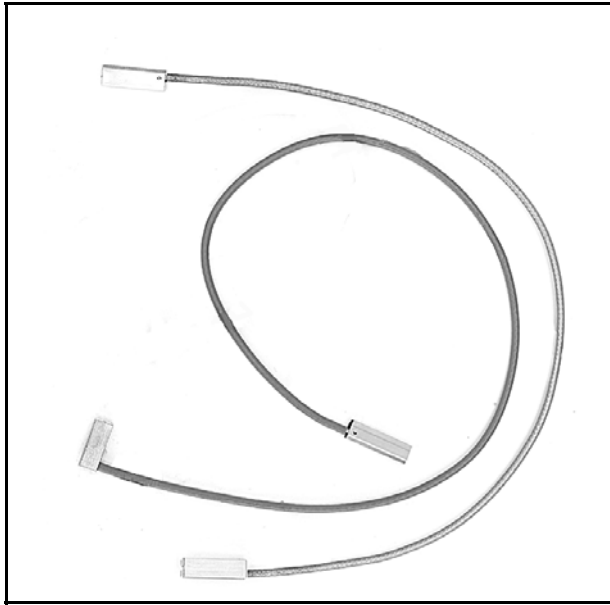


# 3M™ Shielded Controlled Impedance (SCI)

.100"

Cable Assemblies



- .100 inch (2.54 mm) center spacing
- Mates with standard 3M two-pin headers
- Supplied as a completed assembly

## Stand-Alone version

- Available in right angle and straight configurations with optional polarization feature
- Right angle connector has optional two-pin header latch

## Carrier version

- Available only in straight configuration designed for use with the 3M SCI carrier system

Date Modified: September 23, 2005

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## Physical

- (Connector Insulation) Material: Thermoplastic  
Flammability: UL 94V-0
- (Connector Contact) Material: Beryllium Copper  
Plating: 50/50  $\mu$ " Au/Ni (1.27/1.27  $\mu$ m Au/Ni)
- (Connector Shieldbox) Material: Copper Zinc Alloy  
Plating: Solderable Nickel

---

## Electrical

- Current Rating: 1 A
- Insulation Resistance:  $>5 \times 10^9 \Omega$
- Withstanding Voltage: 500 V AC
- Characteristic Impedance: See cable types

---

## Mechanical

- Center Spacing: .100" (2.54 mm)
- Mating Pin Dimensions: .024" min/.026" max (0.61 mm/0.665 mm)
- Mating Pin Length 20, 21, 22, 23: .23" nom (5.80 mm); 24: .21" nom (5.02 mm)
- Contact Mating Point 20, 21, 22, 23: .13" (3.40 mm); 24: .10" (2.60 mm)
- Connector Insertion Force: 2.3 N max [Pin:0.025" (0.63 mm)]
- Connector Withdrawal Force: 1.5 N min [Pin:0.025" (0.63 mm)]
- Cable Retention Force: 50 N min
- Durability (Insertion/Withdrawal): 500 cycles

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## Environmental

- Temperature Rating: 22, 23: -55 to +105°C; 24: -55 to +125°C

UL File No.: E86982 (Optional)

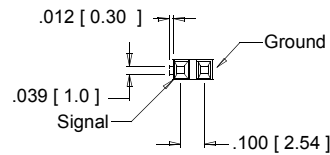
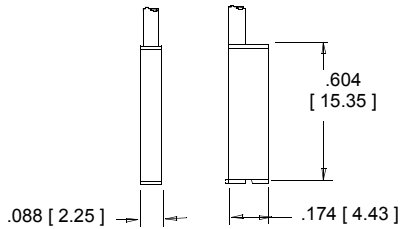
# 3M™ Shielded Controlled Impedance (SCI)

.100"

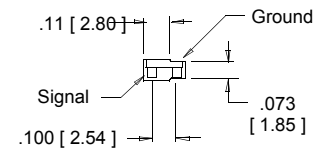
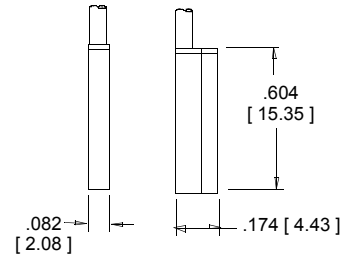
Cable Assemblies

## Connector Types

Stand Alone Version  
Type 23



Carrier Version  
Type 24

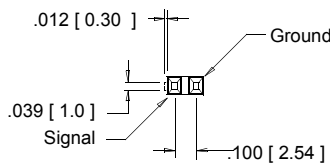
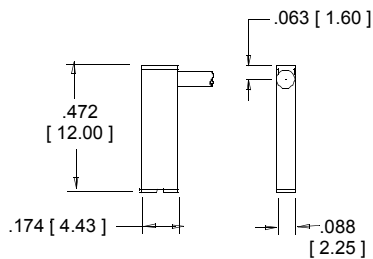


Inch  
[mm]

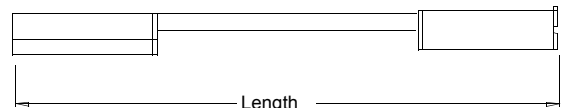
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

[ ] Dimensions for Reference only

Right Angle Version  
Type 22



## Example Assembly



### Assembly Tolerances:

<10": ±1/4"

10" to 36": ±1/2"

36" to 120": ±1"

>120": ±2"

Minimum Length:  
4.3"

## Ordering Information

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

Left Connector Type/Right Connector Type  
22 = Right angle, nonpolarized  
23 = Straight, nonpolarized  
24 = Carrier version, straight

Cable Type  
017 = 50 Ω  
027 = 50 Ω Low capacitance  
041 = 75 Ω  
XXX = For other cable options  
contact 3M (if non standard)

Length  
(inches)

USA and Canadian  
Certification  
Y = Yes  
N = No

Ground Pattern  
S = Signals as indicated on connector dwg  
Z = Customer special ground pattern  
(Consult Factory)

Harness Required  
A = Multiple Assy's Harnessed  
0 = Single Assembly Only

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Interconnect Solutions

<http://www.3M.com/interconnects/>

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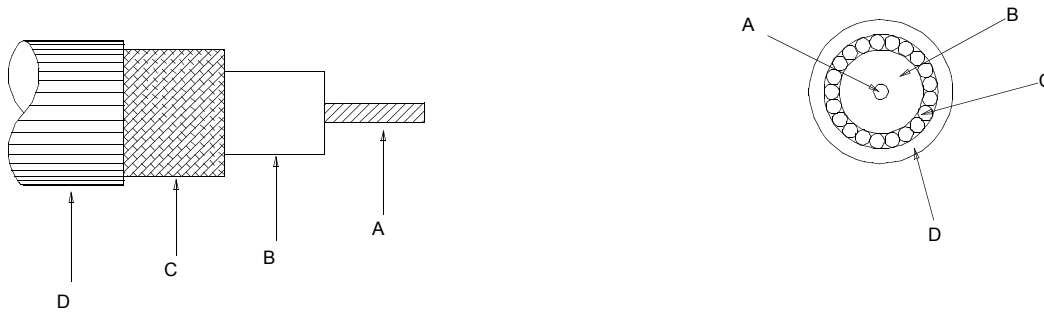
800-225-5373

# 3M™ Shielded Controlled Impedance (SCI)

.100"

Cable Assemblies

## Cable Specification



### Physical Properties (TYP)

Cable Type		A Center Conductor	B Dielectric Material	C Shield	D Jacket
017	50 Ω ± 5 Ω	30 AWG SCCCS Stranded (7/38) .012" O.D. (0.30 mm O.D.)	PTFE .033" O.D. (0.84 mm O.D.)	38 AWG Braid (SPC) 95% nominal coverage .059" O.D. (1.50 mm O.D.)	FEP Natural Color .071" O.D. (1.80 mm O.D.)
027	50 Ω ± 2 Ω	26 AWG SPC Stranded (7/34) .019" O.D. (0.48 mm O.D.)	AIR/FEP Tube .044" O.D. (1.1 mm O.D.)	38 AWG (SPC) Double Serve	FEP Blue Color .074" O.D. (1.88 mm O.D.)
041	75 Ω ± 3 Ω	30 AWG SPC Stranded (7/38) .012" O.D. (0.30 mm O.D.)	FEP (Porous) .045" O.D. (1.14 mm O.D.)	40 AWG Braid (TPC) 90% min coverage .059" O.D. (1.50 mm O.D.)	FEP Gray Color .074" O.D. (1.88 mm O.D.)

SCCCS = Silver Coated Copper Covered Steel  
SPC = Silver Plated Copper  
TPC = Tin Plated Copper

### Electrical Properties (TYP)

Cable Type		Capacitance	Propagation Delay	Attenuation	Conductor Resistance
017	50 Ω ± 5 Ω	32 pf/ft max (105 pf/m)	1.46 ns/ft nominal (4.8 ns/m)	33 dB Max/100 ft @ 400 MHz (108 dB/100 m)	.24 Ω/ft at 68°F (0.8 Ω/m at 20°C)
027	50 Ω ± 2 Ω	23 pf/ft nom (75 pf/m)	1.15 ns/ft nominal (3.77 ns/m)	20 dB /100ft @ 400 MHz Nom (65 dB/100 m)	.041 Ω/ft at 68°F (.15 Ω/m at 20°C)
041	75 Ω ± 3 Ω	16 pf/ft max (52 pf/m)	1.22 ns/ft nominal (4.0 ns/m)	10 dB Max/100 ft @ 100 MHz (33 dB/100 m)	.09 Ω/ft at 68°F (0.3 Ω/m at 20°C)

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