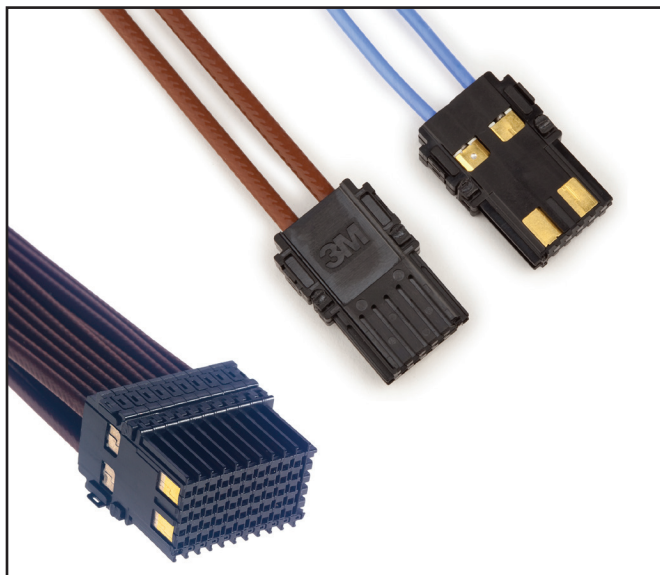


3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

2 mm 5×1 Column Stacked Wafers for Coax or Twin Axial Cable, Power

UHM Series



- Mates with Hard Metric/Compact PCI® IEC 61076-4-101 backplane connectors, UHM headers, HSHM headers
- Hard Metric 2 mm × 2 mm grid spacing
- Fully-shielded coaxial or twin axial interface
- Standard or custom wafer stacks
- Range of high performance cable - 50 Ω, 75 Ω coax, 85 Ω, 100 Ω twin axial
- Power wafer
- Semi-rigid stacking system reduces insertion force
- Mix-and-match custom options

Date Modified: October 15, 2010

TS-2364-A
Sheet 1 of 5

Physical

Connector/Insulation Material: LCP

Flammability: UL 94V-0

Connector Contact Material: Copper alloy

Plating:

Underplating: 100 μ" (2.54 μm) Avg. Nickel

Contact Interface: [30 μ"] Gold minimum wipe area

Ground Shield Contact:

Underplating: 100 μ" (2.54 μm) Avg. Nickel overall

Overplating: 10 μ" (0.25 μm) Avg. Gold

Electrical

Cable Voltage Rating: 30 V

Cable Current Rating: 1 A min. (Rating is application dependent)

Cable Insulation Resistance: >100 Megohms at 500 V_{DC}

Cable Withstanding Voltage: 500 V_{DC} for 1 minute

Cable Characteristic Impedance: 50 Ω and 75 Ω single ended assemblies, 85 Ω and 100 Ω differential assemblies

Environmental

Cable Temperature Rating: -20 to +80°C Minimum

UL File No.: E86982

Mechanical

Cable Connector Insertion Force: 0.3 N [1.35 pounds]/Single wafer max

Cable Connector Withdrawal Force: 0.11 N [0.50 pounds]/Single wafer max

Cable Retention Force: 44.5 N [10 pounds] minimum

Cable Connector Durability: 50 Mating Cycles



Electronic Solutions Division
Interconnect Solutions
<http://www.3Mconnector.com>

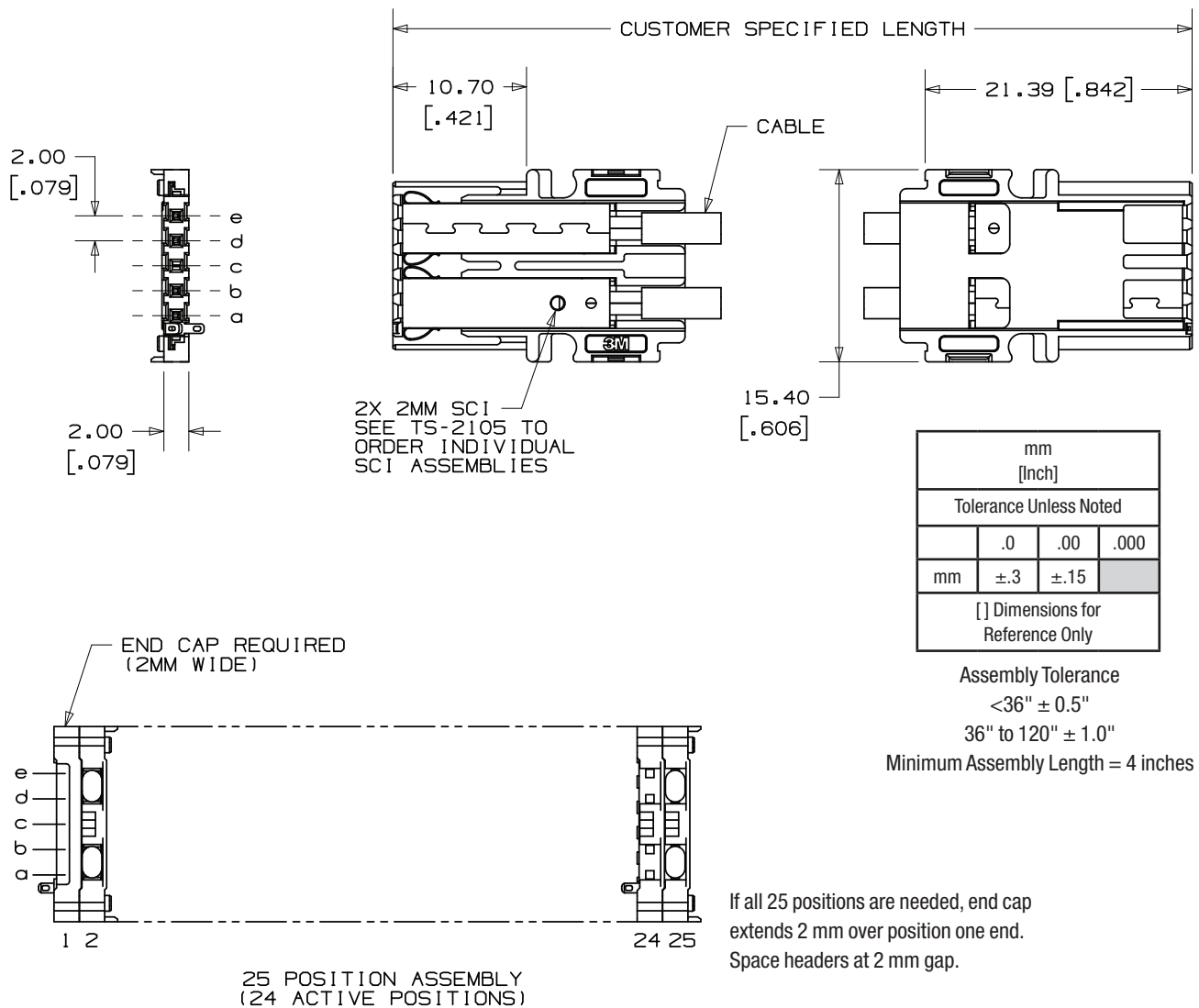
3M is a trademark of 3M Company.
For technical, sales or ordering information call
800-225-5373

3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

2 mm 5×1 Column Stacked Wafers for Coax or Twin Axial Cable, Power

UHM Series

Shielded Controlled Impedance (SCI) Wafer Receptacle



Ordering Information

Right and Left Connectors:

a b c d e
12 = 1 Coax G S G X X
13 = 1 Coax X X G S G
15 = 2 Coax G S G S G
17 = 2 Twin Axial S S G S S
19 = 1 Twin Axial S S G X X
20 = 1 Twin Axial X X G S S
XX = Custom, contact 3M

Coax Cable Type:

027 = 50 Ω Cable, 26 AWG
105 = 50 Ω Cable, 28 AWG
054 = 75 Ω Cable, 30 AWG

Twin Axial Cable Type:

058 = 100 Ω Twin Axial, 26 AWG
122 = 85 Ω Twin Axial, 25 AWG

Length:
Tip-to-tip in inches

Cable Configuration:
C = Pin A to Pin A (Ref Figure A)
D = Transmit to Receive (Ref Figure B)

Number of Wafer Assemblies in Harness:
1 through 26

Ground Pattern:
1 = Ground to C Row

98XXXX-XXX-XXX.X-X-X-XX

TS-2364-A
Sheet 2 of 5

3M

Electronic Solutions Division
Interconnect Solutions
<http://www.3Mconnector.com>

3M is a trademark of 3M Company.
For technical, sales or ordering information call
800-225-5373

3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

2 mm 5×1 Column Stacked Wafers for Coax or Twin Axial Cable, Power

UHM Series

Cable Configuration

Figure A

(PIN 1 to PIN 1)
Twin Axial shown

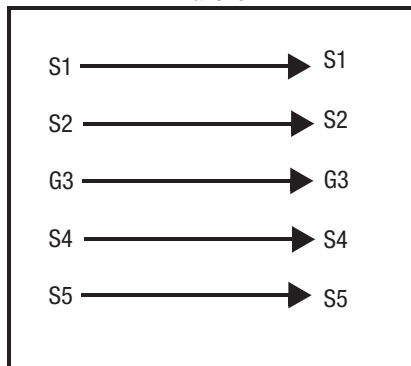
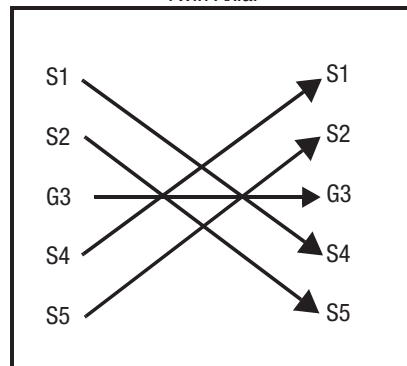


Figure B

(Transmit to Recieve)
Twin Axial



S = Signal / G = Ground / NC = Not Connected

Figure A²

Coax

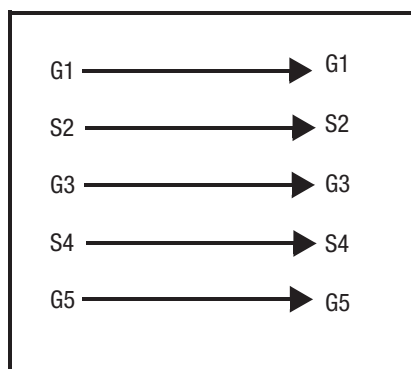
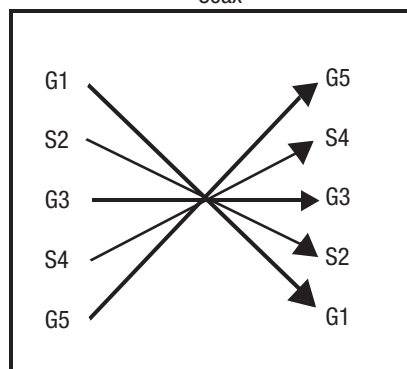


Figure B²

(Transmit to Recieve)
Coax



UHM Cable Assemblies (Standard Assemblies)

Socket Style	Order Number (Add Cable Length)	# Assemb.
UHM B110	981717-058-XXX.X-C-1-22	
UHM C055	981717-058-XXX.X-C-1-11	
UHM B095	981717-058-XXX.X-C-1-19	
UHM A110	981717-058-XXX.X-C-1-11	(2)
UHM B125	981717-058-XXX.X-C-1-25	

TS-2364-A
Sheet 3 of 5



Electronic Solutions Division
Interconnect Solutions
<http://www.3Mconnector.com>

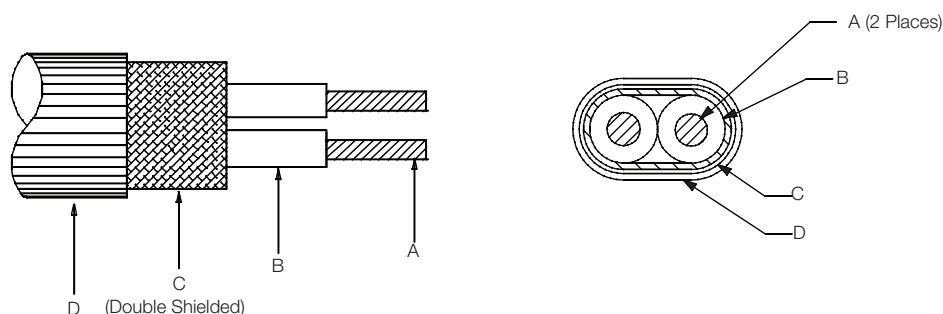
3M is a trademark of 3M Company.
For technical, sales or ordering information call
800-225-5373

3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

2 mm 5×1 Column Stacked Wafers for Coax or Twin Axial Cable, Power

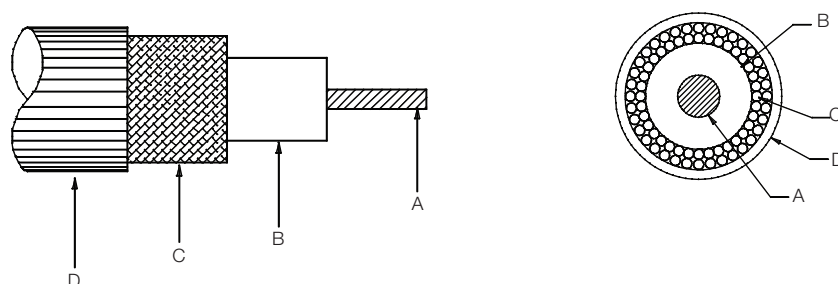
UHM Series

Twin Axial Cable



Physical Properties (Typical)					
Cable Type			Dielectric Material	Shield	Jacket
058 Twin Axial	100 Ω	26 AWG, Solid Silver Plated Copper 0.455 mm [0.018]	Air & PTFE	Dual layer braid	FEP Brown 1.55 x 2.49 mm O.D. [.061" x .098" O.D.]
122 Twin Axial	85 $\Omega \pm$ 5 Ω	24.5 AWG, Solid SPC 0.483 mm [0.019]	Air & PTFE	Braid	FEP Burgundy 1.73 x 2.67 mm O.D. [.068" x .105" O.D.]

Coaxial Cable



Physical Properties (Typical)					
Cable Type			Dielectric Material	Shield	Jacket
027 Coax	50 Ω	26 AWG, 7/34, Silver Plated Copper 0.48 mm O.D. [.019" O.D.]	Air & PTFE	Dual layer silver plated copper wire served shield	FEP Blue 1.80 mm O.D. [.071" O.D.]
105 Coax	50 Ω	28 AWG, 19/40 Silver Plated Copper 0.33 mm O.D. [.013" O.D.]	Foamed FEP	Silver plated braid	FEP Black 1.65 mm O.D. [.065" O.D.]
048 Coax	75 Ω	30 AWG, 7/38, Silver Plated Copper 0.31 mm O.D. [.012" O.D.]	Air & PTFE	Silver plated braid	FEP Gray 1.88 mm O.D. [.074" O.D.]

TS-2364-A
Sheet 4 of 5



Electronic Solutions Division
Interconnect Solutions
<http://www.3Mconnector.com>

3M is a trademark of 3M Company.
For technical, sales or ordering information call
800-225-5373

3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

2 mm 5×1 Column Stacked Wafers for Coax or Twin Axial Cable, Power

UHM Series

Coaxial and Twin Axial Cable

Electrical Properties (Typical)				
Cable Type		Capacitance	Propagation Delay	Attenuation
Coaxial Cable				
027 Coax	50 Ω	74.5 pF/m Max [22.7 pF/ft]	3.81 nS/m [1.16 nS/ft]	-8.23 dB (typical) / 10 m @ 650 MHz
105 Coax	50 Ω	87 pF/m Max [26.5 pF/ft]	4.2 nS/m [1.28 nS/ft]	-3 dB (typical) / 3 m @ 500 MHz
054 Coax	75 Ω	51.2 pF/m Max [16 pF/ft]	4.00 nS/m [1.22 nS/ft]	-4.76 dB (typical) / 10 m @ 650 MHz
Twin Axial Cable				
058 Twin Axial	100 Ω	42.6 pF/m Max [13.0 pF/ft]	4.17 nS/m [1.27 nS/ft]	-7.79 dB (typical) / 10 m @ 650 MHz
122 Twin Axial	85 $\Omega \pm 5 \Omega$	45.88 pF/m Max [14.0 pF/ft]	3.87 nS/m [1.18 nS/ft]	Contact 3M

TS-2364-A
Sheet 5 of 5



Electronic Solutions Division
Interconnect Solutions
<http://www.3Mconnector.com>

3M is a trademark of 3M Company.
For technical, sales or ordering information call
800-225-5373

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of one (1) year from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



3M Electronics Solutions Division

6801 River Place Blvd.
Austin, TX 78726-9000
U.S.A.
1-800-225-5373
www.3Mconnector.com

Please recycle. Printed in USA.
© 3M 2010. All rights reserved.
RIA-2217B-E

3M is a trademark of 3M Company.