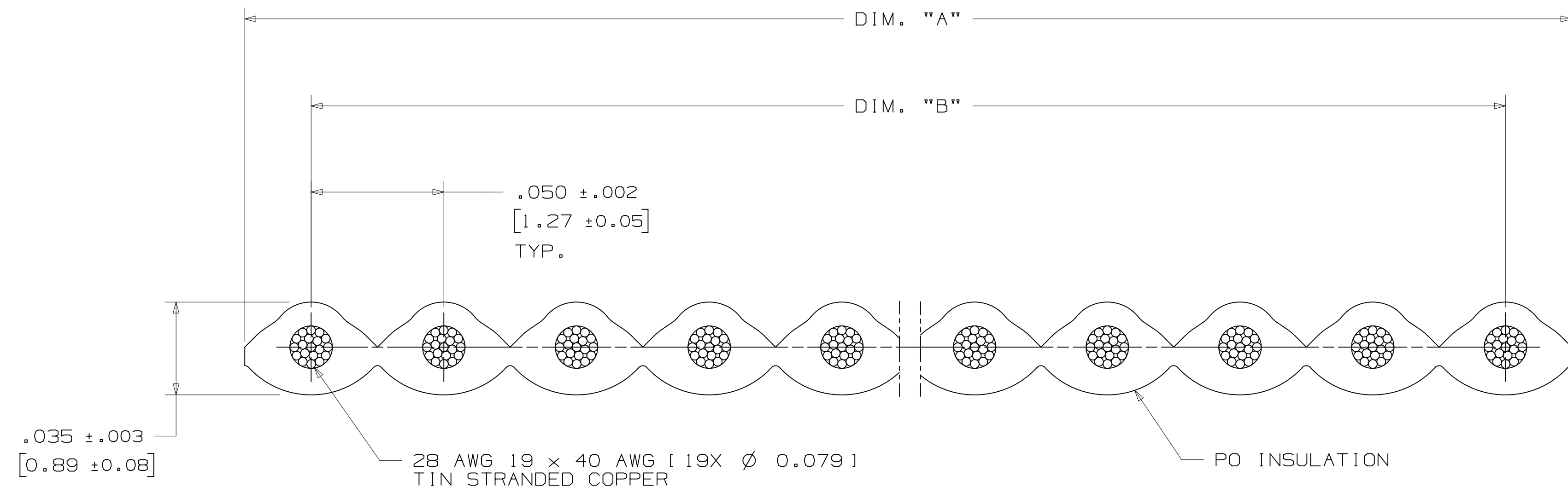


3M™ MEDIUM FLEX LIFE FLAT CABLE, HF539 SERIES
 .050" 28 AWG STRANDED, MEDIUM FLEX LIFE, HALOGEN FREE PO



Note: Available in standard 100 ft and 300 ft rolls, please specify when ordering. Contact 3M for availability of additional conductor counts and/or custom roll lengths.

TABLE 1
 DIMENSION CHART

| NUMBER OF CONDUCTORS | 3M PART NUMBER | DIMENSION 'A' ± AS NOTED | DIMENSION 'B' (SEE NOTE 2) |
|----------------------|----------------|--------------------------|----------------------------|
| 6 | HF539/06 | 0.300"±0.010" | 0.250"±0.007" |
| 9 | HF539/09 | 0.450"±0.010" | 0.400"±0.007" |
| 10 | HF539/10 | 0.500"±0.010" | 0.450"±0.007" |
| 14 | HF539/14 | 0.700"±0.010" | 0.650"±0.007" |
| 15 | HF539/15 | 0.750"±0.010" | 0.700"±0.007" |
| 16 | HF539/16 | 0.800"±0.015" | 0.750"±0.011" |
| 20 | HF539/20 | 1.000"±0.015" | 0.950"±0.011" |
| 24 | HF539/24 | 1.200"±0.015" | 1.150"±0.011" |
| 25 | HF539/25 | 1.250"±0.015" | 1.200"±0.011" |
| 26 | HF539/26 | 1.300"±0.015" | 1.250"±0.011" |
| 30 | HF539/30 | 1.500"±0.020" | 1.450"±0.015" |
| 34 | HF539/34 | 1.700"±0.020" | 1.650"±0.015" |
| 36 | HF539/36 | 1.800"±0.020" | 1.750"±0.015" |
| 37 | HF539/37 | 1.850"±0.020" | 1.800"±0.015" |
| 40 | HF539/40 | 2.000"±0.020" | 1.950"±0.015" |
| 50 | HF539/50 | 2.500"±0.020" | 2.450"±0.015" |
| 60 | HF539/60 | 3.000"±0.020" | 2.950"±0.015" |
| 64 | HF539/64 | 3.200"±0.020" | 3.150"±0.015" |

TABLE 2
 ELECTRICAL CHARACTERISTICS

| VOLTAGE RATING | USA: 300V, CANADA: 150V, EU: 50V | |
|--------------------------|---|------------------------|
| INSULATION RESISTANCE | PRIMARY CABLE >1 X 10 ¹⁰ Ω/10 FT [3 m] | |
| CHARACTERISTIC IMPEDANCE | UNBALANCED | BALANCED |
| | | 100 Ω |
| CAPACITANCE | 15.0 pF/ft [49.2 pF/m] | 8.4 pF/ft [27.7 pF/m] |
| INDUCTANCE | 0.15 μH/ft [0.49 μH/m] | 0.24 μH/ft [0.79 μH/m] |
| PROPAGATION DELAY | 1.51 ns/ft [4.95 ns/m] | 1.42 ns/ft [4.66 ns/m] |
| VELOCITY OF PROPAGATION | 68% | 72% |

NOTE: UNBALANCED IS MEASURED BETWEEN GROUND-SIGNAL-GROUND CONDUCTORS. BALANCED IS MEASURED WITHIN A PAIR.

X HF539/XX XX
 BLANK = STANDARD
 C = CANADIAN
 NUMBER OF CONDUCTORS (SEE TABLE 1)
 BLANK = STANDARD
 SF = SPLICE FREE

ROLLING FLEX CYCLES PER EIA-364-41

| RADIUS | MINIMUM CYCLES |
|--------|----------------|
| 1/2" | 0.4 MILLION |
| 3/4" | 5 MILLION |
| 1 3/4" | 10 MILLION |

NOTE: REPRESENTS MINIMUM ROLLING FLEX CYCLES PERFORMED AT AMBIENT TEMPERATURES AT DATE OF PUBLICATION. ADDITIONAL TESTING IS ONGOING. CABLE CONSTRUCTION AND MATERIAL IS SIMILAR TO 3319 SERIES CABLE WHICH IS RATED TO 100 MILLION CYCLES AT 7/8" RADIUS. SEE TS-0732. CONTACT 3M FOR THE MOST UP-TO-DATE INFORMATION.

NOTES

- MATERIAL:
 A) PRIMARY INSULATION: HALOGEN FREE POLYOLEFIN (PO).
 B) CONDUCTORS: 28 AWG, 19 X 40 AWG (19 X, Ø 0.079), TINNED STRANDED COPPER.
- REGULATORY INFORMATION:
 VISIT 3M.com/regs OR CONTACT YOUR 3M REPRESENTATIVE TO FIND THE RoHS COMPLIANCE STATUS OF THE 3M PART YOU ARE INTERESTED IN.

 UL FILE NO: E42769,
 UL STYLE NO: 21682.
- MARKINGS:
 STANDARD: NONE
 CANADIAN: SEE "PRINTING ILLUSTRATION" VIEW
 PRIMARY CABLE: BLUE MARK ON EDGES DESIGNATES WIRE NUMBER 1.
- THE SURFACE DEFINED BY THE "ZIP" PROCESS IS NOT REQUIRED TO BE BLUE.
- ENVIRONMENTAL:
 TEMP RATING: -40°C TO +105°C (EIA-364-32G, METHOD A, TEST CONDITION 2).

 -10°C TO +105°C (UL TEMPERATURE RATING)
 FLAMABILITY RATING: HORIZONTAL.
- HALOGEN FREE IS DEFINED AS BOTH:
 1) NO HALOGEN COMPOUNDS THAT ARE INTENTIONALLY ADDED TO THE PRODUCT OR USED IN THE MANUFACTURING PROCESS FOR THE PRODUCT.
 2) ANY IMPURITIES PRESENT ARE LESS THAN 900 ppm BROMINE, LESS THAN 900 ppm CHLORINE AND/OR LESS THAN 1500 ppm TOTAL BROMINE AND CHLORINE. THE LATTER ARE THE LEVELS SET FORTH IN CERTAIN INDUSTRY STANDARDS FOR PRINTED CIRCUIT BOARDS, SUCH AS THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) 61249-2-21 STANDARD. THIS INFORMATION REPRESENTS 3M/S KNOWLEDGE AND BELIEF WHICH MAY BE BASED IN WHOLE OR IN PART ON INFORMATION PROVIDED BY 3RD PARTY SUPPLIERS TO 3M.

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 INTERCONNECT SOLUTIONS
 http://www.3Mconnectors.com

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AWM 21682 105°C 300V HOR AWM 1A 105° 150V FT2 EU<50V

"PRINTING ILLUSTRATION"



| DESIGN REFERENCE | NEXT ASSEMBLY | REV | ECO | ISSUE DATE AND DESCRIPTION | DRFT | CHKD |
|------------------|---------------|-----|-------|----------------------------|------|------|
| | | B | 79493 | JUN 11, 2018 | JNC | BM |
| | | A | 44734 | DEC 06, 2012 | JNC | RE |
| | | | | PRODUCTION RELEASE | | |

| DATE | DATE | DATE | DATE |
|--------------|--------------|------|------|
| NOV 05, 2012 | NOV 05, 2012 | | |

| DIVISION | DIVISION CODE |
|----------|---------------|
| EMSD | |

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|----------------------|-------|--|
| | | INCHES: .0 ± .1, .00 ± .05, .000 ± .010, .0000 ± .0002 |
| | | MILLIMETERS: 0 ± .25, .0 ± .13, .00 ± .25, .000 ± .005 |

| TITLE | CAGE NUMBER | SIZE | DRAWING NO. | REV. |
|---|-------------|------|----------------|------|
| MEDIUM FLEX LIFE FLAT CABLE, .050", 28 AWG, HF539 | D | | 78-5100-2565-9 | B |

Imaged: Central Standard Time 6/12/2018 -- UTC Off-set (hrs) 6

8 7 6 5 4 3 2 1

3M™ MEDIUM FLEX LIFE FLAT CABLE, HF539 SERIES
 .050" 28 AWG STRANDED, MEDIUM FLEX LIFE, HALOGEN FREE PO

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| THIRD ANGLE PROJECTION | INTERPRET PER ASME Y14.5 - 2009 | MILLIMETERS | | TITLE MEDIUM FLEX LIFE FLAT CABLE, .050" 28 AWG, HF539 | | |
| MAX SURFACE ROUGHNESS | MARKED SURFACES | INCHES | | CAGE NUMBER D 78-5100-2565-9 | | |
| <input checked="" type="checkbox"/> MARKED ONLY | | ANGLES | | DRAWING NO. HF539 | | |
| | | | | REV. DATE JUN 11, 2018 REVISE NOTES 2, 5 & CYCLES CHART JNC BM | | |
| | | | | DIVISION EMSD | | |
| | | | | DRFT DATE NOV 05, 2012 | | |
| | | | | CHKD DATE NOV 05, 2012 | | |
| | | | | APPR R. EDWARDS | | |

78-5100-2565-9 DRAWING NUMBER
 B REVISION
 6/12/2018
 -- UTC
 Drr-set (hrs) 6
 Imaged: Central Standard