37	6.34	5.96	ASTM C372-94
Coefficient of Thermal Expansion RT ~500°C		$x10^{-6}/°C$	4.02	7.04	6.82	7.12	7.11	6.81	
Dielectric Strength		V/m	≥15	≥15	≥15	≥15	≥15	≥15	ASTM D149
Dielectric Constant at 1MHz			10	12.4	9.8	10	10	10	ASTM D150
Dielectric Loss at 1MHz		$x10^{-3}$	3	8	3	3	3	3	ASTM D150
Volume Resistant		Ω-cm	$≥10^{14}$	$≥10^{14}$	$≥10^{14}$	$≥10^{14}$	$≥10^{14}$	$≥10^{14}$	ASTM D257
3-Point Flexural Strength		Mpa	≥350	≥600*	≥350	≥450	≥350	≥400	ASTMC1161-02c ASTM D790*
Surface Roughness in Ra		μm	≤0.6						
Color			Grey	White	White	White	White	White	
Dimensions		Standard	4.5" x 4.5" 4.7" x 4.7"	7.5" x 5.4" 4.5" x 4.5"	4" x 4" 4.5" x 4.5" 4.7" x 4.7" 5" x 5" 7.5" x 5.4" 7" x 7"				
		Thickness	0.38-1.00mm	0.32mm	0.38-1.0mm				
Applications			Heat Dissipation Substrates, High Power LED Packaging	Heat Dissipation Substrates, High Power LED Packaging, Automotive IGBT cooling substrate	Heat Dissipation Substrates, Resistors Substrates	Thin Film Resistors Substrates	Heat Dissipation Substrates, High Power LED Packaging, Easy to Cut Substrates	Heat Dissipation Substrates, High Power LED Packaging, Thin Film Substrates, Automotive IGBT cooling substrate, 5G Wireless Technology	