MULTILAYER HIGH TEMP COFIRED CERAMIC (HTCC)

AEGIS™ / AMETEK ENGINEERED INTERCONNECT AND PACKAGING

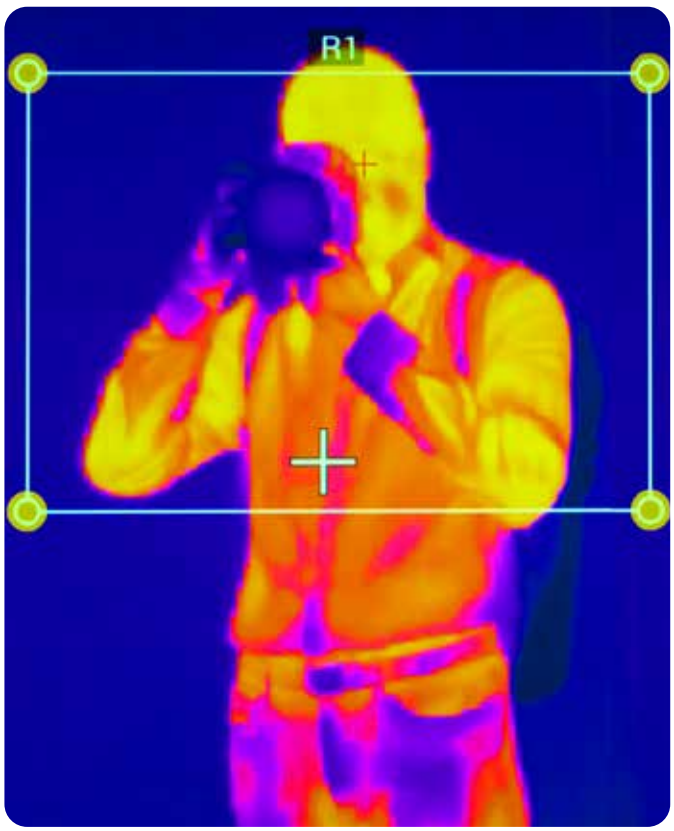
AMETEK Aegis multilayer HTCC alumina substrates and feedthroughs offer the performance and design flexibility needed for high bandwidth microelectronic packages.

AMETEK Aegis ceramic components provide high density pin, lead, and wire bond pad connectivity with low circuit resistance.

Ceramic Feedthroughs - HTCC

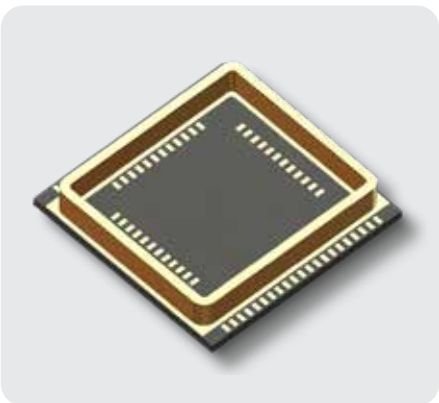
Our unique ceramic process produces a virtually monolithic ceramic component for superior strength and hermeticity compared to other manufacturers. AMETEK Aegis HTCC is ideal for the most demanding high-vacuum applications.

AMETEK Aegis HTCC reliability is unequalled, supporting vacuum lifetime up to 30 years which is ideal for infrared imaging applications. AMETEK Aegis HTCC is produced in a vertically integrated facility with in-house machining, brazing, soldering, plating and welding expertise.

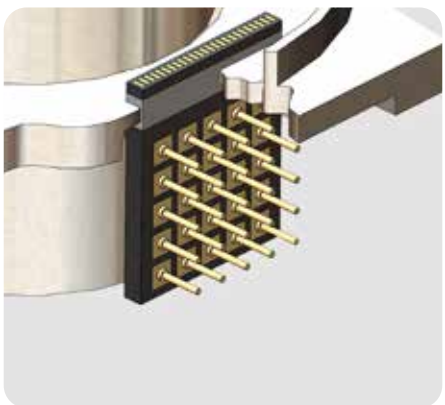


Major HTCC applications

- Guidance and communications systems
- Motion sensors, SAT COM
- Motor controls and DC-to-AC power converters
- Defibrillators, pacemakers
- Laser devices, electo-optical modules



Ceramic substrate package



Ceramic feedthru



Ceramic substrate package

MULTILAYER HIGH TEMP COFIRED CERAMIC (HTCC)

AMETEK Aegis HTCC Properties	
Material	92% Aluminum Oxide, Black
Density	3.6 g/cc, average
Surface Finish	0.7 micron (27 microinches) MAX
Flexural Strength	221 KPa @ 25°C
Compressive Strength	1496 KPa @ 25°C
Young's Modulus	280 GPa (approximation)
CTE	6.4 ppm/°C (25 - 400°C)
Thermal Conductivity	35 W/m·K
Dielectric Constant	9.887
Hermeticity	$1x10^{-13}$ cc/sec Helium at 15 psi differential*
Thermal Cycling	1,000 cycles -65°C to +150°C
Conductor line width	Consult factory for more details if requirement is less than 0.004"
Conductor line spacing	Consult factory for more details if requirement is less than 0.004"
Dielectric coating	Aluminum Oxide, 0.001" thick maximum (consult factory for details)

* Testing of assemblies at AMETEK Aegis is limited to $1x10^{-10}$ cc/sec Helium per MIL-STD-883 method 1014 Cond A4.

AMETEK AEGIS

E: aegis.info@ametek.com | **T:** +1 508 998 3141

www.ametekaegis.com

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