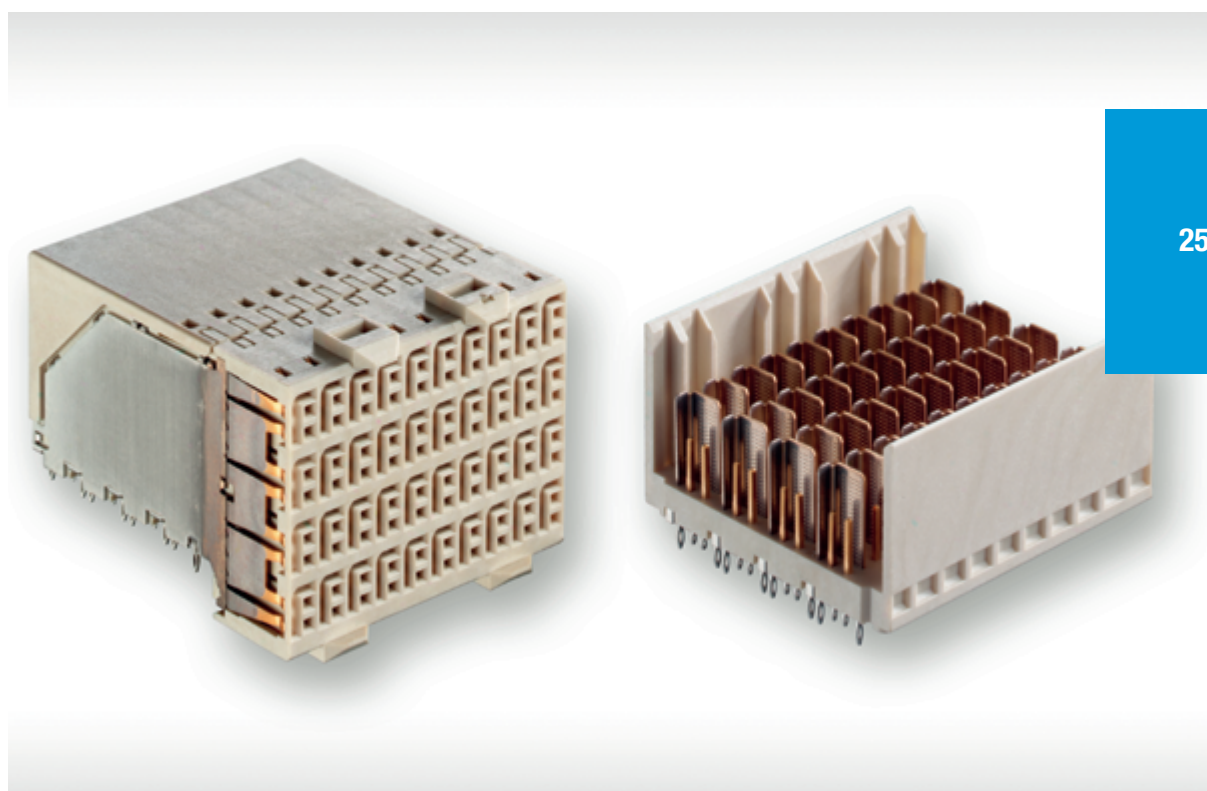


ERmet ZDpro - High-Speed Connector

OVERVIEW

GENERAL



The ERmet ZDpro connector is an enhancement of the ERmet ZD family. This high-speed differential Hard Metric connector system enables data rates of >25 Gbit/s and is the first connector system that meets the requirements for 100G ATCA technology. The ERmet ZDpro is based on the mechanical design of the proven ERmet ZD and ERmet ZDplus with the same dimensions. To enable higher data rates ERNI Electronics has optimized the press-fit termination of the connectors. To benefit from the maximum performance of the new ERmet ZDpro the usage of backdrilling is recommended. Decreasing via stub length and the related “stub effect” by backdrilling significantly reduces the reflections and the overall BER (Bit Error Rate) of the connection.

The first products of the ERmet ZDpro family are the 4-pair right angle female connector and the straight male connector with press-fit termination. ERmet ZDpro connectors are backwards mating compatible to ERmet ZD and ZDplus connectors.

This means, that existing backplane designs don't need layout changes on the backplane side, if customers want to upgrade their daughtercards in the first step before upgrading the whole system. Of course the layout on the daughtercards has to be modified, if ERmet ZDpro receptacles are used.

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FEATURES —

TECHNICAL FEATURES

Pitch	<p>Wafer pitch: 2.5 mm from wafer to wafer</p> <p>Pitch between signal pins: 1.0 mm between pairs (within wafer)</p> <p>Pitch between pairs: 4.5 mm (within wafer)</p>
Pin Configuration	40 differential pairs per inch
Datarate	> 25 Gbit/s per differential pair
Additional Features	<ul style="list-style-type: none"> - Compatible to ERmet ZD and ZDplus connectors - Improved crosstalk behavior - Improved layout on daughter cards - Meets the requirements of 100G ATCA technology



Signal pin for \varnothing 0.30 via
Shield pin for \varnothing 0.46 via

ERmet ZDpro - High-Speed Connector

CHARACTERISTICS

TECHNICAL DATA

Description	Standard	Male- and Female Connectors
Number of pins		4-pair
Climate category	DIN EN 60068-1 test b	-55/125/56
Temperature range		-55/125 °C
Operating voltage	IEC 60664	The permissible operating voltages depends on the customer application and on the applicable or specified safety requirements. Insulation coordination according to IEC 60664-1 has to be regarded for the complete electrical device. Therefore, the maximum creep- age and clearance distances of the mated connectors are specified for consideration as a part of the whole current path. In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used, and have to be taken into account separately. As a result the creepage and clearance distances for the application may be reduced compared to those of the connector.
Dielectric strength	IEC 60512 test 4a	contact pair - contact pair 500 V _{rms} contact pair - shield 500 V _{rms}
Contact resistance	IEC 60512 test 2a	< 50 mΩ (Signal) < 15 mΩ (Shield)
Insulation resistance	IEC 60512 test 3a	> 10 ⁴ MΩ
Vibration, sine	IEC 60512 test 6d	10 – 2000 Hz 20 g
Contact interruption (while vibration test)	IEC 60512 test 2e	< 1 μs
Mechanical operation (mating cycles)	IEC 60512 test 9a	> 250 mating cycles

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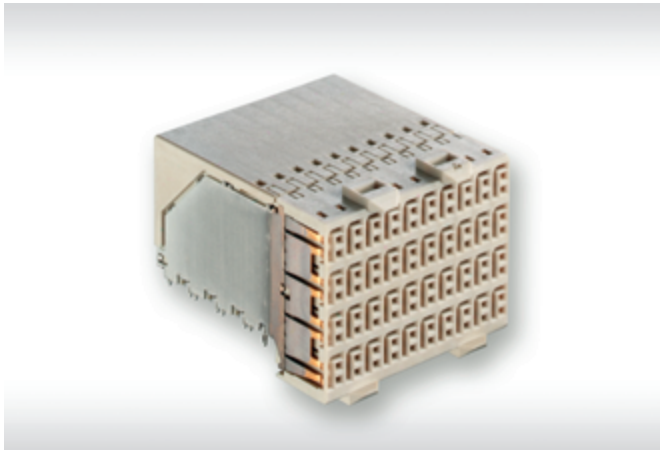
CHARACTERISTICS —

Description	Standard	Male- and Female Connectors
Number of pins		4-pair
Insertion and withdrawal force	IEC 60512 test 13b	Insertion force: max. 0.7 N/pin (Signal), max. 0.9 N/pin (Shield) Withdrawal force: min. 0.15 N/pin
Gauge retention force	IEC 60512 test 16e	> 0.2 N
Signal transmission data		
Datarate		> 25 Gbit/s
Differential impedance		100 Ω
Housing materials		
Plastic material		LCP
CTI value	IEC 112	CTI 175
UL flame rating		UL 94 V-0
UL file		E83005
Contact materials		
Base material		Cu alloy
Mating area		PdNi with gold flash
Termination area		Sn
Environment compatibility		
Recycling		no flame-retardent additives, no toxic additives allow easy recycling
Product Approval		
UL/CSA		E84703

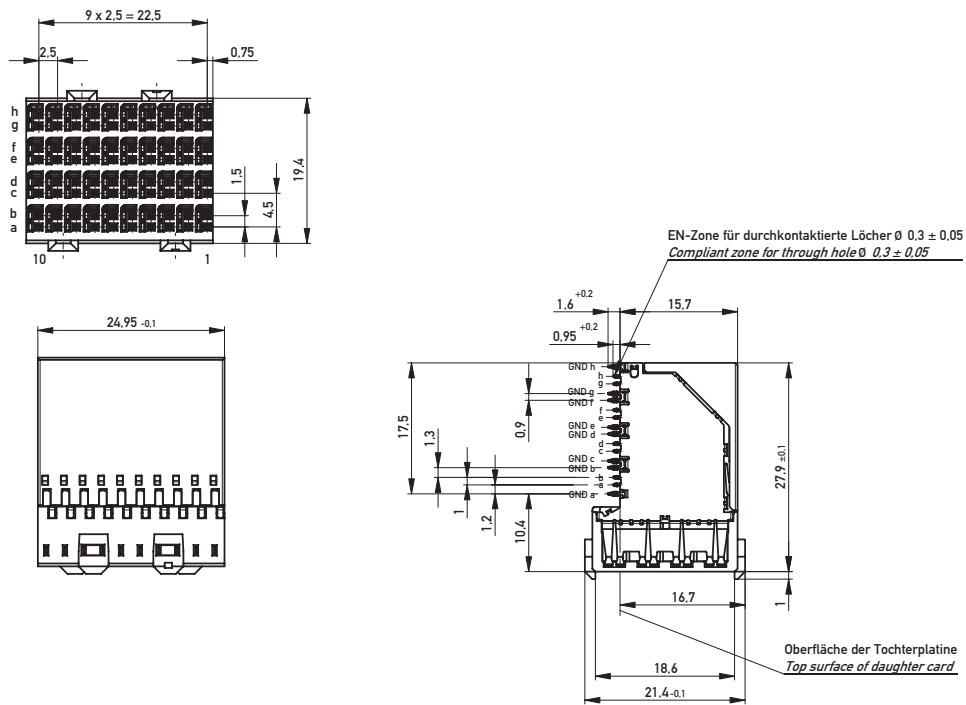
ERmet ZDpro - High-Speed Connector

RIGHT ANGLE FEMALE CONNECTOR 4 PAIR

PRODUCT SPECIFICATION



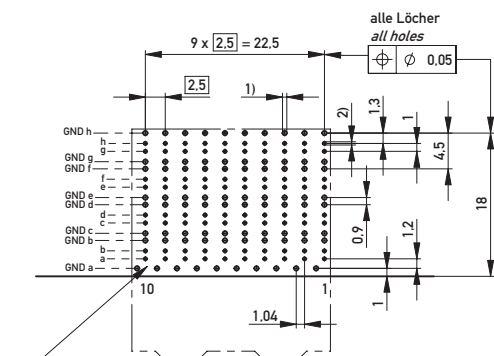
DIMENSIONAL DRAWING



ERmet ZDpro - High-Speed Connector

RIGHT ANGLE FEMALE CONNECTORS 4 PAIR

PCB LAYOUT



Auf gesamter Steckverbindergrundfläche Bestückungsseite keine Leiterbahnen möglich!
 No traces on the assembly side underneath the connector possible!

1) $\varnothing 0.46 \pm 0.05$ Durchmesser des metallisierten Loches
 $\varnothing 0.46 \pm 0.05$ Diameter of finished plated-through hole

$\varnothing 0.55 \pm 0.02$ Bohrdurchmesser des Loches
 $\varnothing 0.55 \pm 0.02$ Diameter of drilled hole

2) $\varnothing 0.3 \pm 0.05$ Durchmesser des metallisierten Loches
 $\varnothing 0.3 \pm 0.05$ Diameter of finished plated-through hole

$\varnothing 0.4 \pm 0.02$ Bohrdurchmesser des Loches
 $\varnothing 0.4 \pm 0.02$ Diameter of drilled hole

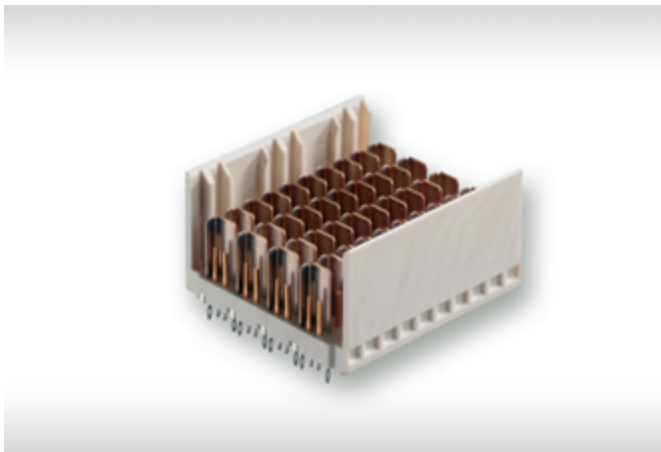
ORDERING INFORMATION

Configuration	Length	Pin Configuration	Termination	Part Number
4 Pair / 10 wafers	25 mm	40 pairs - 80 signals / 40 grounds	Pressfit	474960

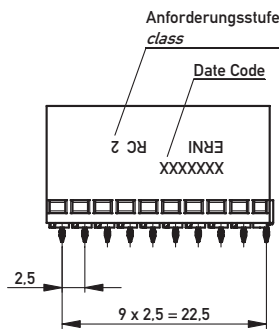
ERmet ZDpro - High-Speed Connector

VERTICAL MALE CONNECTOR 4 PAIR

PRODUCT SPECIFICATION

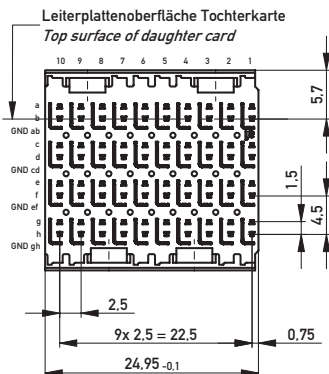
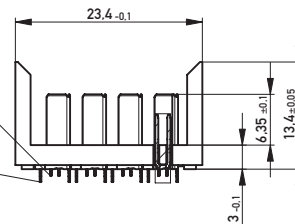


DIMENSIONAL DRAWING

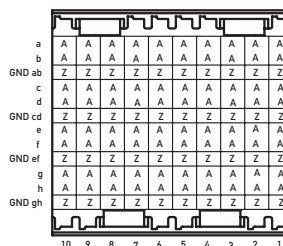


EN-Zone für durchkontaktierte
Löcher $\varnothing 0.3 \pm 0.05$
compliant zone for through hole
 $\varnothing 0.3 \pm 0.05$

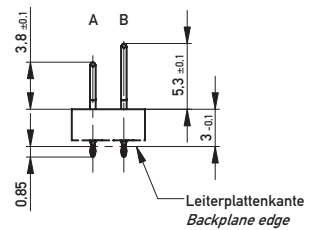
EN-Zone für durchkontaktierte
Löcher $\varnothing 0.46 \pm 0.05$
compliant zone for through hole
 $\varnothing 0.46 \pm 0.05$



Bestückungsplan - contact layout



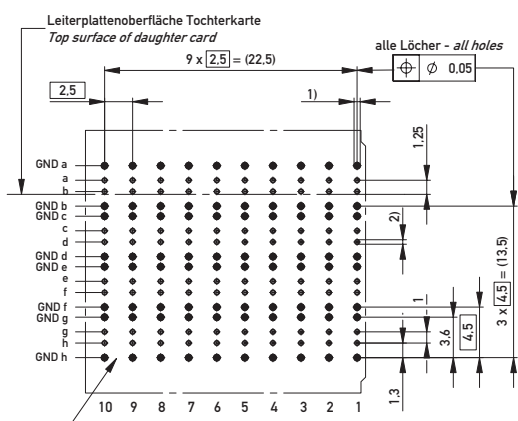
Kontaktversionen, Messerkontakte
Contact Selection Options, Male Contacts



ERmet ZDpro - High-Speed Connector

VERTICAL MALE CONNECTOR 4 PAIR

PCB LAYOUT



Auf gesamter Steckverbindergrundfläche Bestückungsseite keine Leiterbahnen möglich!
No traces on the assembly side underneath the connector possible!

ORDERING INFORMATION

Configuration	Length	Pin Configuration	Male Contacts	Termination	Part Number
4 Pair / 10 wafers	25 mm	40 pairs - 80 signals / 40 grounds	A	Pressfit	474982
4 Pair / 10 wafers	25 mm	40 pairs - 80 signals / 40 grounds	B	Pressfit	484727