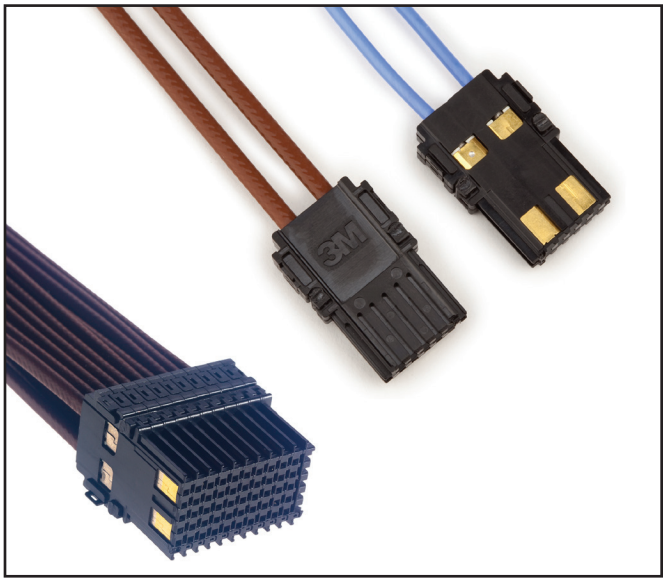
3M™ Ultra Hard Metric (UHM) High-Performance Cable Assembly

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

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

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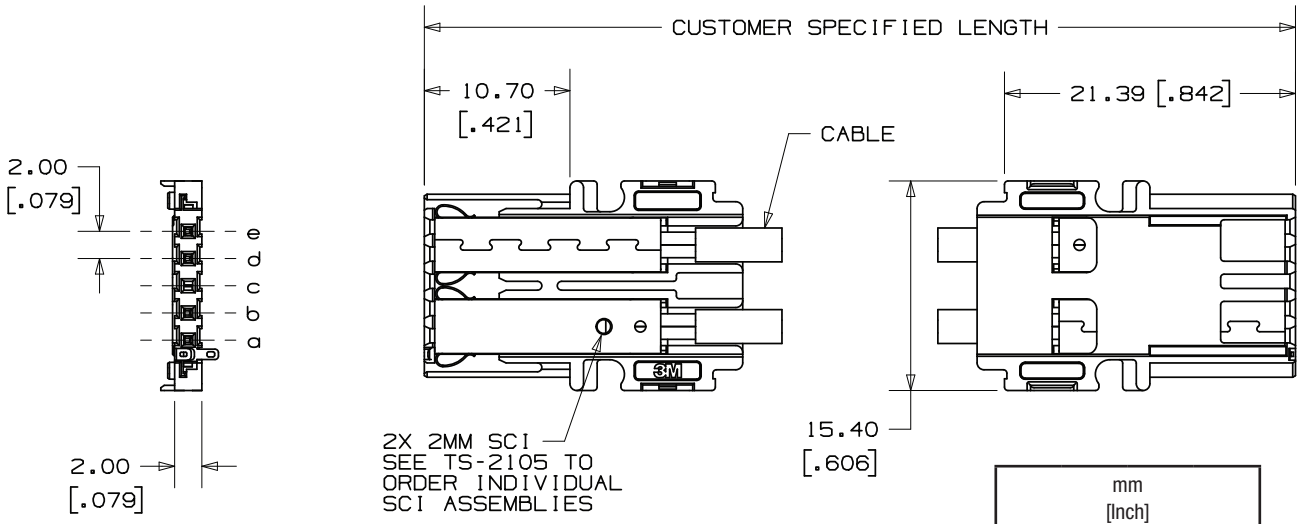
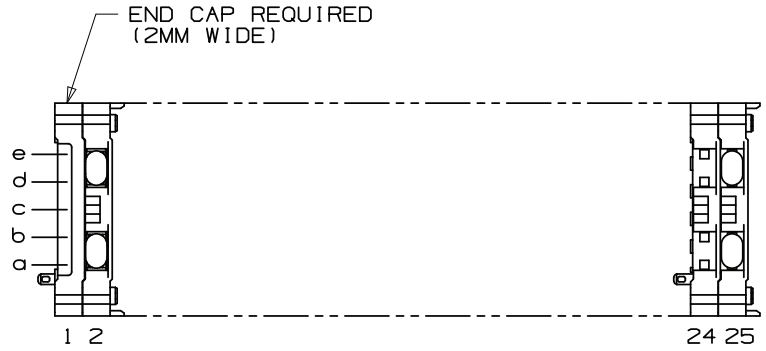
Shielded Controlled Impedance (SCI) Wafer Receptacle



mm [Inch]			
Tolerance Unless Noted			
	.0	.00	.000
mm	±.3	±.15	
[ ] Dimensions for Reference Only			

Assembly Tolerance
<36" ± 0.5"
36" to 120" ± 1.0"
Minimum Assembly Length = 4 inches



25 POSITION ASSEMBLY
(24 ACTIVE POSITIONS)

If all 25 positions are needed, end cap extends 2 mm over position one end. Space headers at 2 mm gap.

Ordering Information

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

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)

Ground Pattern:
1 = Ground to C Row

Number of Wafer Assemblies in Harness:
1 through 26

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Cable Configuration

Figure A
(PIN 1 to PIN 1)
Twin Axial shown

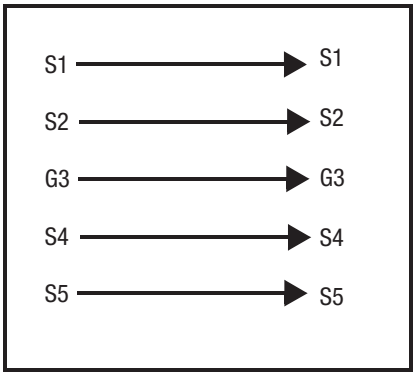
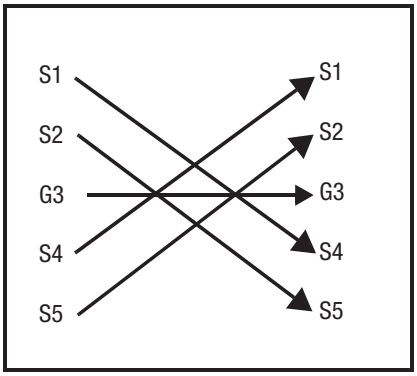


Figure B
(Transmit to Recieve)
Twin Axial



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

Figure A[2]
Coax

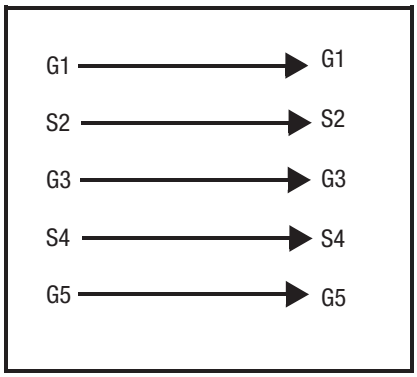
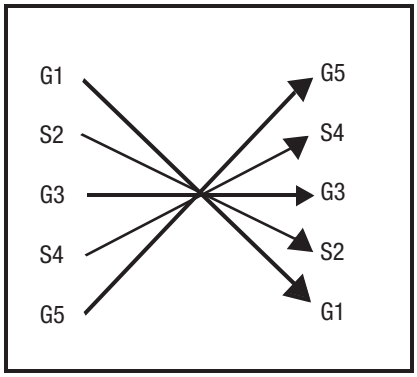


Figure B[2]
(Transmit to Recieve)
Coax



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	

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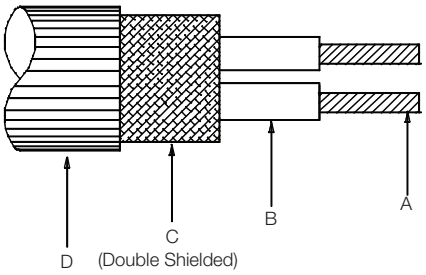
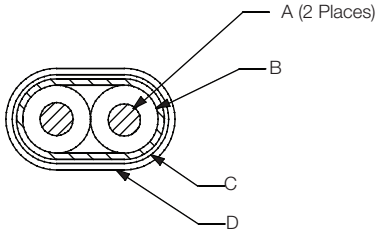
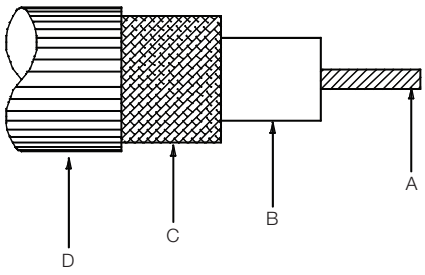
Twin Axial Cable

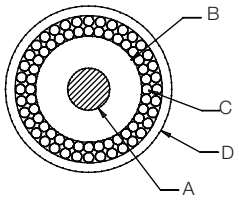




Physical Properties (Typical)					
Cable Type			**Dielectric Material**	**Shield**	**Jacket**
058 Twin Axial	100 Ω	26 AWG, Solid Silver Plated Copper 0.455 mm [0.018]	Air & PTFE	Dual layer braid	FEP Brown 1.55 x 2.49 mm O.D. [.061" x .098" O.D.]
122 Twin Axial	85 Ω ± 5 Ω	24.5 AWG, Solid SPC 0.483 mm [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.]

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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 Ω ± 5 Ω	45.88 pF/m Max [14.0 pF/ft]	3.87 nS/m [1.18 nS/ft]	Contact 3M

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