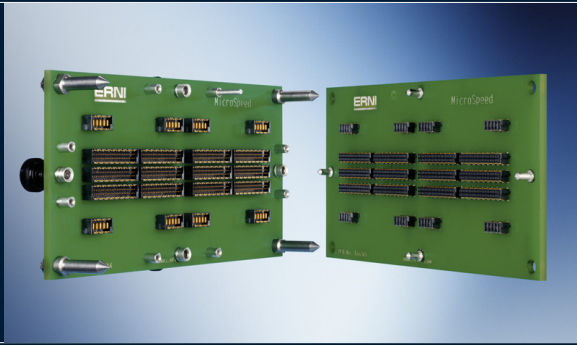
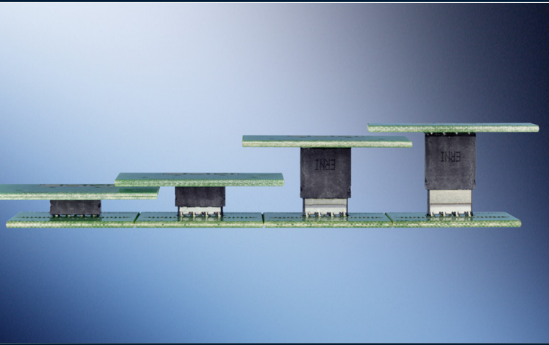




---

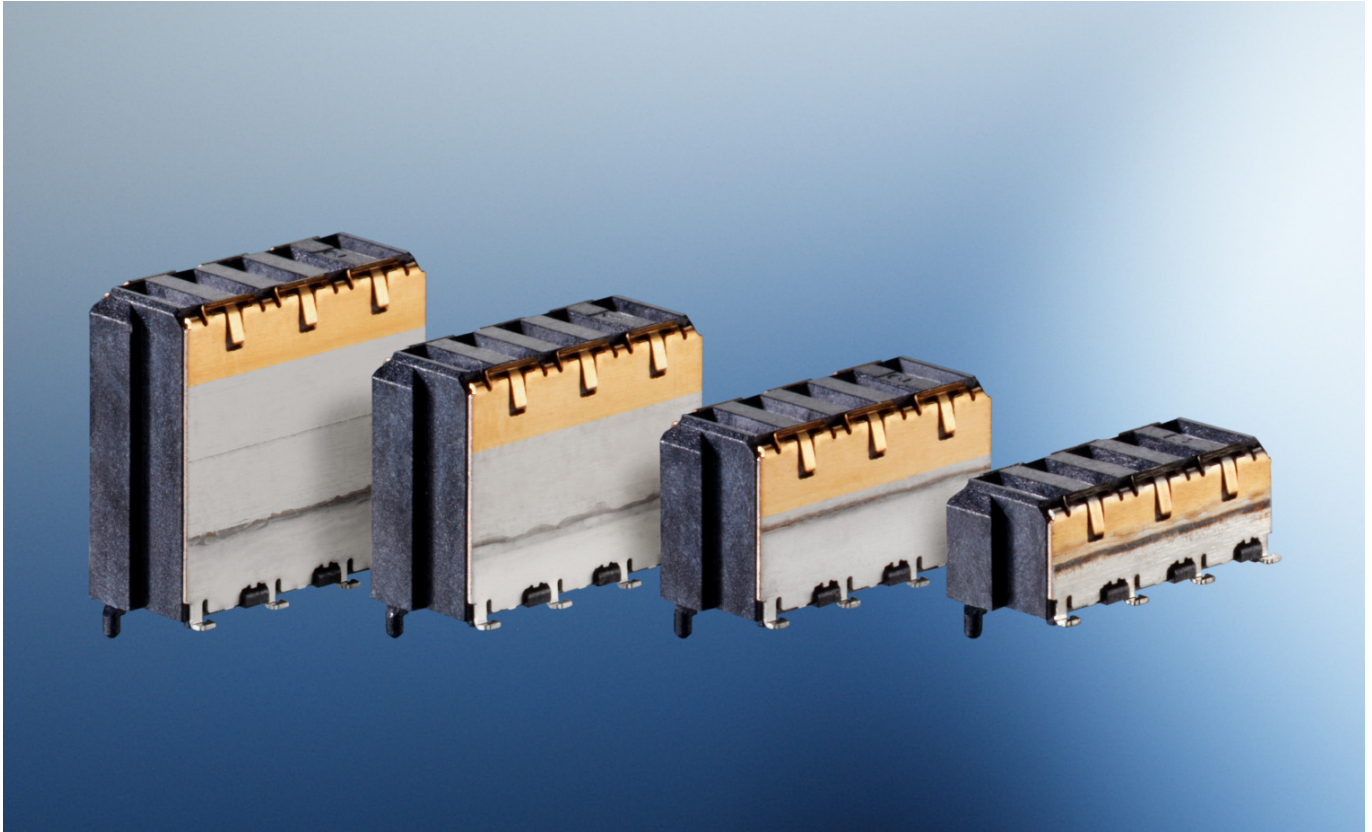
# MicroSpeed® Power Modules



General .....	.2
Mating Conditions .....	.3
Board-to-Board Height Configurations .....	.4
Electrical and Mechanical Characteristics .....	.5
Packaging .....	.7
Male Connectors .....	.8
Female Connectors .....	.12
Part Number Index .....	.16

# MicroSpeed® Power Modules

## General

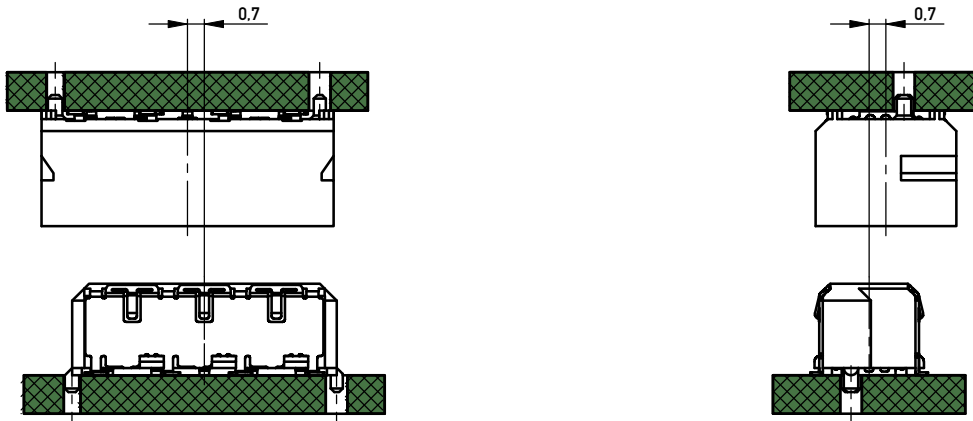


This complementary range of Power Module connectors, with 2.0 mm contact pitch, fulfils the need for miniaturized and high reliability power systems, and offers a large number of options for mezzanine applications. One of its unique features is its high current-carrying capacity in comparison to its small size. Therefore, the system is ideally suited for use with small, high performance devices such as CPUs, drives, LCD panels, etc. Providing a variety of height versions of the male and female connectors, the Power Module series enables stacking heights from 5 mm to 20 mm. Subsequently, almost every need for different PCB arrangements can be addressed. Another major advantage is the multiple-connector mating capability, which allows the mating of more than one connector pair at the same time.

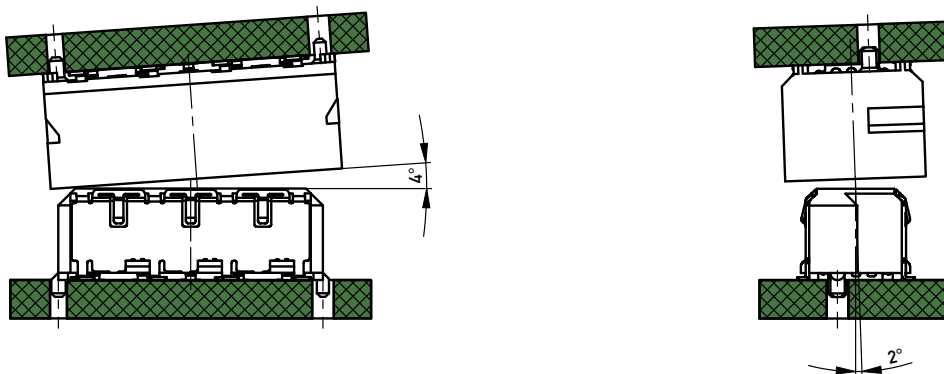
The SMT connectors meet all the needs of fast automatic assembly machines. They are manufactured and 100% inline quality checked by machine to ensure high coplanarity and optimized soldering. The layout is designed with an optimal solder pad size to guarantee high retention forces. The integrated 3-point double beam female contact ensures durable low-contact resistance over the whole lifecycle.

The contacts are post plated, leaving no bare edges in the contact and solder areas. The connectors are equipped with polarized positioning pegs, and the connector plating is lead free, complying with the European RoHS directive.

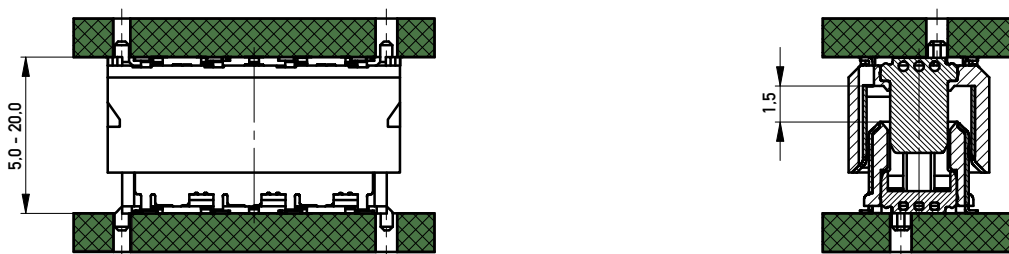
**Allowed misalignment tolerances longitudinal and transverse axes  $\pm 0.7$  mm**



**Allowed angular inclination tolerances longitudinal:  $\pm 4^\circ$ ; transverse:  $\pm 2^\circ$**



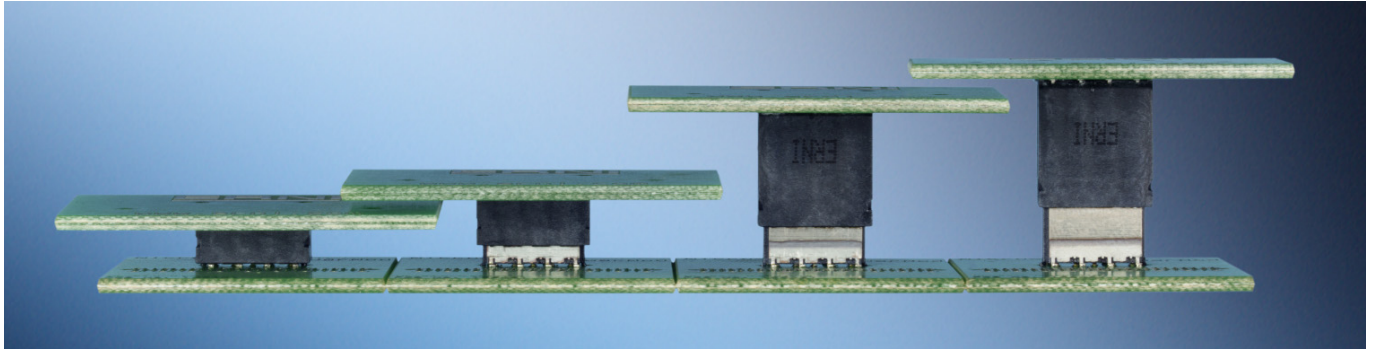
**Wipe length 1.5 mm / Board-to-Board distance 5-20 mm (including wipe length up to 21.5 mm)**

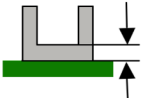



All dimensions in mm.

# MicroSpeed® Power Modules

## Board-to-Board Height Configurations



 <b>Male</b>			 <b>Female</b>			
Height	Part Number SMD	Part Number THR	Height	Part Number SMD	Part Number THR	Boart-to-Board Height
1 mm	214357	214916	4 mm	214356	214912	5 mm
2 mm	214550	214917	4 mm	214356	214912	6 mm
1 mm	214357	214916	6 mm	214547	214913	7 mm
2 mm	214550	214917	6 mm	214547	214913	8 mm
1 mm	214357	214916	8 mm	214548	214914	9 mm
2 mm	214550	214917	8 mm	214548	214914	10 mm
1 mm	214357	214916	10 mm	214549	214915	11 mm
2 mm	214550	214917	10 mm	214549	214915	12 mm
9 mm	214551	214918	4 mm	214356	214912	13 mm
10 mm	214552	214919	4 mm	214356	214912	14 mm
9 mm	214551	214918	6 mm	214547	214913	15 mm
10 mm	214552	214919	6 mm	214547	214913	16 mm
9 mm	214551	214918	8 mm	214548	214914	17 mm
10 mm	214552	214919	8 mm	214548	214914	18 mm
9 mm	214551	214918	10 mm	214549	214915	19 mm
10 mm	214552	214919	10 mm	214549	214915	20 mm

# MicroSpeed® Power Modules

## Electrical and Mechanical Characteristics

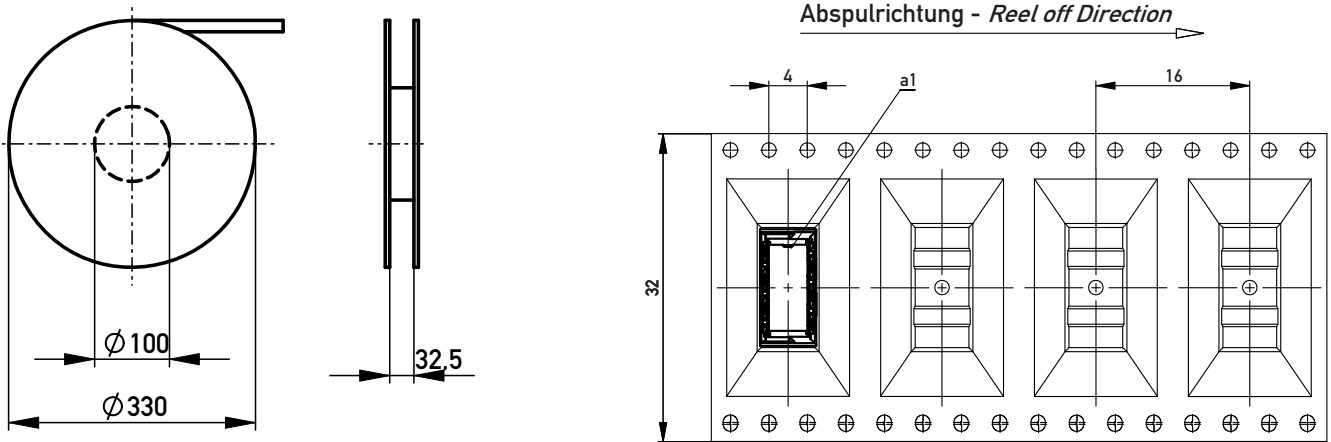
	Standard	Male Connectors	Female Connectors		
Number of Pins		5	5		
<b>Technical data</b>					
Climate category	DIN EN 60068-1 test b	-55/125/56		-55/125/56	
Temperature range		-55/125 °C		-55/125 °C	
Current rating		20 °C	70 °C	100 °C	
		per contact	6.6 A	5.0 A	3.4 A
		shields parallel	10.0 A	7.2 A	4.8 A
Air – and creepage distance		contact - contact 1.5 mm contact - ground 0.9 mm	contact - contact 1.5 mm contact - ground 0.9 mm		
Voltage rating	IEC60664	The permissible operating voltages depend 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 test 4a	contact - contact 750 V <sub>rms</sub> contact - shield 750 V <sub>rms</sub>	contact - contact 750 V <sub>rms</sub> contact - shield 750 V <sub>rms</sub>		
Contact resistance	IEC 60512 test 2a	≤ 4 mΩ	≤ 4 mΩ		
Insulation resistance	IEC 60512 test 3a	≥ 10 <sup>4</sup> MΩ	≥ 10 <sup>4</sup> MΩ		
Vibration, sine	IEC 60512 test 6d	10 - 2000 Hz 20 g	10 - 2000 Hz 20 g		
Contact disturbance (while vibration test)	IEC 60512 test 2e	≤ 1 μs	≤ 1 μs		
Shock, halvesine	IEC 60512 test 6c	50 g 11 ms	50 g 11 ms		
Contact disturbance (while shock test)	IEC 60512 test 2e	≤ 1μs	≤ 1μs		
Mechanical operation (mating cycles)	IEC 60512 test 9a	≥ 500 mating cycles	≥ 500 mating cycles		
Insertion and withdrawal force	IEC 60512 test 13b	≤ 20 N	≤ 20 N		
Gauge retention force	IEC 60512 test 16e	≥ 0.5 N	≥ 0.5 N		

## MicroSpeed® Power Modules

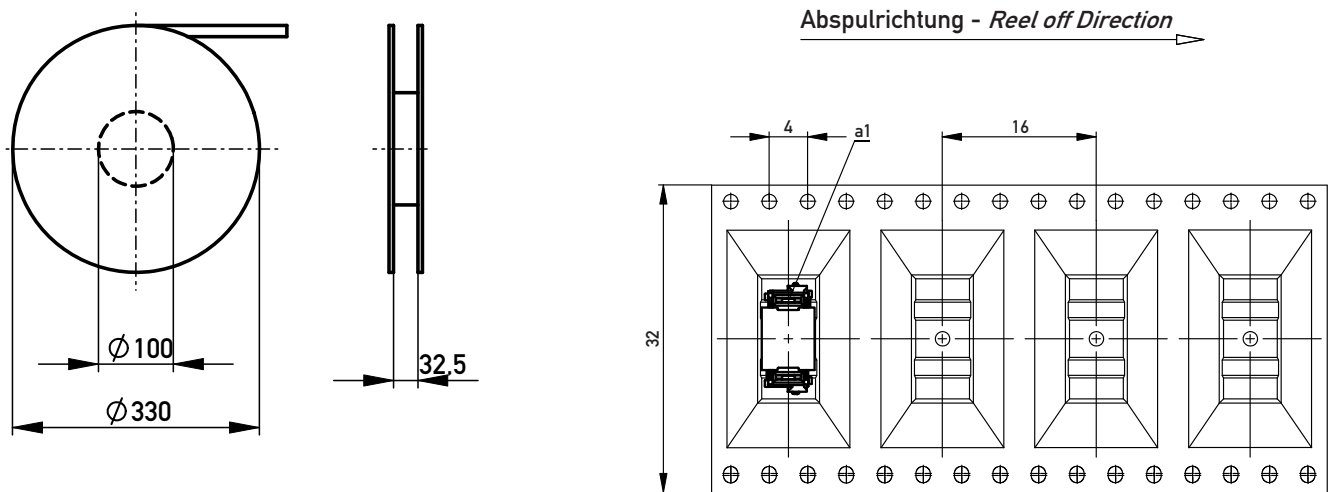
### Electrical and Mechanical Characteristics

	Standard	Male Connectors	Female Connectors
Number of Pins		5	5
<b>Process-conditions</b>			
Soldering temperature max.	IEC 68-2-20		
Hand soldering temperature max.		3.5 s at 350 °C	3.5 s at 350 °C
Dip soldering temperature max.		10 s at 260 °C	10 s at 260 °C
Reflow soldering temperature max.	JEDEC J-STD-020C	20 - 40 s at 260 °C	20 - 40 s at 260 °C
Coplanarity		< 0.1 mm	< 0.1 mm
<b>Housing Materials</b>			
Plastic material		LCP	LCP
CTI value	IEC 60112	175	175
UL flame rating		UL 94 V-0	UL 94 V-0
UL file		E83005	E83005
<b>Contact Materials</b>			
Base material		Cu alloy	Cu alloy
Mating area		gold plating	gold plating
Termination area		Sn	Sn
<b>Environment compatibility</b>			
Recycling		no flame-retardent additives, no toxic additives allows easy recycling	

Male Connectors



Female Connectors



All dimensions in mm.

# MicroSpeed® Power Modules

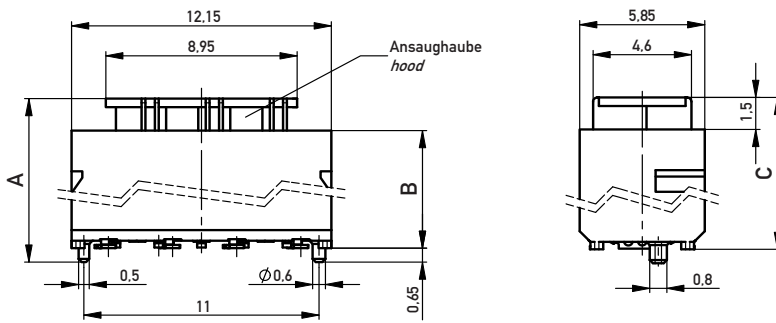
## Male Connectors



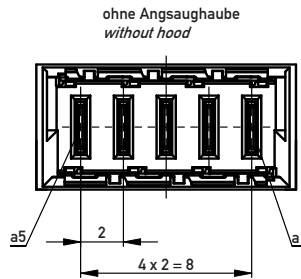
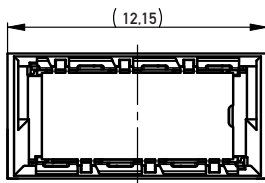
- Current carrying capacity up to 10 A for both shields
- Current up to 6.6 A (20°) per pin
- Partial contact loading is possible
- Board-to-Board heights 5-20 mm
- Shield contacts available as SMT or THR version

### Dimensional Drawing

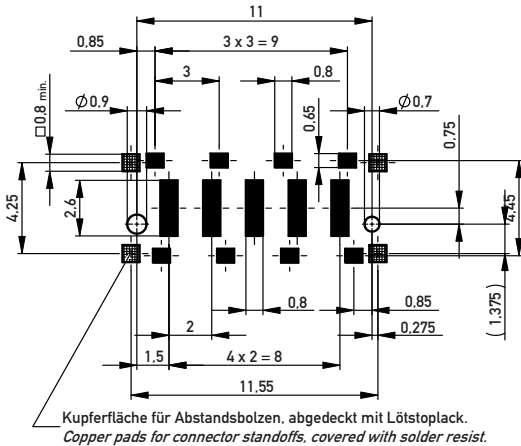
#### Connectors with SMT Ground Pins



1 mm	6.95	4.80	6.30
2 mm	7.95	5.80	7.30
9 mm	14.95	12.80	14.30
10 mm	15.95	13.80	15.30
Steckhöhe Stacking Height	A	B	C



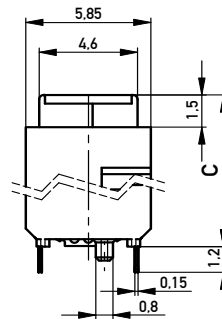
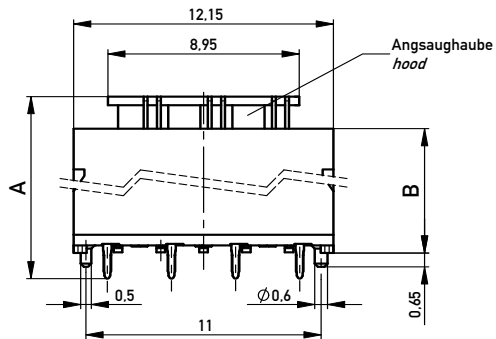
#### Leiterplatten-Layout / PCB-Layout



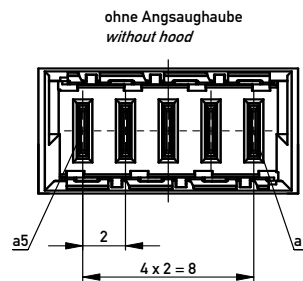
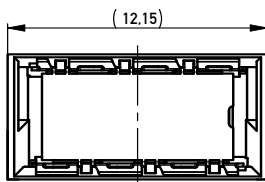
All dimensions in mm.

Dimensional Drawing

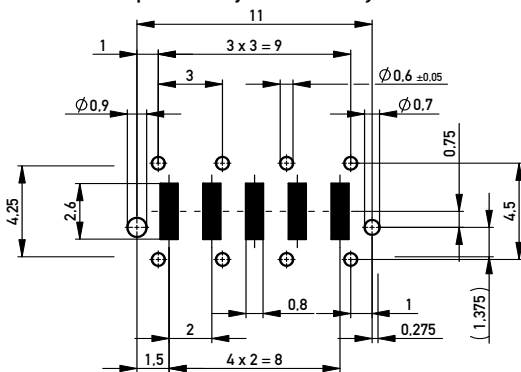
Connectors with THR Ground Pins



4 mm	6,60	5,40	3,80
6 mm	8,60	7,40	5,80
8 mm	10,60	9,40	7,80
10 mm	12,60	11,40	9,80
Steckhöhe Stacking Height	A	B	C



Leiterplatten-Layout / PCB-Layout

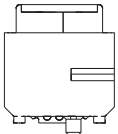
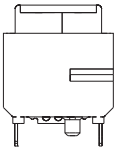

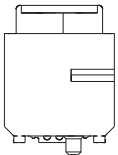
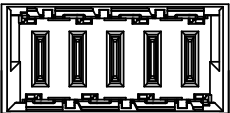


All dimensions in mm.

# MicroSpeed® Power Modules

## Male Connectors

### Ordering Information

Number of Pins	Termination	Unmated Stacking Height	Packaging	Part Number
				
5	SMT	1 mm	Tape&Reel/420 pcs	<b>214357</b>
				
5	SMT/THR	1 mm	Tape&Reel/420 pcs	<b>214916</b>
				
5	SMT	2 mm	Tape&Reel/420 pcs	<b>214550</b>
				
5	SMT/THR	2 mm	Tape&Reel/420 pcs	<b>214917</b>

**Ordering Information**

Number of Pins	Termination	Unmated Stacking Height	Packaging	Part Number
5	SMT	9 mm	Tape&Reel/240 pcs	<b>214551</b>
5	SMT/THR	9 mm	Tape&Reel/240 pcs	<b>214918</b>
5	SMT	10 mm	Tape&Reel/240 pcs	<b>214552</b>
5	SMT/THR	10 mm	Tape&Reel/240 pcs	<b>214919</b>

# MicroSpeed® Power Modules

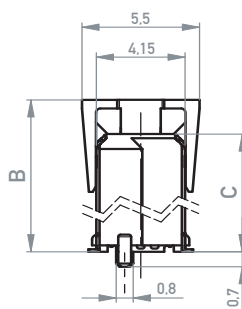
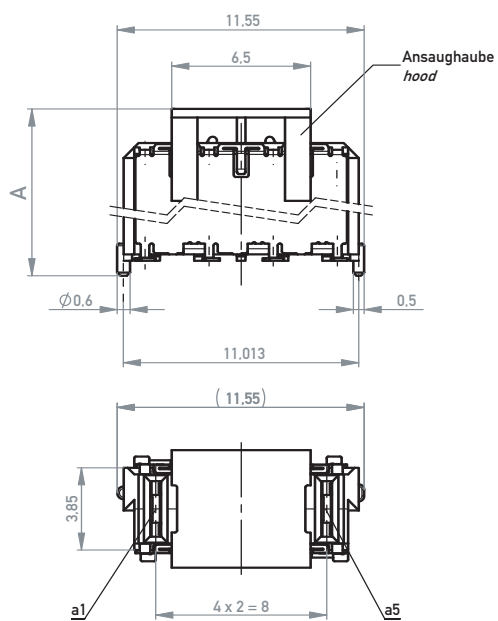
## Female Connectors



- Current carrying capacity up to 10 A for both shields
- Current up to 6.6 A (20°) per pin
- Partial contact loading is possible
- Board-to-Board heights 5-20 mm
- Shield contacts available as SMT or THR version

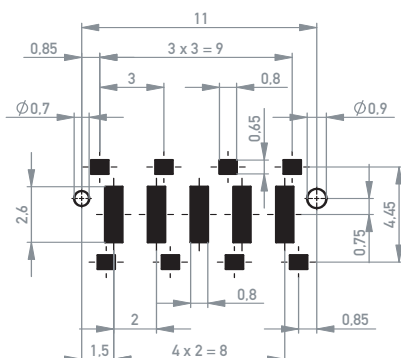
### Dimensional Drawing

#### Connectors with SMT Ground Pins



4 mm	6.10	5.40	3.80
6 mm	8.10	7.40	5.80
8 mm	10.10	9.40	7.80
10 mm	12.10	11.40	9.80
Steckhöhe Stacking Height	A	B	C

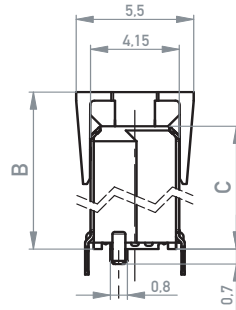
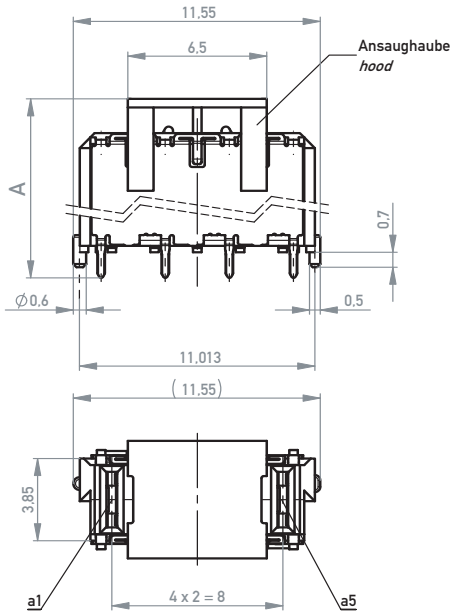
#### Leiterplatten-Layout / PCB-Layout



All dimensions in mm.

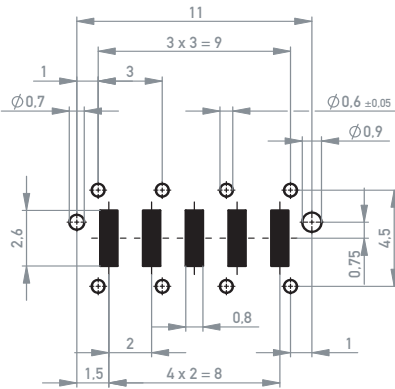
**Dimensional Drawing**

**Connectors with THR Ground Pins**



4 mm	6.60	5.40	3.80
6 mm	8.60	7.40	5.80
8 mm	10.60	9.40	7.80
10 mm	12.60	11.40	9.80
Steckhöhe Stacking Height	A	B	C

**Leiterplatten-Layout / PCB-Layout**

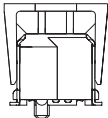


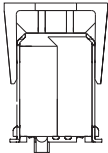

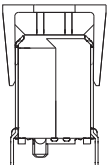


All dimensions in mm.

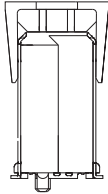
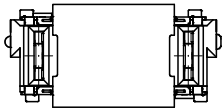
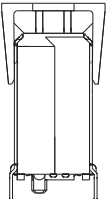

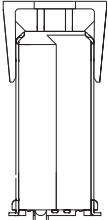
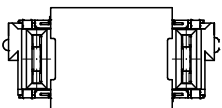
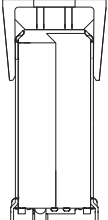
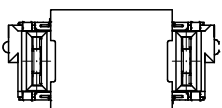
# MicroSpeed® Power Modules

## Female Connectors

### Ordering Information

Number of Pins	Termination	Unmated Stacking Height	Packaging	Part Number
				
5	SMT	4 mm	Tape&Reel/420 pcs	<b>214356</b>
				
5	SMT/THR	4 mm	Tape&Reel/420 pcs	<b>214912</b>
				
5	SMT	6 mm	Tape&Reel/420 pcs	<b>214547</b>
				
5	SMT/THR	6 mm	Tape&Reel/420 pcs	<b>214913</b>

Ordering Information

Number of Pins	Termination	Unmated Stacking Height	Packaging	Part Number
				
5	SMT	8 mm	Tape&Reel/300 pcs	<b>214548</b>
				
5	SMT/THR	8 mm	Tape&Reel/300 pcs	<b>214914</b>
				
5	SMT	10 mm	Tape&Reel/300 pcs	<b>214549</b>
				
5	SMT/THR	10 mm	Tape&Reel/300 pcs	<b>214915</b>

# MicroSpeed® Power Modules

## Part Number Index

Part Number	Page
214356 .....	14
214357 .....	10
214547 .....	14
214548 .....	15
214549 .....	15
214550 .....	10
214551 .....	11
214552 .....	11
214912 .....	14
214913 .....	14
214914 .....	15
214915 .....	15
214916 .....	10
214917 .....	10
214918 .....	11
214919 .....	11



Member





**ERNI Electronics GmbH**

Seestrasse 9  
73099 Adelberg, Germany  
Tel +49 7166 50-0  
Fax +49 7166 50-282  
info@erni.de

Europe South America Africa Japan

**ERNI Electronics, Inc.**

2201 Westwood Ave  
Richmond, VA 23230  
Tel +1 804 228-4100  
Fax +1 804 228-4099  
info.usa@erni.com

North America Canada Mexico

**ERNI Asia Holding Pte Ltd.**

Blk 4008 Ang Mo Kio Avenue 10  
#04-01/02 Techplace I  
Singapore 569625  
Tel +65 6 555 5885  
Fax +65 6 555 5995  
info@erni-asia.com

Asia

[www.erni.com](http://www.erni.com)

© ERNI Electronics GmbH 2008 • Printed in Germany. A policy of continuous improvement is followed and the right to alter any published data without notice is reserved.  
ERNI®, MicroStac®, MicroSpeed®, MiniBridge®, MaxiBridge®, ERmet®, ERmet ZD®, ERbic® and ERNIPRESS® are trademarks (registered or applied for in various countries) of ERNI Electronics GmbH.