BWCU 02 Series For USB 2.0, IEEE1394b, LVDS Applications



A full series of common mode choke is designed for excellent noise attenuation with compact sizing for use in wide range of applications. Both standard series and custom designs are available.

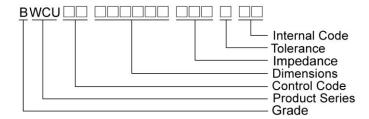
Features

- RoHS Compliant
- Miniature SMD type common mode filter for fully automated assembly
- Wide impedance range $(30\Omega \sim 2200\Omega)$ for noise suppression
- Excellent solderability

Applications

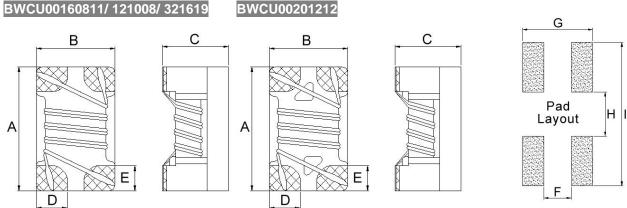
- USB line for personal computers and peripheral
- IEEE 1394 line for personal computers, DVC, STB
- LVDS, panel line for liquid display panels, graph card,etc.

Product Identification



Shape and Dimensions

Recommended Pattern

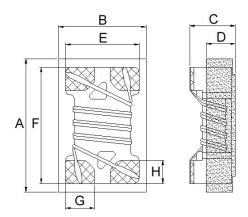


| TYPE | Α | В | С | D | E | F | G | Н | 1 |
|--------------|----------|----------|----------|------|------|------|------|------|------|
| BWCU00160811 | 1.60±0.2 | 0.80±0.2 | 1.10±0.2 | 0.25 | 0.33 | 0.25 | 0.75 | 0.61 | 2.29 |
| BWCU00121008 | 1.25±0.2 | 1.00±0.2 | 0.8±0.1 | 0.32 | 0.33 | 0.36 | 1.00 | 0.59 | 1.75 |
| BWCU00201212 | 2.05±0.2 | 1.25±0.2 | 1.20±0.2 | 0.50 | 0.40 | 0.50 | 1.27 | 0.80 | 2.60 |
| BWCU00321619 | 3.20±0.2 | 1.60±0.2 | 1.90±0.2 | 0.50 | 0.60 | 0.40 | 1.60 | 1.60 | 3.70 |

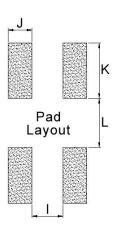


Shape and Dimensions

BWCU00231512



Recommended Pattern



| TYPE | Α | В | С | D | E | F | G | Н | I | J | K | L |
|--------------|--------|--------|--------|-----|------|------|-----|------|-----|------|-----|-----|
| BWCU00231512 | 2.29+0 | 1.52+0 | 1.20+0 | 0.5 | 1.27 | 2.03 | 0.5 | 0.40 | 0.5 | 0.38 | 0.9 | 0.8 |

Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | Irms (mA) Max | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (M Ω) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|------------------|---------------------------|-------------------------------|---|
| BWCU00160811250M02 | 25 | 20,25 | 100 | 0.077 | 500 | 50 | 125 | 10 |
| BWCU00160811600M02 | 60 | 20,25 | 100 | 0.109 | 500 | 50 | 125 | 10 |
| BWCU00160811900M02 | 90 | 20,25 | 100 | 0.142 | 500 | 50 | 125 | 10 |
| BWCU00160811121M02 | 120 | 20,25 | 100 | 0.160 | 500 | 50 | 125 | 10 |
| BWCU00160811141M02 | 140 | 20,25 | 100 | 0.174 | 500 | 50 | 125 | 10 |
| BWCU00160811221M02 | 220 | 20,25 | 100 | 0.209 | 500 | 50 | 125 | 10 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20%, Y=±25%

- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- rms for 20°C rise from 25°C ambient

Measure Equipment :

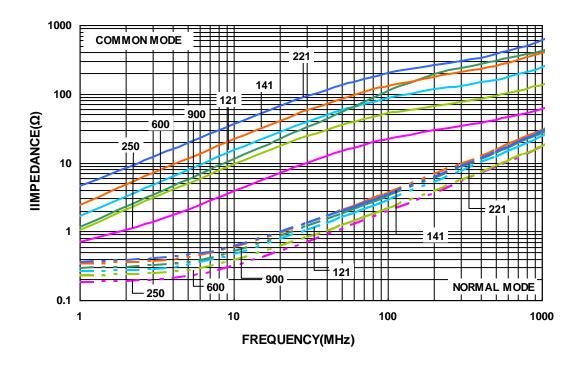
Z: Agilent HP4287A+Agilent 16197A

RDC: HP4338B or Chroma 16502 (Single Wire Test Value)

Irms: HP4284A+HP42841A/HP4285A+HP42841A

Insulation Resistance : Agilent HP4339B

Test Instruments: HP4287A Material/Impedance Analyzer





Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | IDC (mA) | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (M Ω) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|-------------|---------------------------|-------------------------------|---|
| BWCU00121008250T02 | 25 | 30 | 100 | 0.30 | 400 | 50 | 125 | 100 |
| BWCU00121008600M02 | 60 | 20 | 100 | 0.40 | 300 | 50 | 125 | 100 |
| BWCU00121008670M02 | 67 | 20 | 100 | 0.25 | 300 | 50 | 125 | 100 |
| BWCU00121008900M02 | 90 | 20 | 100 | 0.30 | 250 | 50 | 125 | 100 |
| BWCU00121008121M02 | 120 | 20 | 100 | 0.40 | 200 | 50 | 125 | 100 |
| BWCU00121008161M02 | 160 | 20 | 100 | 0.43 | 160 | 50 | 125 | 100 |
| BWCU00121008201M02 | 200 | 20 | 100 | 0.80 | 120 | 50 | 125 | 100 |
| BWCU00121008331Y02 | 330 | 25 | 100 | 1.30 | 100 | 50 | 125 | 100 |

Note: When ordering, please specify tolerance code. Tolerance: M= $\pm 20\%$, Y= $\pm 25\%$, T= $\pm 30\%$

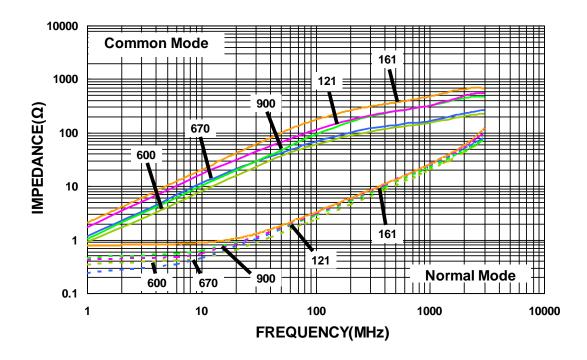
- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- IDC for Inductance drop 10% from its value without current
- Measure Equipment :

Z: Agilent HP4287A+Agilent 16197A

RDC: Chroma 16502 (Single Wire Test Value)
IDC: HP4284A+HP42841A/HP4285A+HP42841A

Insulation Resistance : Agilent HP4339B

Test Instruments: HP4287A Material/Impedance Analyzer





Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | IDC (mA) | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (M Ω) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|-------------|---------------------------|-------------------------------|---|
| BWCU00201212300M02 | 30 | 20 | 100 | 0.20 | 450 | 50 | 125 | 10 |
| BWCU00201212670M02 | 67 | 20 | 100 | 0.25 | 400 | 50 | 125 | 10 |
| BWCU00201212750M02 | 75 | 20 | 100 | 0.30 | 360 | 50 | 125 | 10 |
| BWCU00201212900M02 | 90 | 20 | 100 | 0.35 | 330 | 50 | 125 | 10 |
| BWCU00201212121M02 | 120 | 20 | 100 | 0.30 | 400 | 50 | 125 | 10 |
| BWCU00201212161M02 | 160 | 20 | 100 | 0.35 | 350 | 50 | 125 | 10 |
| BWCU00201212181M02 | 180 | 20 | 100 | 0.35 | 330 | 50 | 125 | 10 |
| BWCU00201212201M02 | 200 | 20 | 100 | 0.35 | 330 | 50 | 125 | 10 |
| BWCU00201212221M02 | 220 | 20 | 100 | 0.35 | 310 | 50 | 125 | 10 |
| BWCU00201212261M02 | 260 | 20 | 100 | 0.40 | 300 | 50 | 125 | 10 |
| BWCU00201212301M02 | 300 | 20 | 100 | 0.40 | 290 | 50 | 125 | 10 |
| BWCU00201212361M02 | 360 | 20 | 100 | 0.45 | 280 | 50 | 125 | 10 |
| BWCU00201212371M02 | 370 | 20 | 100 | 0.45 | 280 | 50 | 125 | 10 |
| BWCU00201212501M02 | 500 | 20 | 100 | 0.55 | 170 | 50 | 125 | 10 |
| BWCU00201212671M02 | 670 | 20 | 100 | 0.60 | 140 | 50 | 125 | 10 |
| BWCU00201212901M02 | 900 | 20 | 100 | 0.60 | 80 | 50 | 125 | 10 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

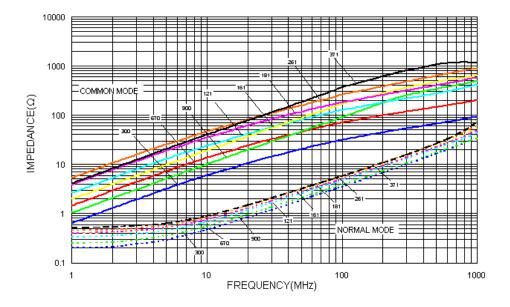
- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- IDC for Inductance drop 10% from its value without current
- Measure Equipment :

Z: Agilent HP4287A+Agilent 16197A

RDC: Chroma 16502 (Single Wire Test Value)
IDC: HP4284A+HP42841A/HP4285A+HP42841A

Insulation Resistance : Agilent HP4339B

Test Instruments: HP4291A Material/Impedance Analyzer





Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | IDC (mA) | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (MΩ) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|-------------|---------------------------|-------------------------------|--------------------------------------|
| BWCU00321619900M02 | 90 | 20 | 100 | 0.3 | 370 | 50 | 125 | 10 |
| BWCU00321619121M02 | 120 | 20 | 100 | 0.3 | 370 | 50 | 125 | 10 |
| BWCU00321619161M02 | 160 | 20 | 100 | 0.4 | 340 | 50 | 125 | 10 |
| BWCU00321619221M02 | 220 | 20 | 100 | 0.4 | 320 | 50 | 125 | 10 |
| BWCU00321619261M02 | 260 | 20 | 100 | 0.5 | 310 | 50 | 125 | 10 |
| BWCU00321619601M02 | 600 | 20 | 100 | 0.8 | 260 | 50 | 125 | 10 |
| BWCU00321619102M02 | 1000 | 20 | 100 | 1.0 | 230 | 50 | 125 | 10 |
| BWCU00321619222M02 | 2200 | 20 | 100 | 1.2 | 200 | 50 | 125 | 10 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

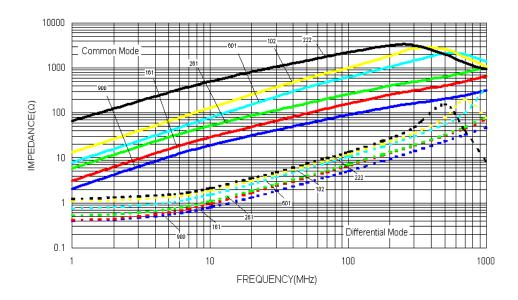
- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- IDC for Inductance drop 10% from its value without current
- Measure Equipment :

Z: Agilent HP4287A+Agilent 16197A

RDC: Chroma 16502 (Single Wire Test Value)
IDC: HP4284A+HP42841A/HP4285A+HP42841A

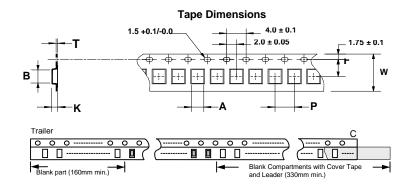
Insulation Resistance : Agilent HP4339B

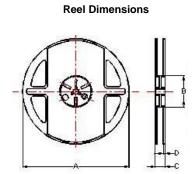
Test Instruments: HP4291A Material/Impedance Analyzer





Packaging Specifications





| TYPE | | Tape Dimensions | | | | | | | | Reel Dimensions | | | |
|--------------|------|-----------------|------|---|---|-----|------|-----|----|-----------------|-----|------------|--|
| TIPE | Α | В | Т | W | Р | F | K | Α | В | С | D | PCS / Reel | |
| BWCU00160811 | 0.95 | 1.70 | 0.24 | 8 | 4 | 3.5 | 1.15 | 178 | 60 | 12 | 1.5 | 2000 | |
| BWCU00121008 | 1.15 | 1.45 | 0.24 | 8 | 4 | 3.5 | 1.00 | 178 | 60 | 12 | 1.5 | 2000 | |
| BWCU00201212 | 1.50 | 2.25 | 0.24 | 8 | 4 | 3.5 | 1.35 | 178 | 60 | 12 | 1.5 | 2000 | |
| BWCU00321619 | 1.76 | 3.47 | 0.22 | 8 | 4 | 3.5 | 2.05 | 178 | 60 | 12 | 1.5 | 2000 | |
| BWCU00231512 | 1.60 | 2.42 | 0.26 | 8 | 4 | 3.5 | 1.14 | 178 | 60 | 12 | 1.5 | 2000 | |



BWCU 03 Series For HDMI, USB 3.0



A full series of common mode choke is designed for excellent noise attenuation and compact sizing for use in wide range of applications. Both standard series and custom designs are available.

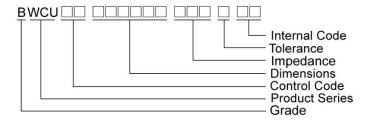
Features

- RoHS Compliant
- Miniature SMD type common mode filter for fully automated assembly •
- Excellent solderability

Applications

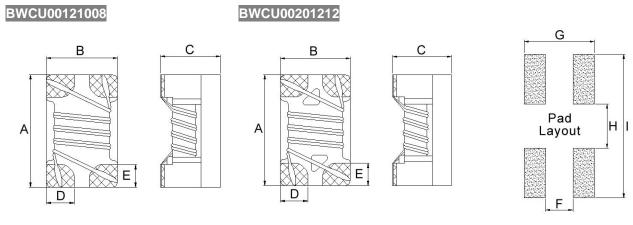
- HDMI
- USB lines (for personal computers and peripheral), DVC, STB, LVDS, panel line for liquid display panels, etc.

Product Identification



Shape and Dimensions

Recommended Pattern



| TYPE | Α | В | С | D | Е | F | G | Н | I |
|--------------|----------|----------|----------|------|------|------|------|------|------|
| BWCU00121008 | 1.25±0.2 | 1.00±0.2 | 0.80±0.1 | 0.32 | 0.33 | 0.36 | 1.00 | 0.59 | 1.75 |
| BWCU00201212 | 2.05±0.2 | 1.25±0.2 | 1.20±0.2 | 0.50 | 0.40 | 0.50 | 1.27 | 0.80 | 2.60 |



Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | IDC (mA) Max | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (M Ω) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|-----------------|---------------------------|-------------------------------|---|
| BWCU00121008220Y03 | 22 | 25 | 100 | 0.20 | 400 | 50 | 125 | 100 |
| BWCU00121008600Y03 | 60 | 25 | 100 | 0.40 | 250 | 50 | 125 | 100 |
| BWCU00121008900Y03 | 90 | 25 | 100 | 0.30 | 250 | 50 | 125 | 100 |

Note: When ordering, please specify tolerance code. Tolerance: Y=±25%

- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- IDC for Inductance drop 10% from its value without current.
- Measure Equipment :

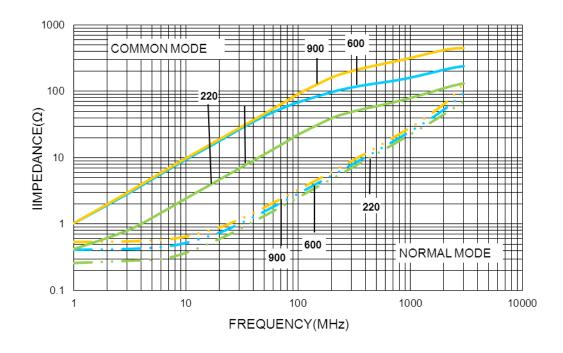
Z: HP4286A/HP4287A/Agilent E4991A+Agilent16197A

RDC: Chroma 16502 (Single Wire Test Value)

IDC: HP4284A+HP42841A/HP4285A+HP42841A

Insulation Resistance: Agilent HP4339B

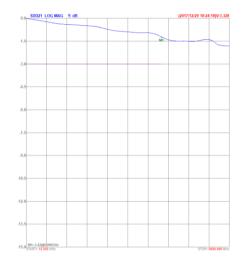
Test Instruments: HP4291A Material/Impedance Analyzer



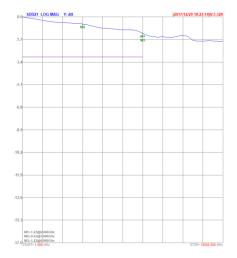


BWCU00121008220Y03

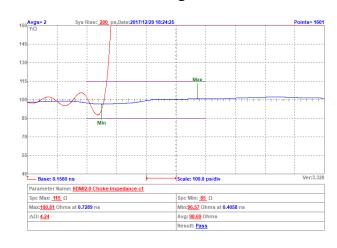
Insertion Loss For HDMI2.0 Testing:



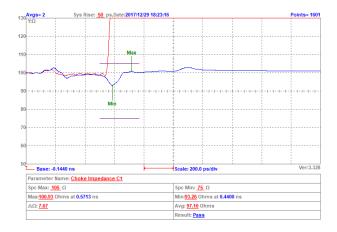
Insertion Loss For USB3.0 Testing:



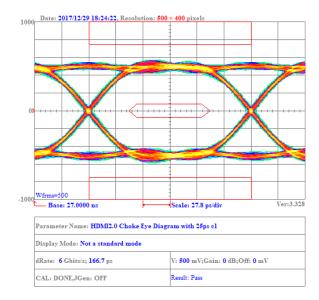
TDR For HDMI2.0 Testing:

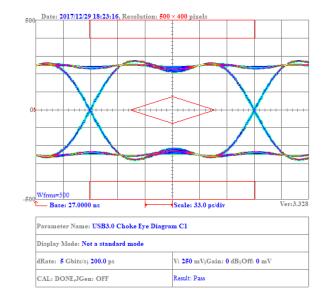


TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:

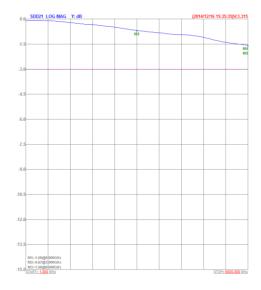




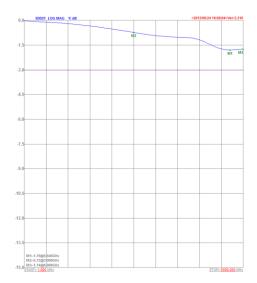


BWCU00121008600Y03

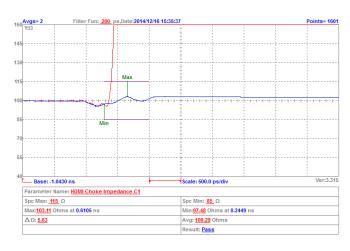
Insertion Loss For HDMI2.0 Testing:



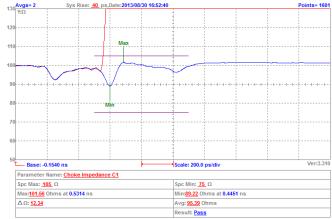
Insertion Loss For USB3.0 Testing:



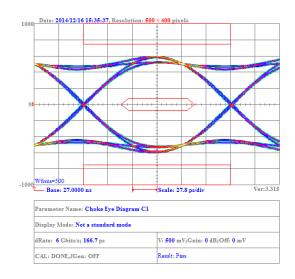
TDR For HDMI2.0 Testing:

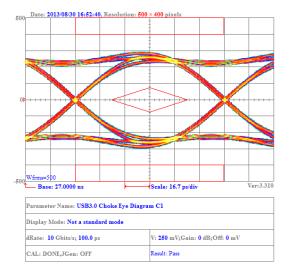


TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:

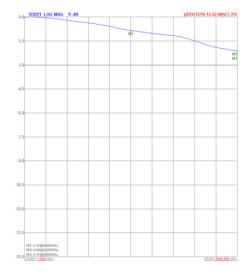




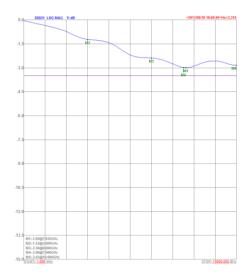


BWCU00121008900Y03

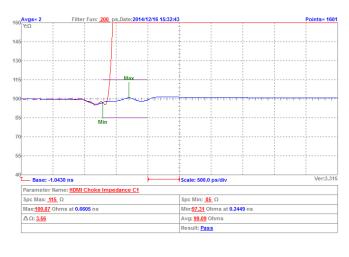
Insertion Loss For HDMI2.0 Testing:



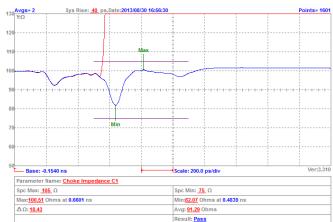
Insertion Loss For USB3.0 Testing:



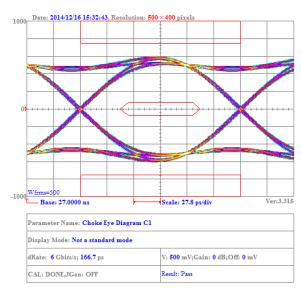
TDR For HDMI2.0 Testing:



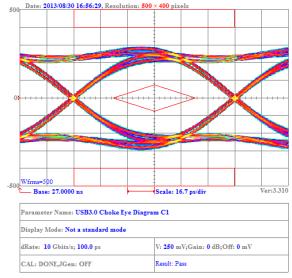
TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:



Eye Diagram For USB3.0 Testing:



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Electrical Characteristics

| Part Number | Impedance (Ω) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) Max | IDC (mA) Max | Rated Voltage (Vdc) | Withstamd Voltage (Vdc) | Insulation Resistance (M Ω) Min |
|--------------------|------------------|-------------------|----------------------------|----------------|-----------------|---------------------------|-------------------------------|---|
| BWCU00201212500Y03 | 50 | 25 | 100 | 0.20 | 500 | 50 | 125 | 10 |
| BWCU00201212670Y03 | 67 | 25 | 100 | 0.30 | 500 | 50 | 125 | 10 |
| BWCU00201212900Y03 | 90 | 25 | 100 | 0.30 | 500 | 50 | 125 | 10 |
| BWCU00201212121Y03 | 120 | 25 | 100 | 0.35 | 330 | 50 | 125 | 10 |
| BWCU00201212131Y03 | 130 | 25 | 100 | 0.40 | 300 | 50 | 125 | 10 |

Note: When ordering, please specify tolerance code. Tolerance: Y=±25%

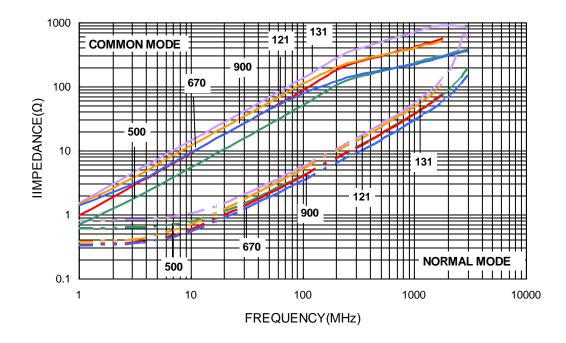
- Operating temperature range 40°C ~ 105°C(Including self temperature rise)
- IDC for Inductance drop 10% from its value without current.
- Measure Equipment :

Z: HP4286A/HP4287A/Agilent E4991A+Agilent16197A

RDC : Chroma 16502 (Single Wire Test Value) IDC : HP4284A+HP42841A/HP4285A+HP42841A

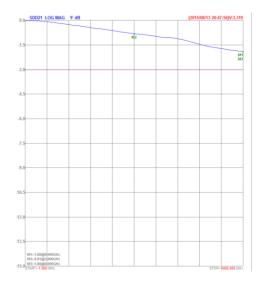
Insulation Resistance : Agilent HP4339B

Test Instruments: HP4291A Material/Impedance Analyzer

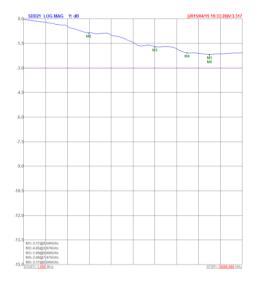


BWCU00201212500Y03

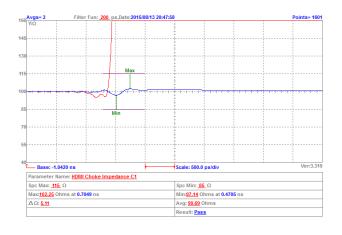
Insertion Loss For HDMI2.0 Testing:



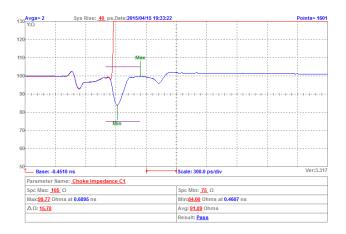
Insertion Loss For USB3.0 Testing:



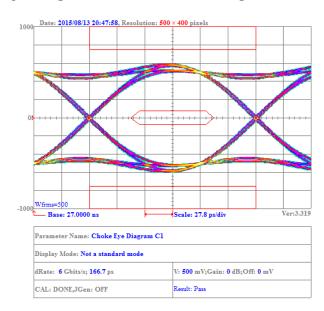
TDR For HDMI2.0 Testing:



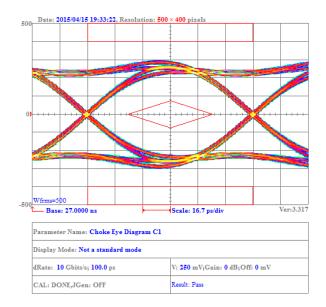
TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:



Eye Diagram For USB3.0 Testing:

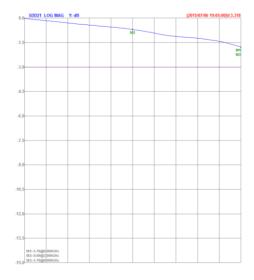


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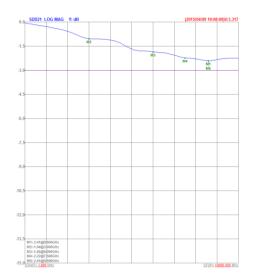


BWCU00201212670Y03

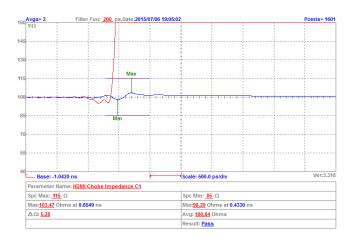
Insertion Loss For HDMI2.0 Testing:



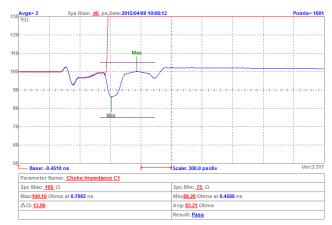
Insertion Loss For USB3.0 Testing:



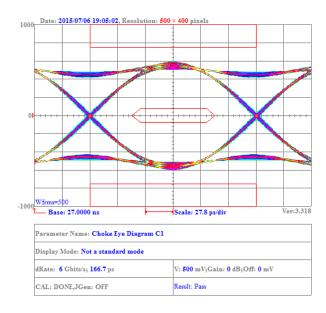
TDR For HDMI2.0 Testing:



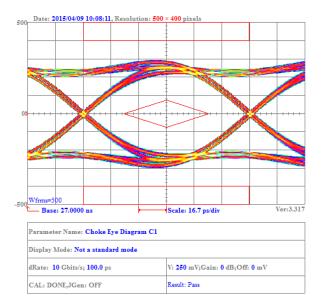
TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:



Eye Diagram For USB3.0 Testing:

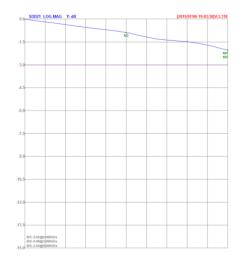


Please be sure to request approval specifications that provide further details of the products. Kindly note that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without Chilisin approval. Please contact our sales department before ordering.

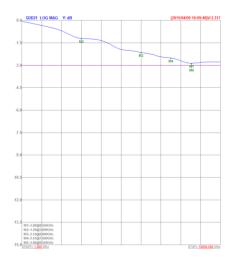


BWCU00201212900Y03

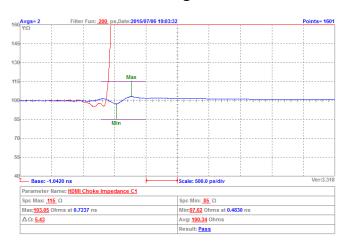
Insertion Loss For HDMI2.0 Testing:



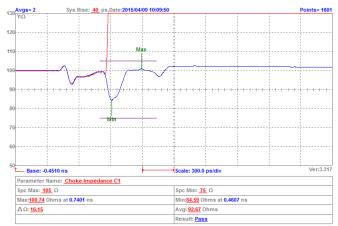
Insertion Loss For USB3.0 Testing:



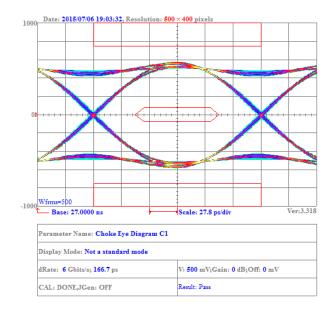
TDR For HDMI2.0 Testing:

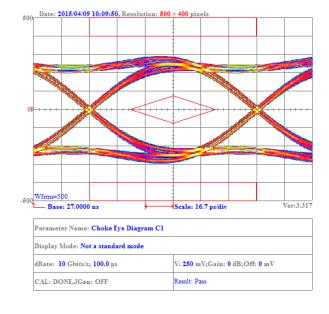


TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:



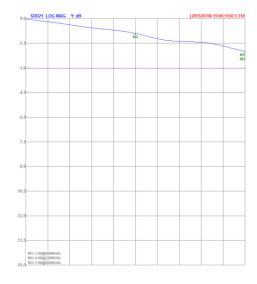




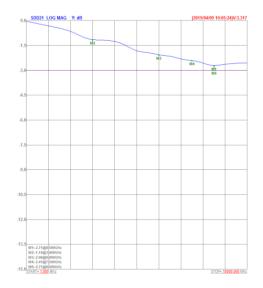


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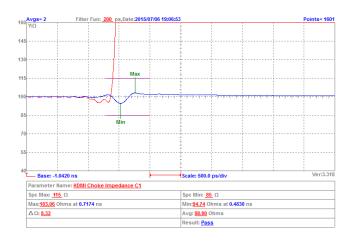
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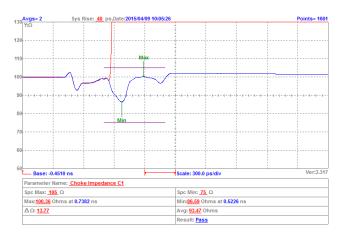
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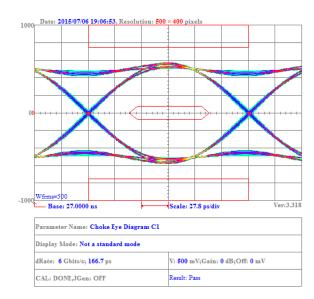
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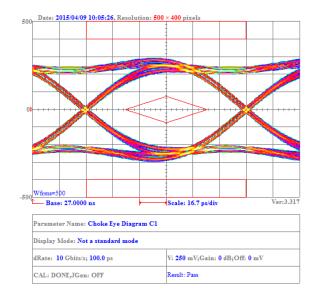


TDR For USB3.0 Testing:



Eye Diagram For HDMI2.0 Testing:



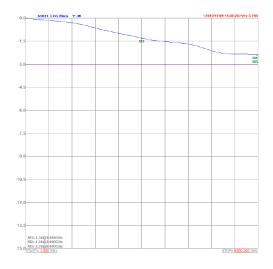




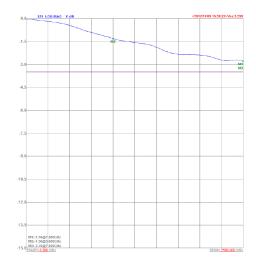


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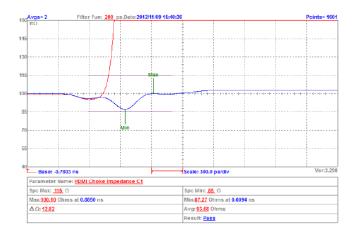
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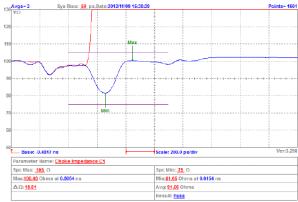
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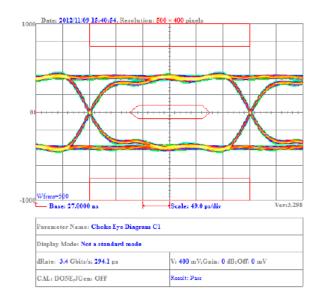
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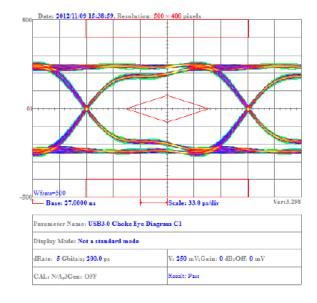


TDR For USB3.0 Testing:



Eye Diagram For HDMI Testing:

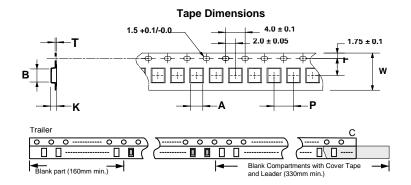


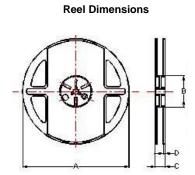






Packaging Specifications





| TVDE | Tape Dimensions | | | | | | | | Reel Din | Quantity | | |
|--------------|-----------------|------|------|---|---|-----|------|-----|----------|----------|-----|------------|
| TYPE | Α | В | Т | w | Р | F | K | Α | В | С | D | PCS / Reel |
| BWCU00121008 | 1.15 | 1.45 | 0.25 | 8 | 4 | 3.5 | 1.00 | 178 | 60 | 12 | 1.5 | 2000 |
| BWCU00201212 | 1.50 | 2.25 | 0.24 | 8 | 4 | 3.5 | 1.35 | 178 | 60 | 12 | 1.5 | 2000 |



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UAL21VR0802000 UALSC023000000 UALSC1020JH000 UALSU10VD20010 UALSU9VD070100 36-00037 CM7060M132R-10

UALW21HS072450 UALSU9H0208000 UAL24VK06450CH PLT10HH501100PNB PLT10HH401100PNB PLT10HH1026R0PNB PE-67531 TLH10UB 113 0R5 2752045447 CM8663Z161B-10 7351V CMF16-153131 T8116NLT CMS2-10-R FE2X10-4-2NL T8003NLT CTX01-13663 CTX66-19521-R RC212-0.5-10M RC112-0.4-15M RC212-0.6-6M8 RC212-0.4-15M RC112-0.3-30M 4534-3

WTCF2012Z0M751PB PH9408.814NLT B82498B3221J000 PAC6006.364NLT PAC6006.444NLT PAC6006.204NLT PH9407.204NLT PAC6006.264NLT PH9408.105NLT PH9408.494NLT PAC6006.104NLT