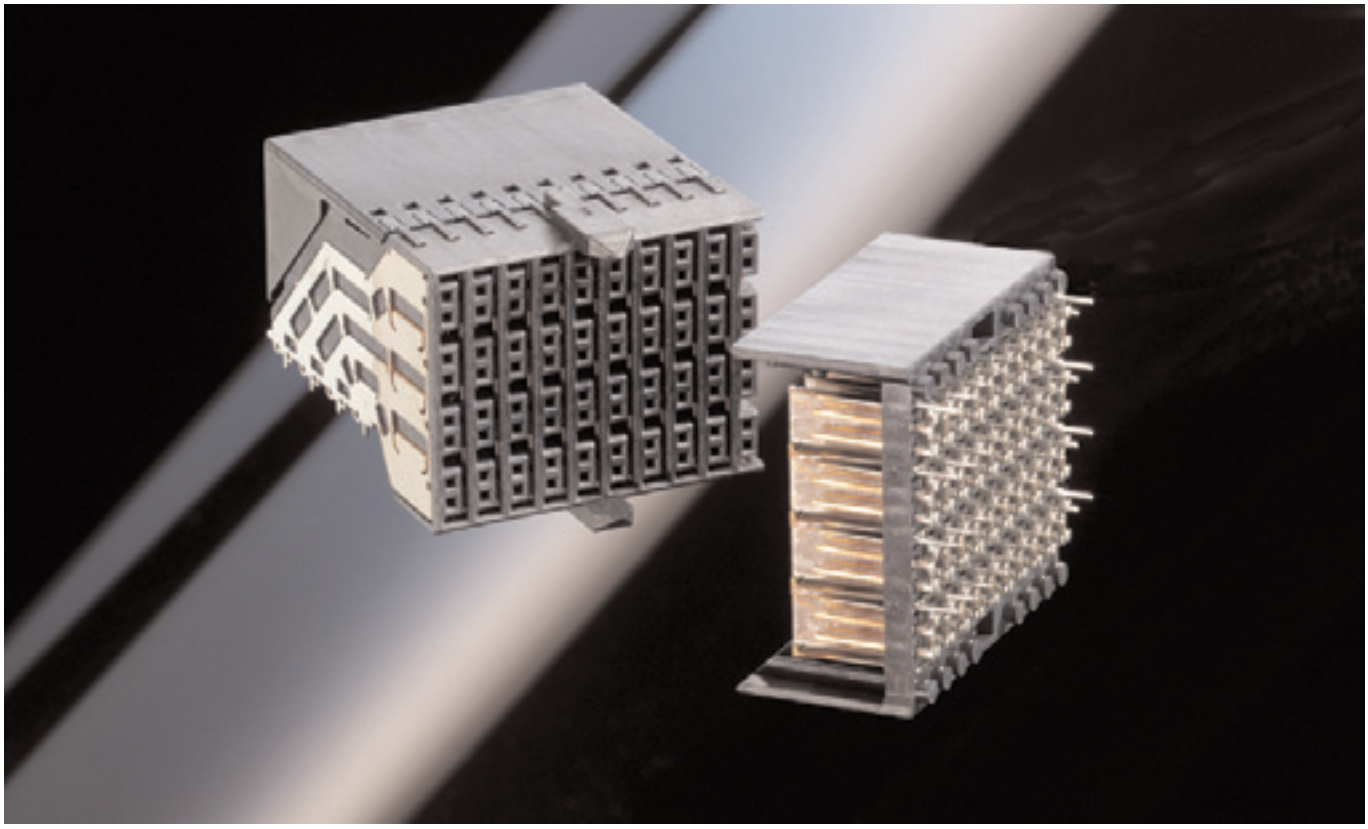
ERmet zeroXT

High Speed Differential Connector System for 10 GBit/s



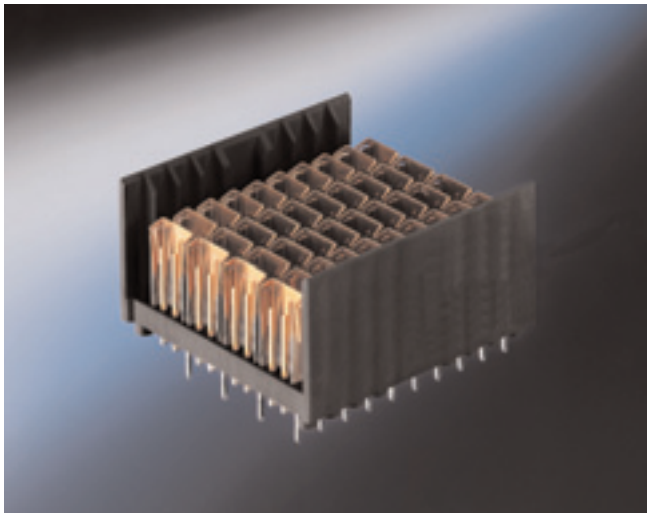
General

For modern high speed backplane designs with data transimission rates above 10 Gbit/s ERNI has developed the ERmet zeroXT Connector System with 100 Ohm matched differential impedance for enhanced signal integrity. The new connector system is specifically designed to meet the challenging electrical performance needs required by next generation designs utilizing low voltage differential signaling. The ERmet zeroXT now offers an innovative shielding design and SMT termination to provide very low cross-talk, low skew and improved trace routing. Additional features and benefits are a reliable female contact design, different mating levels and a rugged housing. Economical and easy trace routing is achieved by the optimized grid design with in-line design for signal and ground pins. This allows wide traces for long runs without ever having two differential pairs to negotiate via holes. ERmet zeroXT is compatible in pin density and layout to the ERmet ZD.

Technical Features

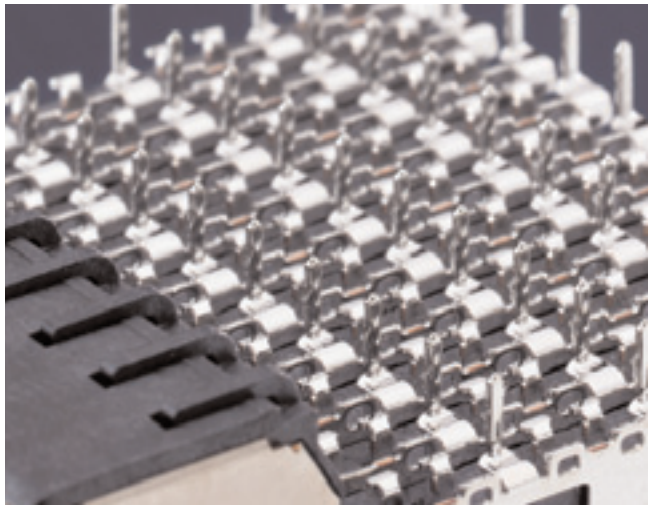
- **Design:** Wafers with individually fully shielded pairs of contacts.
- **Contacts:**
  Signal: Low noise, dual beam female and male contacts with SMT termination.
  Ground: Female and male shield blades with combined SMT and THR (Thru Hole Reflow) termination pins.
- **Wafer pitch:** 2.5 mm from wafer to wafer.
- **Pitch between signal pins:** 1.5 mm between pairs (within wafer).
- **Pitch between pairs:** 4.5 mm (within wafer).
- **Ground arrangement:** In line with signals at termination and sur rounding shield.
- **Multiline Crosstalk:** <1% at 100 ps rise time, 250 mV swing.
- **Differential Impedance:** 100 Ω
- **Power Modules:** Closed entry, vertical female backplane modu les with stamped blades.
- **Alignment Features:** Improved pre-alignment guide and polari zing features, 2 rigid blades for all modules.

1. Innovative Shielding



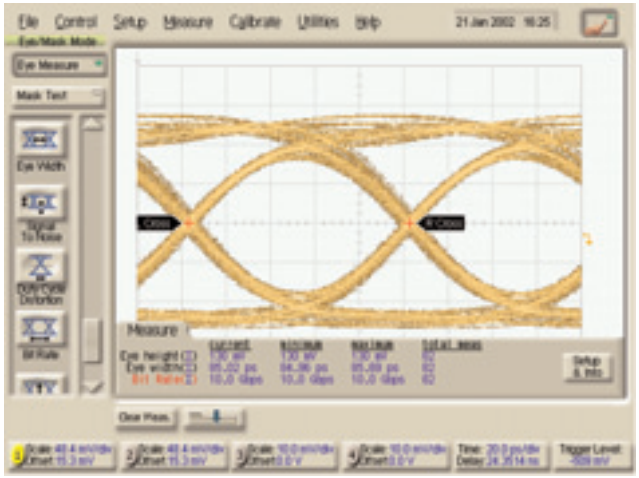
A special shielding design provides excellent shielding effectivness. The male connector has a “C” shielding for each signal and on the female connector side each differential pair is fully shielded by special shield blades around the signal pairs. Additionally, the “C” shaped shield blades provide for rugged mating and greatly reduce the possibility of contact stubbing.

2. SMT Termination



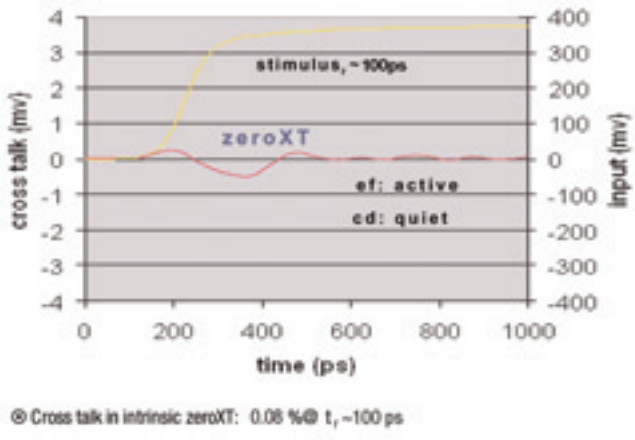
Special female connector design for secure SMT application of the ERmet zeroXT with built-in coplanarity of 0.1 mm and built-in secure strain relief for the female connector. The strain relief is achieved by SMT/THR (Thru Hole Reflow) termination pins for the male and female shield blades. This secures no forces on the signal contacts.

3. Excellent Signal Integrity



Based on special design features like an innovative improved shielding and the availability of versions with SMT termination the ERmet zeroXT connector system provides enhanced signal integrity. Each 100 ohm differential pair is a transmission line with its own tightly coupled reference ground to control impedance and minimize connector noise. Every wafer is shielded with a metal cage. The longest gap length to the outside of a wafer is 4 mm, which gives a very good shielding effectiveness.
The SMT termination secures a very constant impedance profile with no peaks and discontinuities as known from the plated-thru holes.

4. Excellent Crosstalk



⊗ Cross talk in intrinsic zeroXT: 0.08 %@ t_r ~100 ps

Already this word tells you, what performance you will get. The ERmet zeroXT provides you an excellent crosstalk, which means nearly no crosstalk: zeroXT.