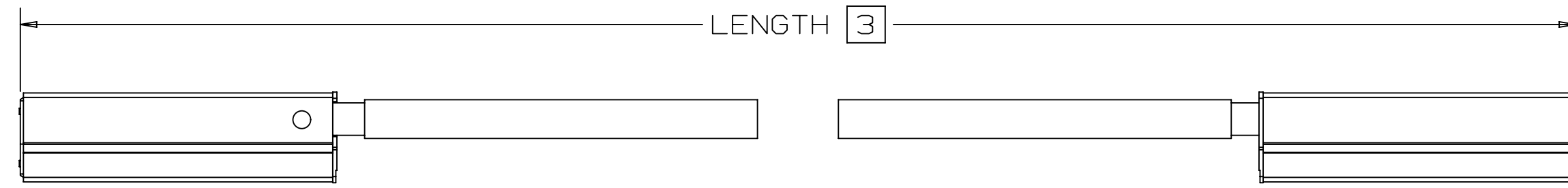
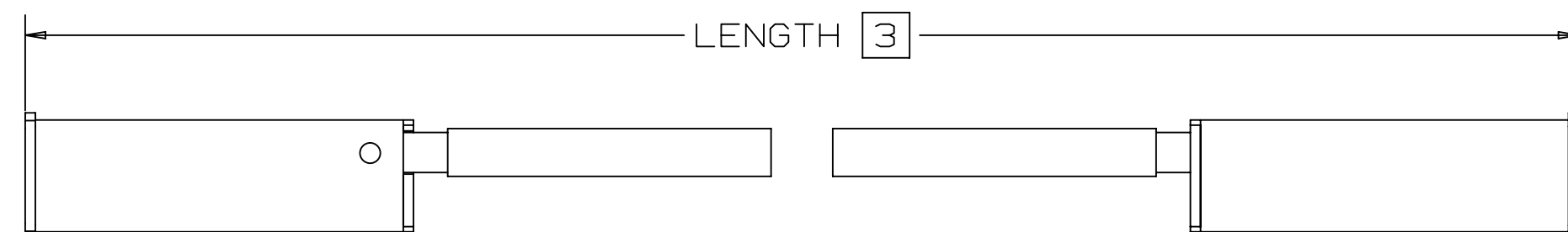


3M™ SHIELDED CONTROLLED IMPEDANCE (SCI) CABLE ASSEMBLIES, .100" SERIES  
 DUAL ROW .100" SCI CARRIER, .100" PIN STRIP WITH LATCH, COAX CABLE

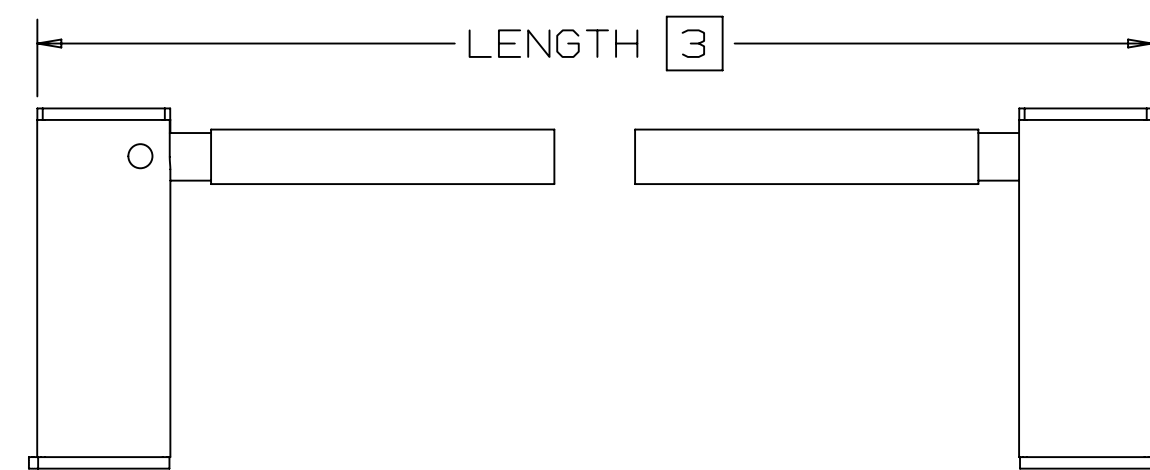
CARRIER VERSION, CONNECTOR TYPE #24



STAND ALONE VERSION, CONNECTOR TYPE #23



RIGHT ANGLE VERSION, CONNECTOR TYPE #22



NOTE:  
 1. ANY VERSION CONNECTOR TYPE  
 CAN BE ON THE SAME CABLE ASSEMBLY.

- \* .100 INCH (2.54MM) CENTER SPACING.
- \* MATES WITH STANDARD 3M™ TWO-PIN HEADERS.
- \* SUPPLIED AS A COMPLETE 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.

**2** PHYSICAL :

(CONNECTOR INSULATION) MATERIAL: THERMOPLASTIC  
 FLAMMABILITY: UL94V-0  
 (CONNECTOR CONTACT) MATERIAL: COPPER ALLOY  
 PLATING: 50/50µ" Au/Ni (1.27/1.27µm Au/Ni)  
 (CONNECTOR SHIELDBOX) MATERIAL: COPPER ALLOY  
 PLATING: SOLDERABLE NICKEL.

**2** ELECTRICAL :

CURRENT RATING: 1A  
 INSULATION RESISTANCE: >5 X 10<sup>9</sup>Ω  
 WITHSTANDING VOLTAGE: 500 V<sub>AC</sub>  
 CHARACTERISTIC IMPEDANCE: SEE CABLE TYPES.

**2** MECHANICAL :

CENTER SPACING: .100" (2.54mm)  
 MATING PIN DIMENSIONS: .024" MIN./ .026" MAX. (0.61mm/0.665mm)  
 MATING PIN LENGTH 22, 23: .23" NOM. (5.08mm);  
 24: .21" NOM. (5.02mm).  
 CONTACT MATING POINT 22, 23: .13" (3.40mm);  
 24: .10" (2.60mm).  
 CONNECTOR INSERTION FORCE: 2.3N MAX. (PIN: .025" (0.63mm).  
 CONNECTOR WITHDRAWAL FORCE: 1.3N TYPICAL (PIN: .025" (0.63mm).  
 CABLE RETENTION FORCE: 50N MIN.  
 DURABILITY (INSERTION/WITHDRAWAL): 500 CYCLES.

**2** ENVIRONMENTAL :

TEMPERATURE RATING: 22, 23: -55°C TO +105°C;  
 24: -55°C TO +125°C

- NOTES
- REGULATORY INFORMATION:  
 VISIT 3M.com/regs
  - IN THE EVENT OF CONFLICT BETWEEN THIS DATA AND THAT CONTAINED IN THE PRODUCT SPECIFICATION, THE PRODUCT SPECIFICATION TAKES PRECEDENT.
  - ASSEMBLY TOLERANCES:  
 <10" : ±.25"  
 10" TO 36" : ±.50"  
 36" TO 120" : ±1"  
 >120" : ±2"  
 MINIMUM LENGTH: 4.3"

ORDERING INFORMATION

CABLE ASSEMBLY-INDIVIDUAL LINES

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 = 50Ω  
 027 = 50Ω LOW CAPACITANCE  
 041 = 75Ω  
 XXX = FOR OTHER CABLE OPTIONS  
 CONTACT 3M (IF NON STANDARD)

LENGTH (IN INCHES):

USA AND CANADIAN CERTIFICATION:  
 Y = YES  
 N = NO

GROUND PATTERN:  
 S = SIGNAL AS INDICATED ON CONNECTOR DWG  
 Z = CUSTOMER SPECIAL GROUND PATTERN (CONSULT 3M)

HARNESSING  
 A = MULTIPLE ASS'S HARNESSSED  
 0 = SINGLE ASS'Y ONLY

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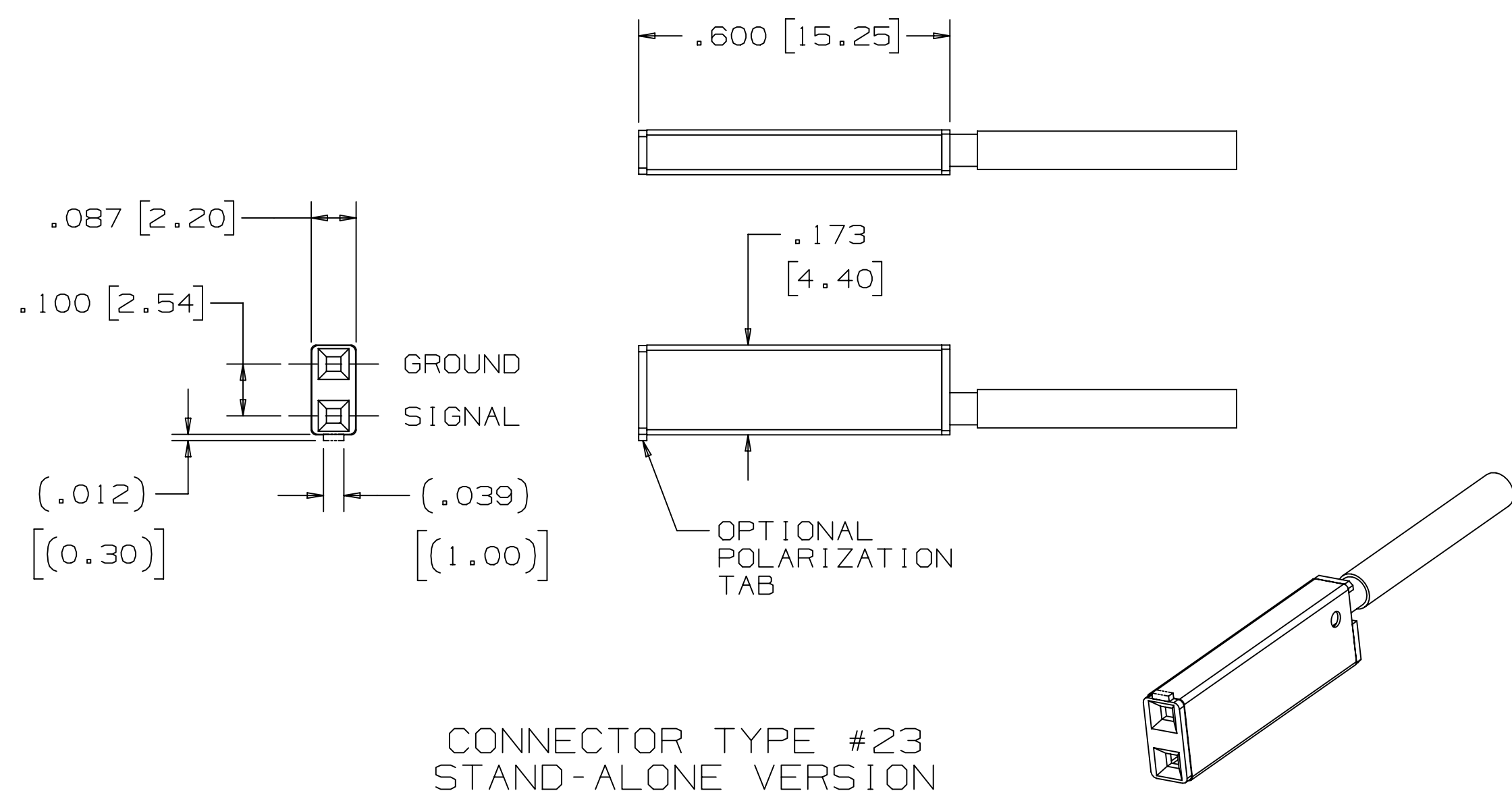
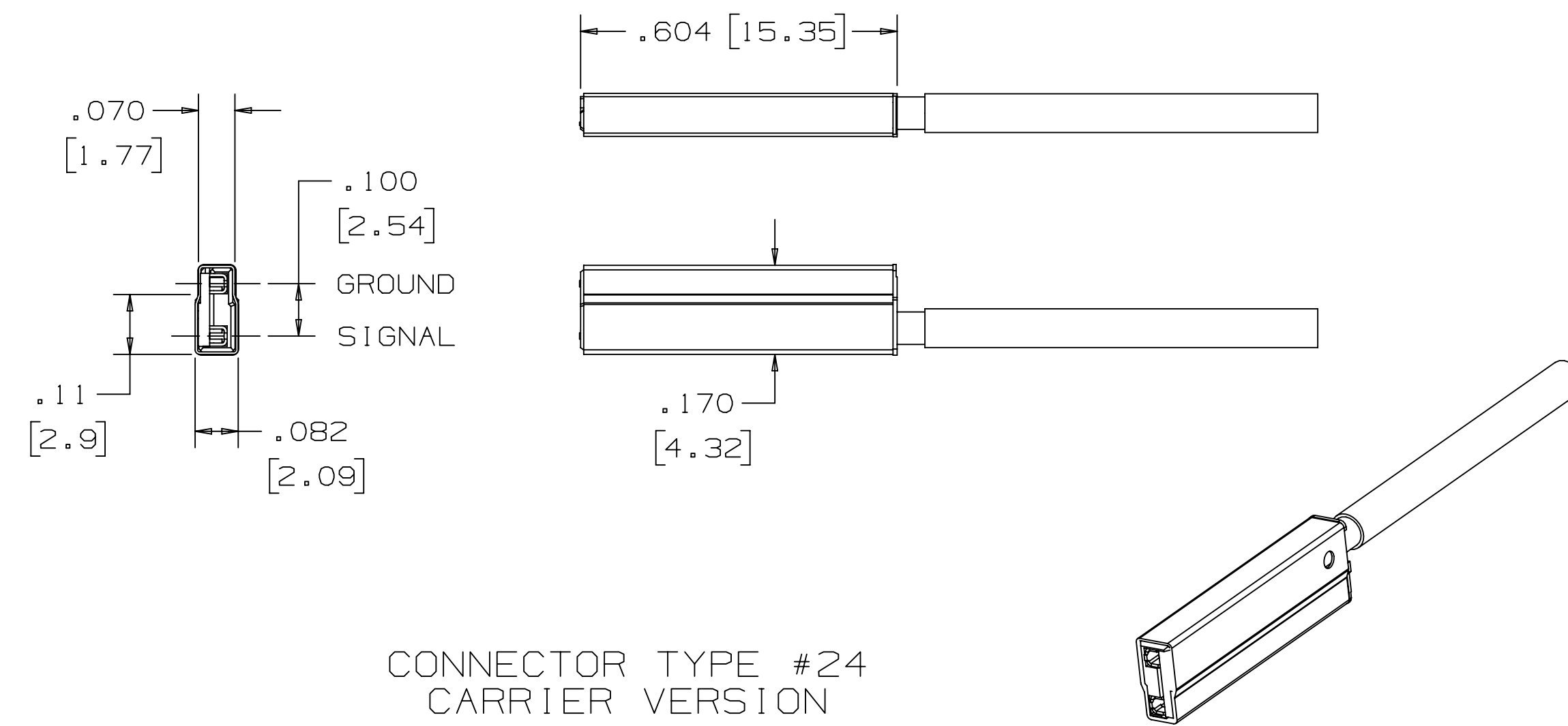
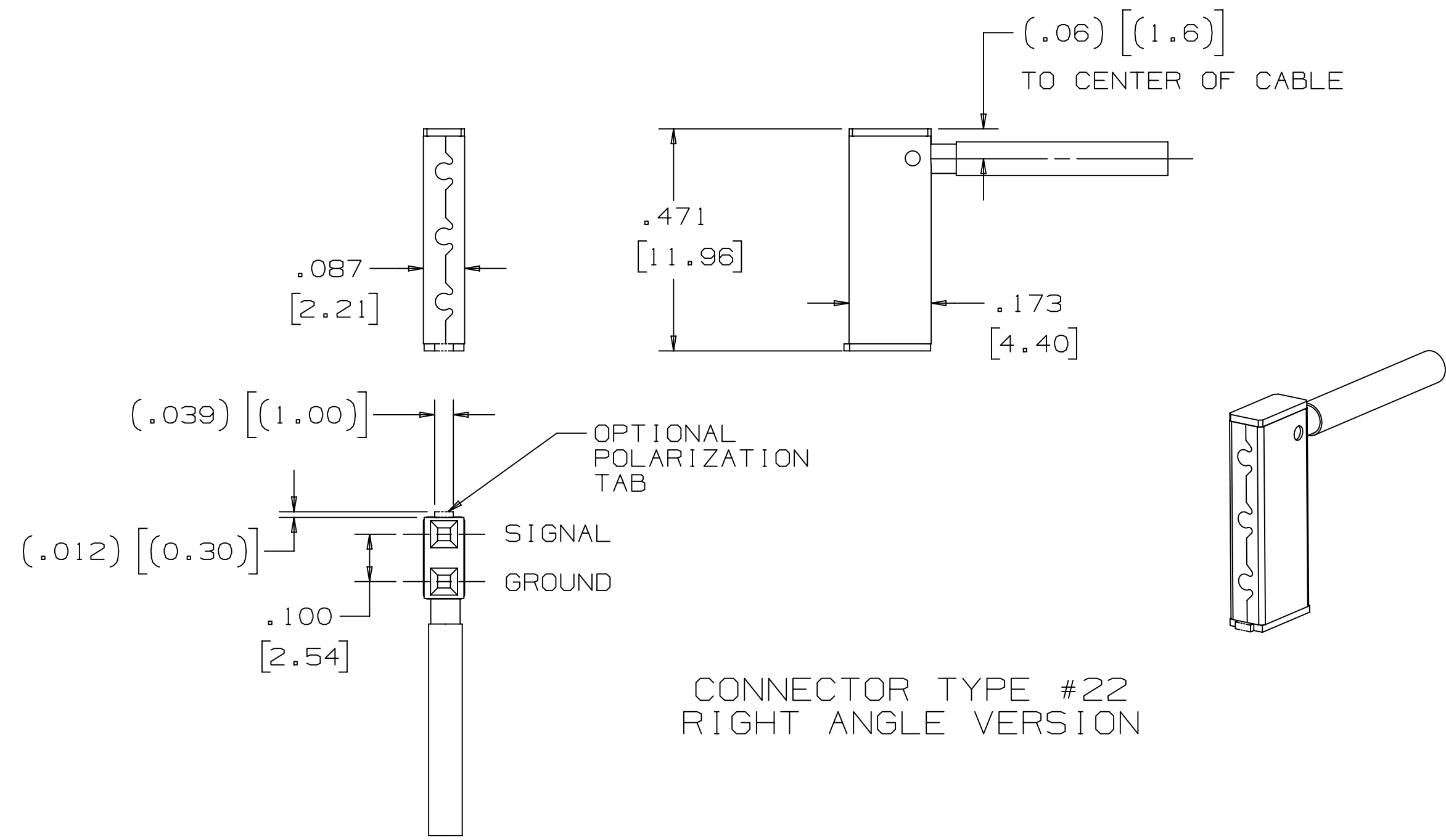
UL FILE NO: E86982 (OPTIONAL)

DIMENSIONS: INCHES [ MM ]  
 [ MM ] IS FOR REF. ONLY

|                                |                                 |                                |  |  |      |      |
|--------------------------------|---------------------------------|--------------------------------|--|--|------|------|
| DESIGN REFERENCE               | NEXT ASSEMBLY                   | REV                            | ECO  | ISSUE DATE AND DESCRIPTION   | DRFT | CHKD |
|                                |                                 |                                |  |  |      |      |
| DO NOT SCALE DRAWING           | SCALE 4/1                       | TOLERANCES EXCEPT AS NOTED     | INCHES<br>.01 ±.01<br>.000 ±.005<br>.0000 ±.0005<br>MILLIMETERS<br>0 ±<br>.0 ±<br>.00 ±<br>.000 ±  |  |      |      |
| THIRD ANGLE PROJECTION         | INTERPRET PER ASME Y14.5 - 2018 | MAX SURFACE ROUGHNESS          | INTERPRET PER ASME Y14.5 - 2018<br>ALL SURFACES<br><input checked="" type="checkbox"/> MARKED ONLY |  |      |      |
| DIVISION<br>EMSD               |                                 | DIVISION CODE<br>EMSD          |  | TITLE<br>SHIELDED CONTROLLED IMPEDANCE (SCI) .100" CABLE ASSEMBLY              |      |      |
| CAGE NUMBER<br>D78-5100-0803-6 |                                 | DRAWING NO.<br>D78-5100-0803-6 |  | REV.<br>B  |      |      |
| MODEL<br>.100 SCI              |                                 | DET.<br>IS1s                   |  | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> SHT 1 OF 4 |      |      |

78-5100-0803-6 REVISION

3M™ SHIELDED CONTROLLED IMPEDANCE (SCI) CABLE ASSEMBLIES, .100" SERIES  
 DUAL ROW .100" SCI CARRIER, .100" PIN STRIP WITH LATCH, COAX CABLE



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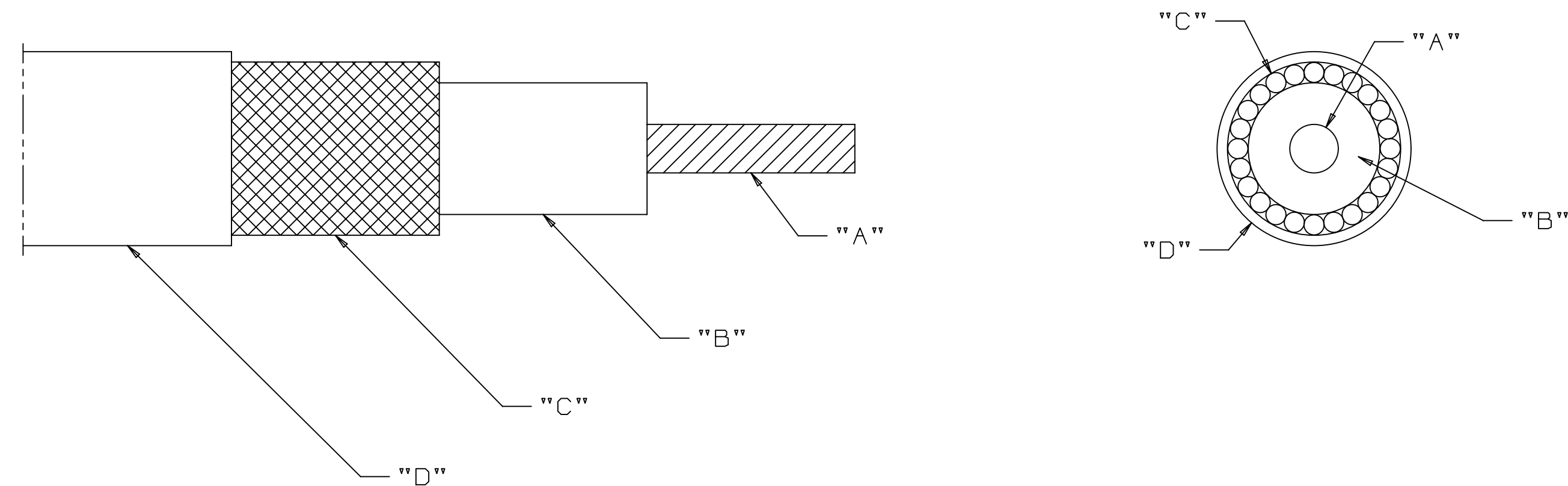
|                        |                                 |   |              |   |      |      |
|------------------------|---------------------------------|---|--------------|---|------|------|
| DESIGN REFERENCE       | NEXT ASSEMBLY                   | REV   | ECO          | ISSUE DATE AND DESCRIPTION                          | DRFT | CHKD |
|                        |                                 | ECO   |              | JAN 31, 2023<br>REVISE WITHDRAWAL FORCE AND REDRAWN | JNC  | FJR  |
|                        |                                 | AT1780  |              | SEP 23, 2005<br>PRODUCTION RELEASE                  | ---  | ---  |
| DRFT                   | DATE                            | MFG   | DATE         |   |      |      |
| CASTIGLIONE            | JAN 31, 2023                    |   |              |   |      |      |
| CHKD                   | DATE                            | APPV  | DATE         |   |      |      |
| S. OWEN                | JAN 31, 2023                    | F. RODRIGUEZ  | FEB 01, 2023 |   |      |      |
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| DO NOT SCALE DRAWING   | SCALE 4/1                       | TOLERANCES EXCEPT AS NOTED<br>INCHES<br>.0 ± .1<br>.00 ± .01<br>.000 ± .005<br>.0000 ± .0005  |              |   |      |      |
| THIRD ANGLE PROJECTION | INTERPRET PER ASME Y14.5 - 2018 | MILLIMETERS<br>0 ±<br>.0 ±<br>.00 ±<br>.000 ±   |              |   |      |      |
| MAX SURFACE ROUGHNESS  | ALL SURFACES                    | CAGE NUMBER<br>DRAWING NO.<br>MODEL<br>.100 SCI   |              |   |      |      |
| MARKED ONLY            | ANGLES                          | DET. NUMBER<br>D 78-5100-0803-6<br>IS1s <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO<br>SHT 2 OF 4   |              |   |      |      |

78-5100-0803-6  
DRAWING NUMBER

A

3M™ SHIELDED CONTROLLED IMPEDANCE (SCI) CABLE ASSEMBLIES, .100" SERIES  
 DUAL ROW .100" SCI CARRIER, .100" PIN STRIP WITH LATCH, COAX CABLE

CABLE SPECIFICATION



| PHYSICAL PROPERTIES (TYP) |  |   |   |   |
|---------------------------|--|---|---|---|
| CABLE TYPE                | "A" CENTER CONDUCTOR   | "B" DIELECTRIC MATERIAL                       | "C" SHIELD  | "D" JACKET  |
| 017                       | 50Ω ±5Ω<br>30 AWG SCCCS STRANDED (7/38)<br>.012" O.D.<br>[ 0.30mm O.D. ] | PTFE<br>.033" O.D.<br>[ 0.84mm O.D. ]         | 38 AWG BRAID (SPC)<br>95% NOMINAL COVERAGE<br>.059" O.D.<br>[ 1.50mm O.D. ] | FEP<br>NATURAL COLOR<br>.071" O.D.<br>[ 1.80mm O.D. ] |
| 027                       | 50Ω ±2Ω<br>26 AWG SPC STRANDED (7/34)<br>.019" O.D.<br>[ 0.48mm O.D. ]   | AIR/FEP TUBE<br>.044" O.D.<br>[ 1.1mm O.D. ]  | 38 AWG (SPC)<br>DOUBLE SERVE  | FEP<br>BLUE COLOR<br>.074" O.D.<br>[ 1.88mm O.D. ]    |
| 041                       | 75Ω ±3Ω<br>30 AWG SPC STRANDED (7/38)<br>.012" O.D.<br>[ 0.30mm O.D. ]   | FEP (POROUS)<br>.045" O.D.<br>[ 1.14mm O.D. ] | 40 AWG BRAID (TPC)<br>90% MINIMUM COVERAGE<br>.059" O.D.<br>[ 1.50mm O.D. ] | FEP<br>GRAY COLOR<br>.074" O.D.<br>[ 1.88mm O.D. ]    |

SCCCS = SILVER COPPER COVERED STEEL  
 SPC = SILVER PLATED COPPER  
 TPC = TIN PLATED COPPER

| ELECTRICAL PROPERTIES (TYP) |                                       |                               |   |                                       |  |
|-----------------------------|---------------------------------------|-------------------------------|---|---------------------------------------|--|
| CABLE TYPE                  | CAPACITANCE                           | PROPAGATION DELAY             | ATTENUATION                                   | CONDUCTOR RESISTANCE                  |  |
| 017                         | 50Ω ±5Ω<br>32 pF/ft MAX. [ 105 pF/m ] | 1.46 nS/ft NOM. [ 4.8 nS/m ]  | 33 dB MAX/100 ft @ 400 MHz<br>[ 108 dB/100m ] | .24Ω/ft @ 68°F<br>[ 0.8Ω/m @ 20°C ]   |  |
| 027                         | 50Ω ±2Ω<br>23 pF/ft NOM. [ 75 pF/m ]  | 1.15 nS/ft NOM. [ 3.77 nS/m ] | 20 dB/100 ft @ 400 MHz NOM.<br>[ 65 dB/100m ] | .041Ω/ft @ 68°F<br>[ 0.15Ω/m @ 20°C ] |  |
| 041                         | 75Ω ±3Ω<br>16 pF/ft MAX. [ 52 pF/m ]  | 1.22 nS/ft NOM. [ 4.0 nS/m ]  | 10 dB MAX/100 ft @ 100 MHz<br>[ 33 dB/100m ]  | .09Ω/ft @ 68°F<br>[ 0.3Ω/m @ 20°C ]   |  |

|     |        |  |      |      |
|-----|--------|--|------|------|
| REV | ECO    | ISSUE DATE AND DESCRIPTION                             | DRFT | CHKD |
| A   | AT1780 | SEP 23, 2005<br>PRODUCTION RELEASE                     | ---  | ---  |
| B   | 108799 | JAN 31, 2023<br>REVISE WITHDRAWAL<br>FORCE AND REDRAWN | JNC  | FJR  |

|                                 |               |   |              |         |              |
|---------------------------------|---------------|---|--------------|---------|--------------|
| DESIGN REFERENCE                | NEXT ASSEMBLY | DRFT  | DATE         | CHKD    | DATE         |
|                                 |               | CASTIGLIONE   | JAN 31, 2023 | S. OWEN | JAN 31, 2023 |
| DIVISION                        |               | DIVISION CODE   |              |         |              |
| EMSD                            |               | EMSD  |              |         |              |
| DO NOT SCALE DRAWING            | SCALE 30/1    | TOLERANCES EXCEPT AS NOTED                                |              |         |              |
| THIRD ANGLE PROJECTION          |               | INCHES<br>0 ±.1<br>.00 ±.01<br>.000 ±.005<br>.0000 ±.0005 |              |         |              |
| INTERPRET PER ASME Y14.5 - 2018 |               | MILLIMETERS<br>0 ±<br>.0 ±<br>.00 ±<br>.000 ±             |              |         |              |
| MAX SURFACE ROUGHNESS           |               | CAGE NUMBER   |              |         |              |
| MARKED ONLY                     |               | D 78-5100-0803-6  |              |         |              |
|                                 |               | MODEL .100 SCI  |              |         |              |

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TITLE: SHIELDED CONTROLLED IMPEDANCE (SCI) .100" CABLE ASSEMBLY

REV. B

DET: [ ] YES [X] NO SHT 3 OF 4

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78-5100-0803-6 DRAWING NUMBER

A

3M™ SHIELDED CONTROLLED IMPEDANCE (SCI) CABLE ASSEMBLIES, .100" SERIES  
 DUAL ROW .100" SCI CARRIER, .100" PIN STRIP WITH LATCH, COAX CABLE

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|--|---------------------------------|----------------------------|-------------|---|--------------|------|
| DESIGN REFERENCE   | NEXT ASSEMBLY                   | REV                        | ECO         | ISSUE DATE AND DESCRIPTION  | DRFT         | CHKD |
|  |                                 | DRFT                       | CASTIGLIONE | DATE  | JAN 31, 2023 | MFG  |
|  |                                 | CHKD                       | S. OWEN     | DATE  | JAN 31, 2023 | APPV |
|  |                                 |                            |             | DATE  | FEB 01, 2023 |      |
| DIVISION   |                                 | DIVISION CODE              |             | EMSD  |              |      |
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| THIRD ANGLE PROJECTION                                   | INTERPRET PER ASME Y14.5 - 2018 | INCHES                     |             | MILLIMETERS   |              |      |
|  |                                 | .00 ± .01                  |             | 0 ±   |              |      |
|  |                                 | .000 ± .005                |             | .00 ±   |              |      |
|  |                                 | .0000 ± .0005              |             | .000 ±  |              |      |
| MAX SURFACE ROUGHNESS                                    | ALL SURFACES                    | MARKED ONLY                |             | ANGLE ±<br>DET: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO SHT 4 OF 4  |              |      |
| TITLE  |                                 | CAGE NUMBER                |             | DRAWING NO.   |              | REV. |
| SHIELDED CONTROLLED IMPEDANCE (SCI) .100" CABLE ASSEMBLY |                                 | D 78-5100-0803-6           |             | B   |              |      |
| MODEL  |                                 | .100 SCI                   |             |   |              |      |

78-5100-0803-6  
DRAWING NUMBER

A