

Duratron T4203 PAI and Semitron ESd 520HR

Longer Life for Integrated Circuit Test Sockets

TRENDS

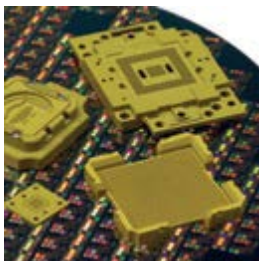
Smaller and more powerful integrated circuits with pins more closely packed together are placing new demands for precision tolerance control and wear life on materials used for chip test sockets. The same sockets and related test fixtures also often require ESD properties.

ANSWERS

Our partner Quadrant's Duratron T4203 PAI and glass-reinforced Duratron T5530 PAI have become the industry standard for many current test socket designs. New materials like PAI-based Semitron ESd 520HR also deliver consistent ESD performance while providing the mechanical performance required. Quadrant continues to evolve with this industry and offer new materials that match the changing needs of equipment builders and ultimately their end-users.

CUSTOMER BENEFITS

Duratron PAI and Semitron ESd materials based on Duratron PAI from Quadrant are stiff and stable allowing long life in test cycles. Consistent ESD performance help minimise semiconductor production yield losses during their qualification.



Extrusion / Machining

Application Requirements	Duratron PBI & Semitron Performance Factors
During integrated circuit testing, chip sockets are exposed to extreme temperature cycling up to 149°C and repeated insertion loads.	Duratron PAI products are the industry standard due to stiffness and dimensional stability at extreme temperatures.
Dimensional stability is critical with extremely small hole patterns and tight tolerance requirements down to +/- 0.0127mm.	Low coefficient of linear thermal expansion allows tight dimensional control of the precision machined holes (size / location) to ensure reliable chip testing.
Tighter hole patterns equal less solid material area that could result in reduced stiffness, component deflection and poor connections.	Extreme stiffness at high temperatures means minimal deflection and uniform pin connections during testing.
Static dissipative properties are often specified to prevent either circuit damage from applied voltages or static build-up during high speed handling.	Static dissipative Semitron ESD 520HR provides uniform and reliable protection of critical components.

Other material candidate's:

- ❖ Vespel PI: Lower stiffness compared to Duratron PAI grades at test temperatures. Also much higher material cost.
- ❖ PEEK blends: Quadrant offers speciality Ketron PEEK grades for certain test applications. However, compared to Duratron PAI, glass/ceramic filled PEEK compounds can lose stiffness when tight hole patterns are machined. Burrs and abrasion are also a concern.

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