

# Specification for release

Customer : **Preliminary**  
 Order Code : **8492121**  
 Description : **WE-USBH Connector with Integrated EMI & ESD function**  
 Package: **USB2.0 Type A THT**



Date: 2014-03-13

## A Features:

- ESD Protection of data channels and VDD
- Common Mode Noise Rejection
- VDD Differential Mode Noise Rejection
- Provides ESD protection for each channel to  
 IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
 IEC 61000-4-4 (EFT) (5/50ns) 20A (I/O), 40A VDD  
 IEC 61000-4-5 (Lightning) 6A (8/20 $\mu\text{s}$ )
- Ultra Low capacitance: 2pF typical
- Fast turn on and low clamping voltage

## B Overview:



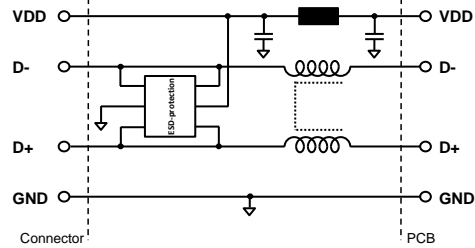
## C Maximum Ratings:

Operating Supply Voltage	$V_{DD} - \text{GND}$	$V_{DC}$	6	V
ESD per IEC 61000-4-2 (Air / Contact)	D+/D- - GND	$V_{ESD,D+/D-}$	16 / 10	kV
ESD per IEC 61000-4-2 (Air / Contact)	$V_{DD} - \text{GND}$	$V_{ESD,VDD}$	30 / 20	kV
Operating Temperature		$T_{Op}$	-40 to +85	°C
Storage Temperature		$T_{Sto}$	-20 to +60	°C

## D Material Characteristics:

Insulator	LCP UL-94V0
Color	Black
Contact	Phosphor Bronze
Contact Area Plating	Gold
Shielding	Brass
Mating Force / Unmating Force	35 N / 10 N
Quality Class	1500 Mating Cycles

## E Schematic:



## F Electrical Characteristics:

Characteristics		test conditions	tolerance	value	unit
Common Mode Impedance	D+/D-	Z	100MHz	$\pm 25\%$	90 $\Omega$
Differential Mode Impedance	$V_{DD} - \text{GND}$	$Z_{VDD}$	100MHz	$\pm 25\%$	400 $\Omega$
DC Resistance <sup>1</sup>	$V_{DD}$	$R_{DC}$	@ 20 °C	max.	150 m $\Omega$
DC Resistance <sup>1</sup>	D+/D-	$R_{DC}$	@ 20 °C	max.	180 m $\Omega$
Rated Voltage	$V_{DD}$	$V_{DD}$		max.	5 V
Breakdown Voltage <sup>2</sup>	$V_{DD} - \text{GND}$	$V_{BV}$	$I_{BV}=1\text{mA}$	min.	6 V
Low Level Contact Resistance <sup>1</sup>		$R_{CR}$		max.	30 m $\Omega$
Insertion Capacitance <sup>2</sup>	D+/D- - GND	$C_{IO}$	f=1MHz	typ.	2 pF

<sup>1</sup>) Resistance PCB-pin to connector-pin consists of  $R_{DC} + R_{CR}$

<sup>2</sup>) TVS-Diode Array Specification figures

Approval/Release:	<b>Kunde / customer</b>			
.....	.....			
Datum / date	Unterschrift / signature			
	<b>Würth Elektronik</b>			
.....	.....			
Geprüft / checked	Kontrolliert / approved	Mle	Test-Version 2	2014-03-14
		OO	Test-Version	2011-01-27
		Name	Änderung / modification	Datum / date

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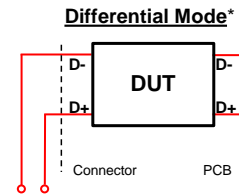
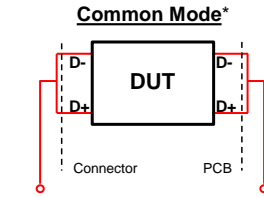
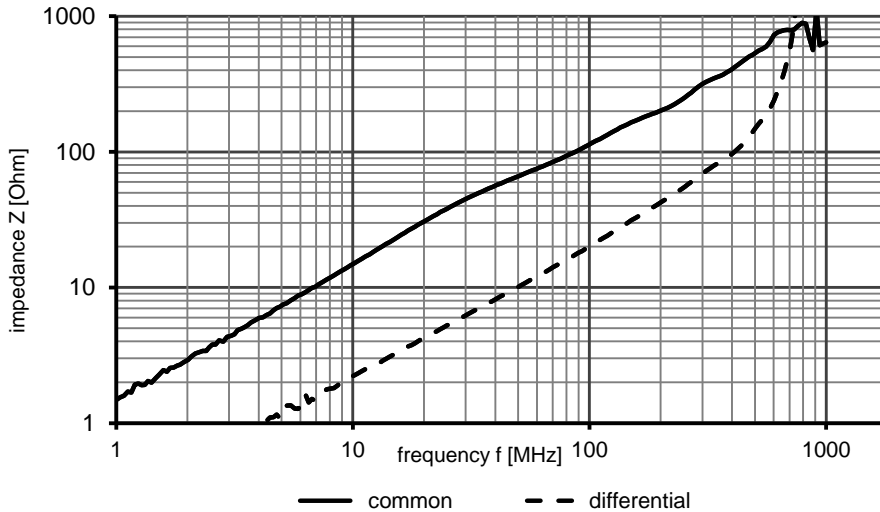
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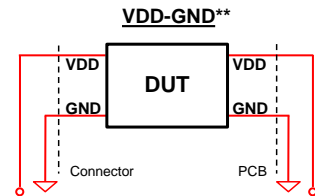
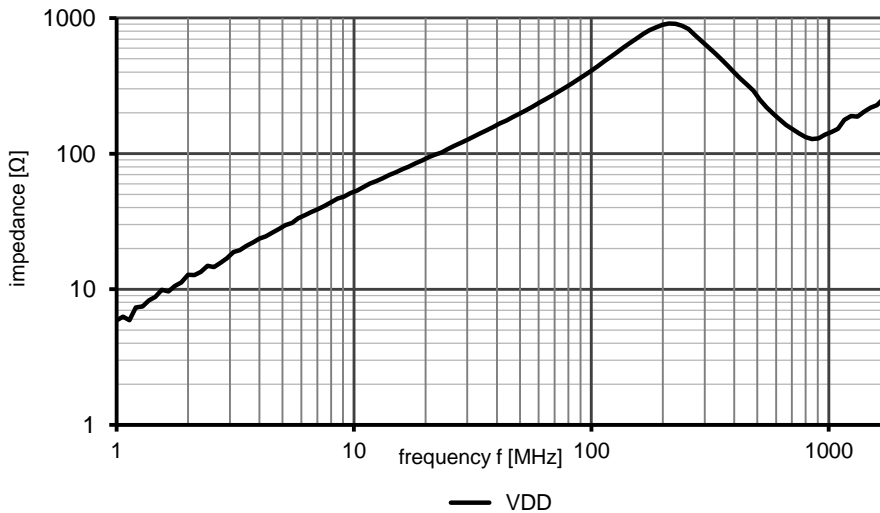
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## G1 Impedance graph D+/D- (typical)



\* 50Ω system impedance measured on PCB level

## G2 Impedance graph V<sub>DD</sub> - GND (typical)



\*\* 50Ω system impedance measured on PCB level

### H Test Equipment:

HP4191B for Z and a  
 GMC Metrahit 27I for R<sub>DC</sub>  
 Agilent E4991A for SRF

### J Test Conditions:

Humidity: 33%  
 Ambient temperature: +20°C

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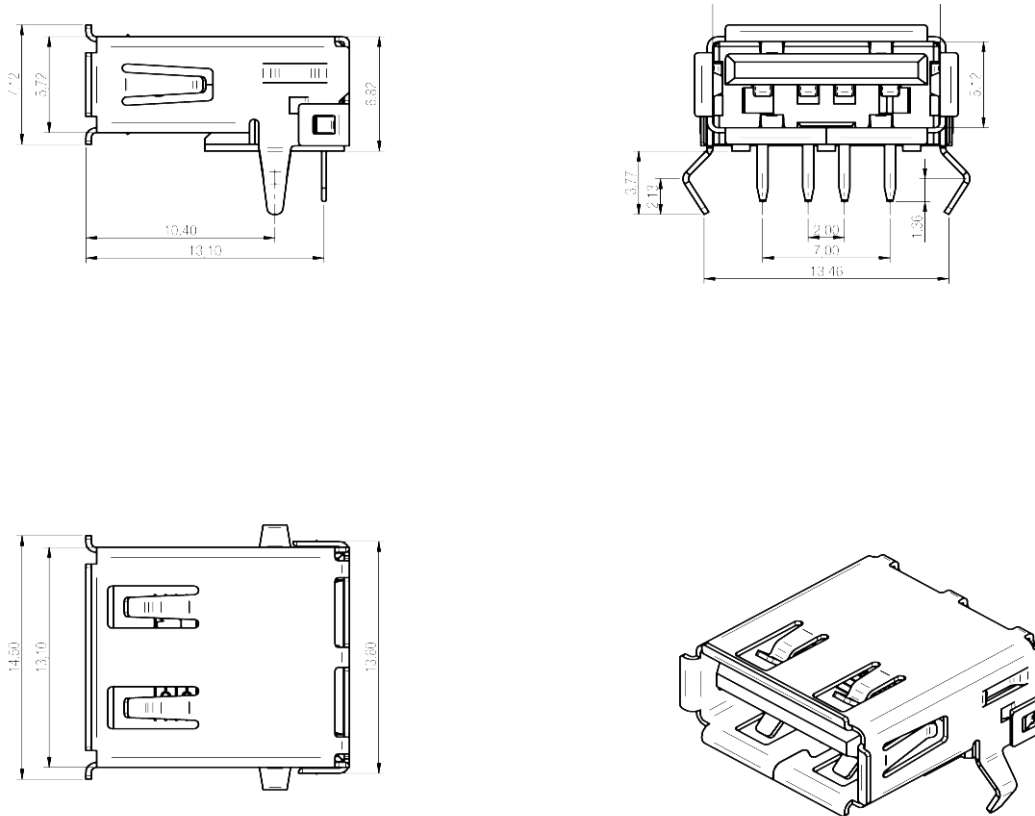
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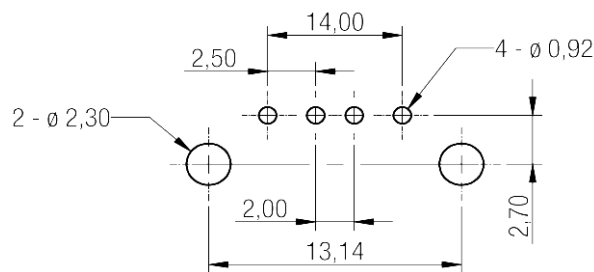


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## K Dimensions:



## L Recommended Land Pattern:



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This electronic component has been designed and developed for usage in general electronic equipment. Before incorporating this component into any equipment where higher safety and reliability is especially required or if there is the possibility of direct damage or injury to human body, for example in the range of aerospace, aviation, nuclear control, submarine, transportation, (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc. Würth Elektronik eiSos GmbH must be informed before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

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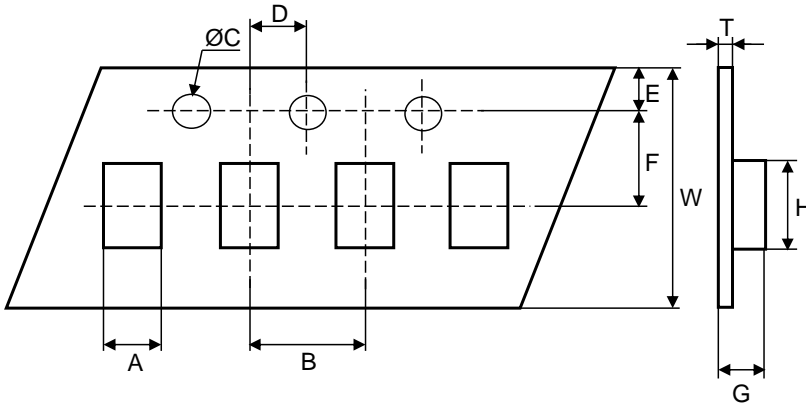
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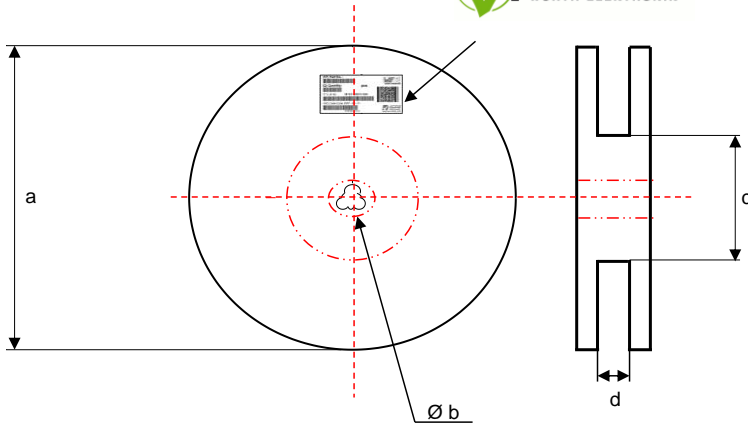


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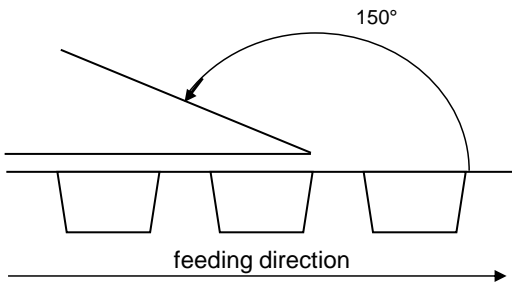
**M Tape & Reel specifications:**



Gurtspezifikation / Tape specification:		
A	1,42 ± 0,1	mm
B	4,00 ± 0,1	mm
C	1,50 ± 0,05	mm
D	2,00 ± 0,1	mm
E	1,75 ± 0,1	mm
F	3,50 ± 0,1	mm
G	1,30 ± 0,1	mm
H	2,26 ± 0,1	mm
T	0,23 ± 0,05	mm
W	8,00 ± 0,1	mm



Rollenspezifikation / Reel Specification:		
a	178,0 ± 0,1	mm
b	21,00 ± 0,1	mm
c	50,00 ± 0,1	mm
d	10,00 ± 0,1	mm



The force of tearing off cover tape is 0,2 to 0,7 N in arrow direction.

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