MicroStac®
0.8 mm Mezzanine Connector System

www.erni.com

| Catalog E 074521 | 02/08 | Edition 8 |

ERNI

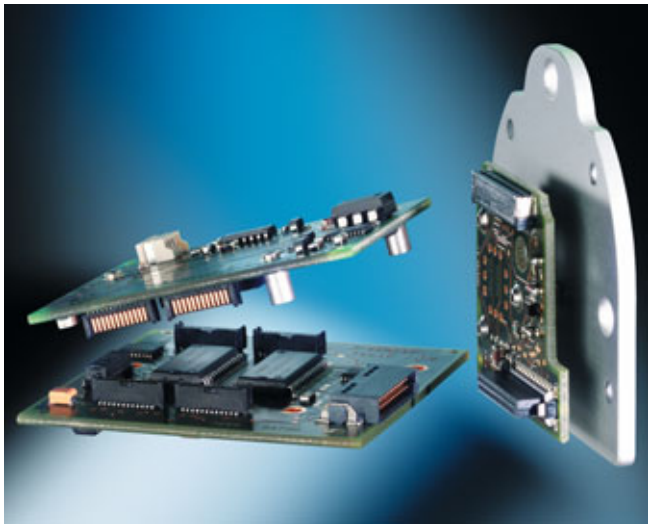
www.erni.com

| Catalog E 074521 | 02/08 | Edition 8 |

MicroStac® - 0.8 mm Mezzanine Connector System

Table of Contents

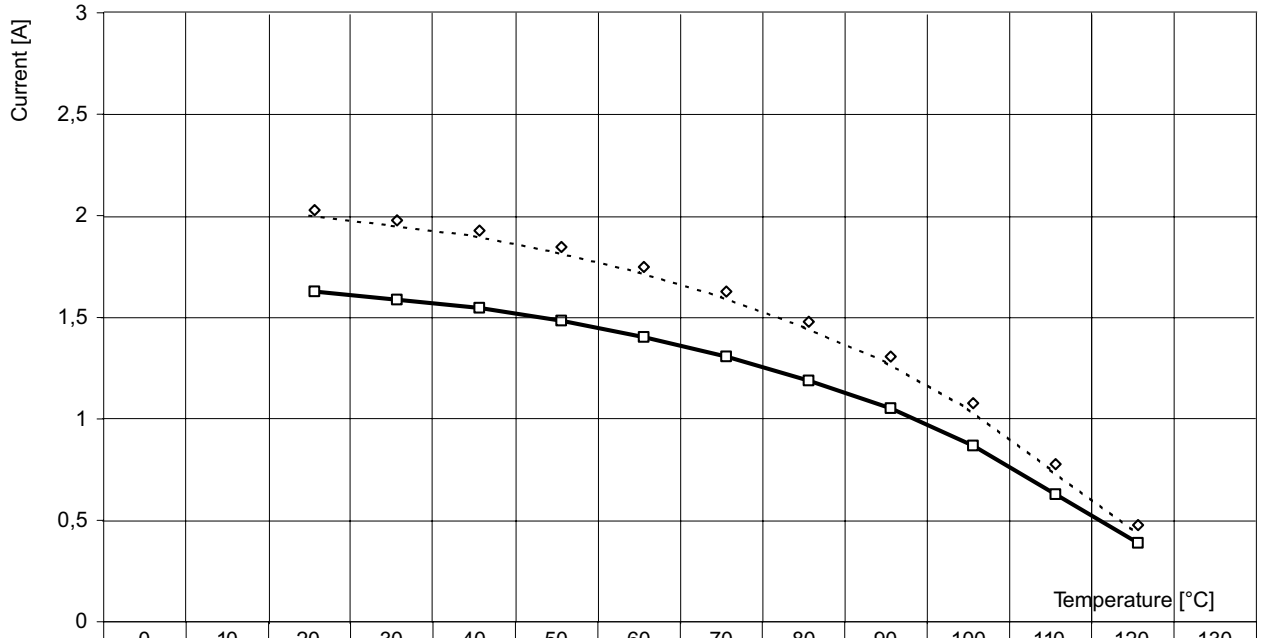
MicroStac® - 0.8 mm Mezzanine Connector System
Applications



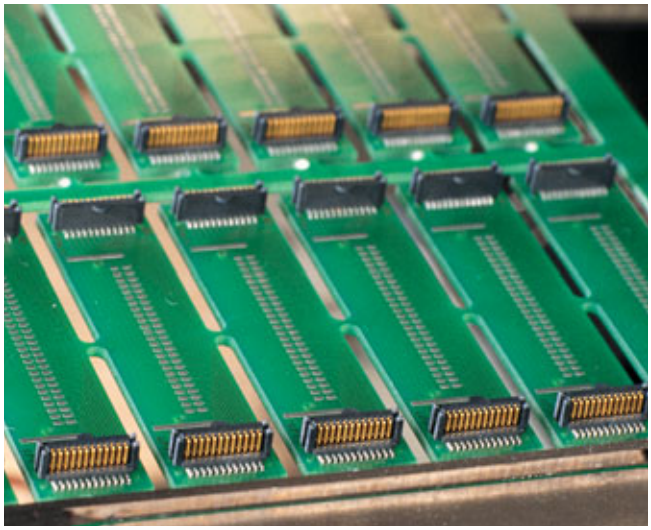
Sensor engineering:	Light barriers, switches
Medical engineering:	Intensive medical equipment, portable diagnostics
Mobile communication:	Mobile phones, PDAs, organizer, memory modules
Car electronics:	Car radios, mobile car phones, mobile car office equipment
Control engineering:	Mini PLCs, fieldbus modules, mini solenoid sytems
Facility management:	Signal and indicator devices, alarm systems and bus modules

Derating Curve

In spite of the small design of the ERNI MicroStac series, they reach a high current rating. The contacts feature large radiant surfaces to derive heat. The derating curve shows the 50pin version without PCB.
For further derating curves related to the according pin count see our webpage.



	0	10	20	30	40	50	60	70	80	90	100	110	120	130
Basecurve [A]			2	1,95	1,9	1,82	1,72	1,6	1,45	1,28	1,05	0,75	0,45	
Derating curve [A]			1,6	1,56	1,52	1,456	1,376	1,28	1,16	1,024	0,84	0,6	0,36	

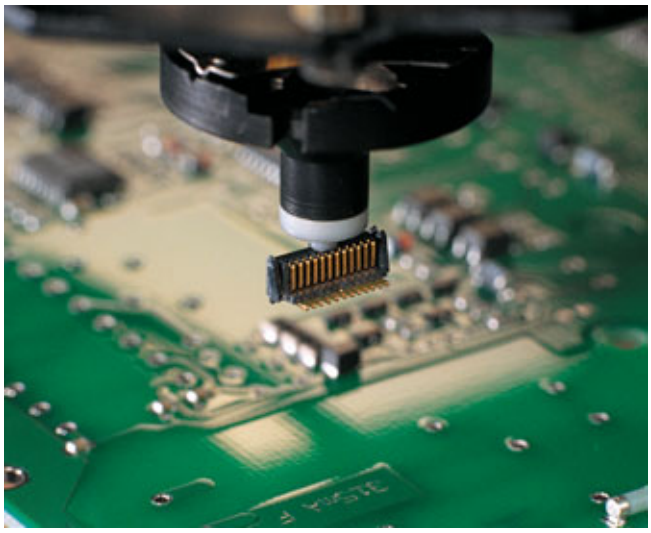


Controlled SMT Reflow Soldering Process

The heat-resistant thermoplastic insulator and precision coplanar contacts permit a controlled SMT soldering process.

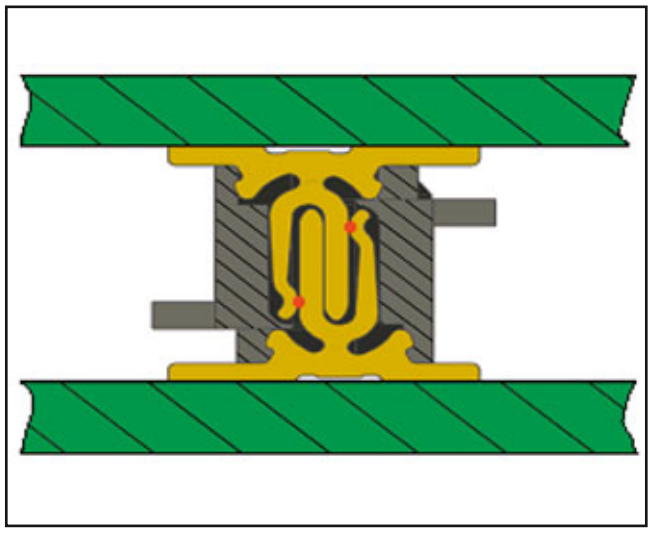
Safe Packaging and Fully Automated Feed

The antistatic tape and reel packaging not only protects the high-precision contacts and coplanarity of our MicroStac connectors, but also permits placement of connectors by automated pick and place equipment



Easy Recognition and Secure Handling

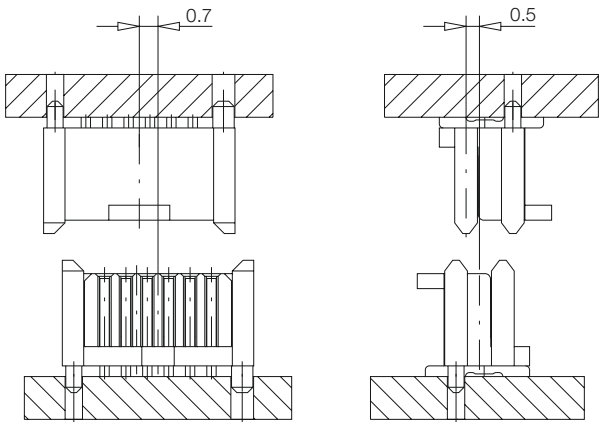
The black insulation body ensures easy visual recognition by the automatic pick and place equipment.



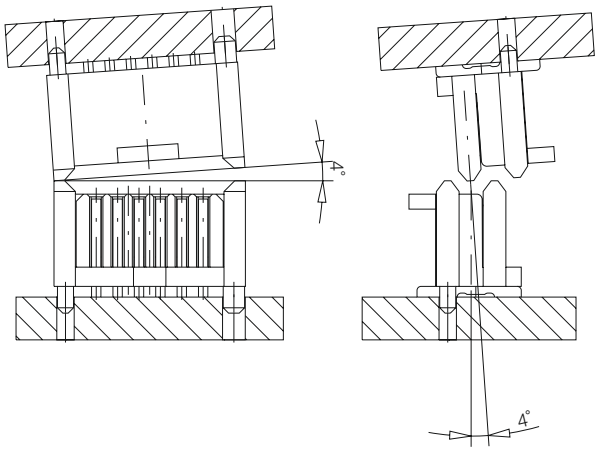
Contact Design for 5 mm Stacking Height

The MicroStac contacts are based on a patended hermaphroditic contact design with two contact points for compensation of tolerances.
Patent-no.: DE 19 809 881; US 6,379,170

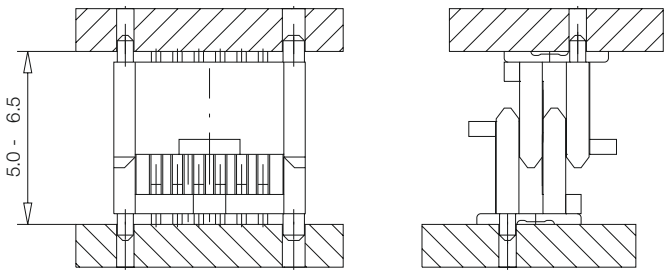
Allowed misalignment tolerances longitudinal: ±0.7 mm, transverse: ±0.5 mm



Allowed angular inclination tolerances longitudinal: ±4°; transverse: ±4°



Wipe length - maximum "Board to Board" distances (5 mm Stacking Height) for secure mating: 1.5 mm



All dimensions in mm

	Standard	1 Row and 2 Row Versions
Number of Pins		6, 9, 12, 14, 50
Technical data		
Climate Category	DIN EN 60068-1 test b	-55/125/21
Temperature range		-55/125 °C
Current rating per contact		50 pin version: 1.6 A @ 20°C 1.3 A @ 70°C 0.8 A @ 100°C
Air – and creepage distance		0.4 mm
Voltage rating	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 creepage 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	contact – contact 500 V_{rms}
Contact resistance	IEC 60512 test 2a	< 10 mΩ
Insulation resistance	IEC 60512 test 3a	> 10^4 MΩ
Vibration, sine	IEC 60512 test 6d	10 – 2000 Hz 20 g
Contact disturbance (while vibration test)	IEC 60512 test 2e	< 1 µs
Shock, halfsine	IEC 60512 test 6c	50 g 11 ms
Contact disturbance (while shock test)	IEC 60512 test 2e	< 1 µs
Mechanical operation (mating cycles)	IEC 60512 test 9a	< 10 mating cycles
Insertion and withdrawal force	IEC 60512 test 13b	3 mm Stacking Height : max. 4 N per contact 5 mm Stacking Height : max. 2 N per contact

MicroStac® - 0.8 mm Mezzanine Connector System

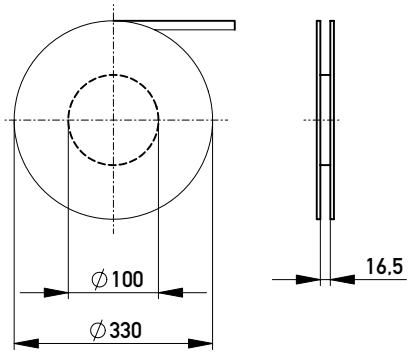
Electrical and Mechanical Characteristics

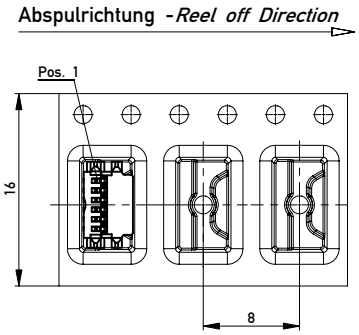
	Standard	1 Row and 2 Row versions
Number of Pins		6, 9, 12, 14, 50
Process-conditions		
Solder temperature max.	IEC 68-2-20	
Hand soldering temperature max.		3.5 s at 350 °C
Dip soldering temperature max.		10 s at 260 °C
Reflow soldering temperature max.	JEDEC J-STD-020C	20 - 40 s at 260 °C
Coplanarity		< 0.1 mm
Housing materials		
Plastic material		PA 46
CTI value	IEC 60112	CTI 225
UL flame rating		UL 94 V-0
UL file		E 47960
Contact materials		
Base material		Cu alloy
Mating area		0.1 µm Au over 1-2 µm Ni
Termination area		4-6 µm Sn over 1-2 µm Ni
Environment compatibility		
Recycling	no flame-retardent additives, no toxic additives allows easy recycling	

6 Pin Version

Verpackt in Gurtverpackung
Verpackungseinheit:1700 Stück

Tape on Reel Packaging
Packaging unit: 1700 pcs

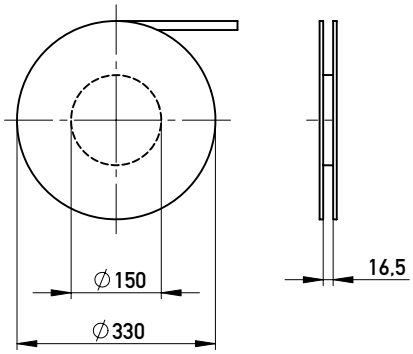


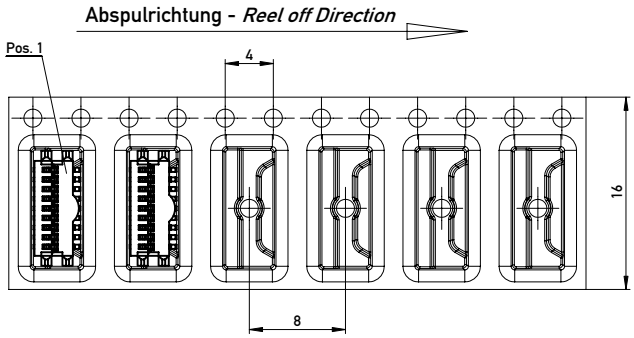


9 Pin Version

Verpackt in Gurtverpackung
Verpackungseinheit: 1750 Stück

Tape on Reel Packaging
Packaging unit: 1750 pcs

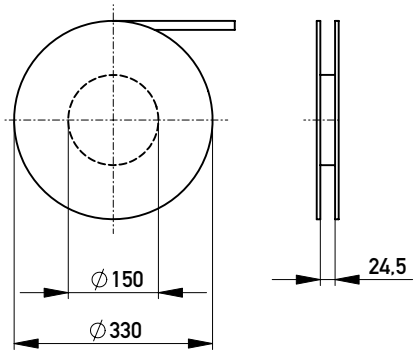


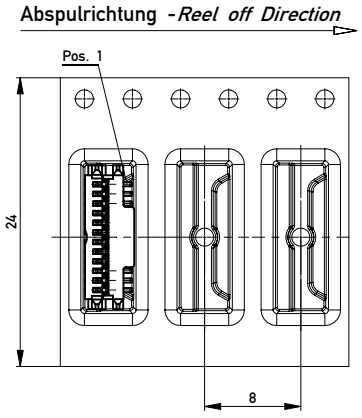


12 Pin Version

Verpackt in Gurtverpackung
Verpackungseinheit: 1300 Stück

Tape on Reel Packaging
Packaging unit: 1300 pcs





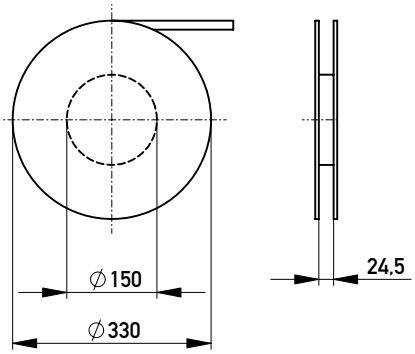
All dimensions in mm

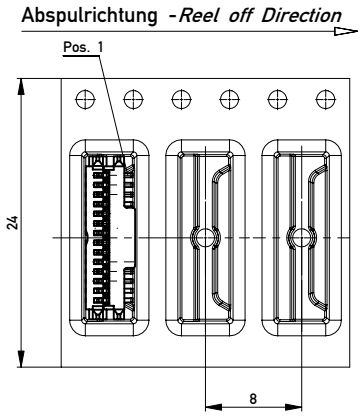
MicroStac® - 0.8 mm Mezzanine Connector System
Packaging

14 pin Version

Verpackt in Gurtverpackung
Verpackungseinheit: 1300 Stück

Tape on Reel Packaging
Packaging unit: 1300 pcs

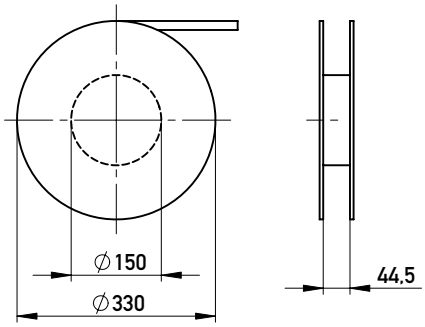


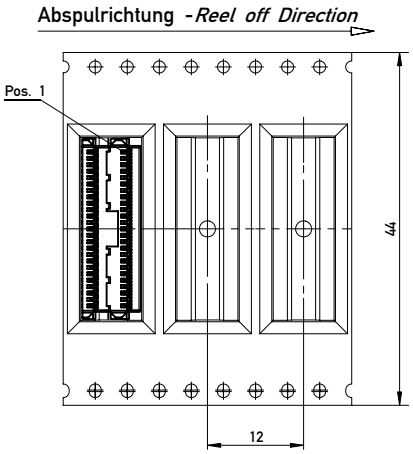


50 Pin Version

Verpackt in Gurtverpackung
Verpackungseinheit: 800 Stück

Tape on Reel Packaging
Packaging unit: 800 pcs



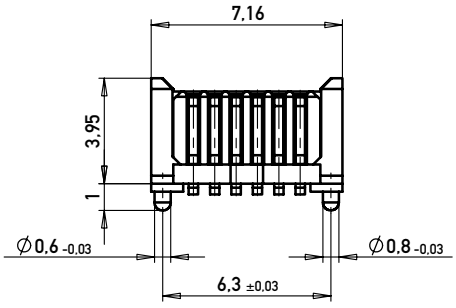


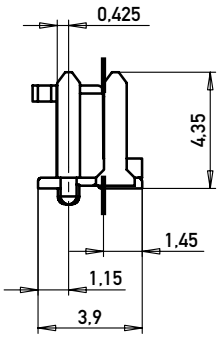
All dimensions in mm

- Pitch 0.8 mm
- SMT process compatible
- Hermaphroditic contact design, two contact points
- One part number for interconnection saving admin and logistic costs
- Integrated pick and place pad and very low weight for high speed assembly
- Positioning pegs
- Secure standing while solder process, large solder pads
- Black insulation body and silver terminals for optical vision system (contrast measuring methode)
- Polarization and pre-alignment while mating

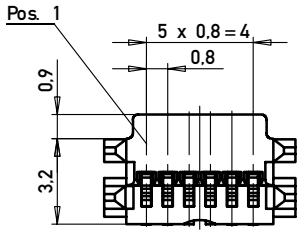
- Component weight 6 Pin: 0.14 g
- Large wipe length 1.5 mm
- Mated stacking height 5 mm

Dimensional Drawing

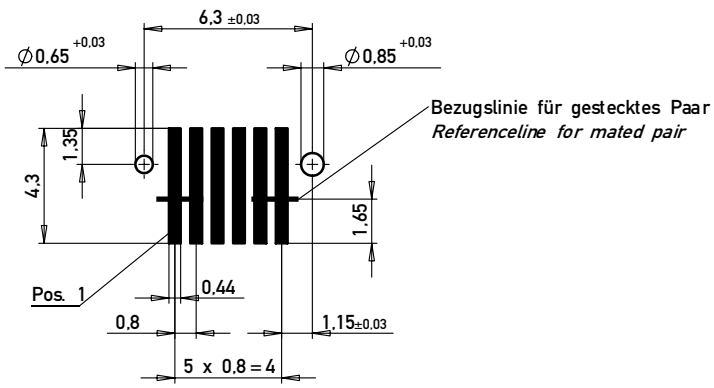




Koplanarität der Anschlüsse ≤ 0,1mm
Coplanarity area of termination ≤ 0,1mm



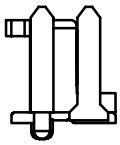
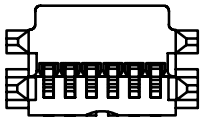
Leiterplatten-Layout Vorschlag
PCB-Layout Proposal

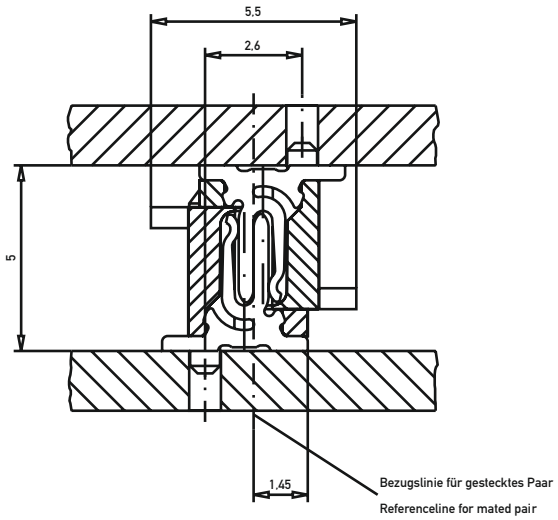


All dimensions in mm

MicroStac® - 0.8 mm Mezzanine Connector System

6 Pin Single Row Version

Configuration	Number of Pins	Termination	Mated Stacking Height	Part Number
				
Single row with peg, tape and reel, 1700 pcs/reel	6	SMT	5 mm	**114711**



All dimensions in mm