

3M™ Round, Shielded/Jacketed, Flat Cable

.050" 28 AWG Stranded, Mass-Term, Halogen Free PO/PO

HF659 Series



- Low Smoke Zero Halogen (LSZH) Insulation. Advantages of LSZH insulation are the low smoke (IEC 61034-2:2005), and low toxicity of combustion gases (NF X 70-100-2:2006), reducing the risk to firefighters, and reducing the soot and corrosion damage to nearby equipment
- Broad operating temperature range from -40°C to 105°C
- Round construction permits easier routing
- 28 AWG wire on .050 inch centers permits mass termination to broad line of IDC connectors
- Continuous split/bond repeat allows for mass termination of IDC connectors
- Dual shielding provides 35 db average shielding
- Primary cable is zippable for branching or discrete terminations
- See the Regulatory Information Appendix (RIA) in the "RoHS compliance" section of www.3Mconnectors.com for compliance information (RIA E1 & C1 apply)

Date Modified: June 7, 2013

TS-2335-C
Sheet 1 of 2

Physical

Jacket Material: Halogen Free Polyolefin (PO)

Color: Dark Gray

Primary Material: Halogen Free Polyolefin (PO)

Dark

Color: Gray

Marking Standard: None

Conductors: 28 AWG, 7 × 36 AWG [7 × Ø 0.127] Tinned Stranded Copper

Shielding: 0.001 [0.03] Thick Aluminum/Polyester Film Foil and 90% Coverage Tinned Copper Braid

Electrical

Voltage Rating: USA: 150V Canada: 150V EU: <50V

Insulation Resistance: (Primary Cable) > 1 × 10¹⁰ Ω/10 ft. [3 m]

Characteristic Impedance:	Unbalanced	Balanced
	54 Ω	107 Ω

Capacitance:	28.7 pF/ft [84.2 pF/m]	14.4 pF/ft [47.2 pF/m]
---------------------	--------------------------	--------------------------

Inductance:	0.08 μH/ft [0.27 μH/m]	0.16 μH/ft [0.52 μH/m]
--------------------	--------------------------	--------------------------

Propagation Delay:	1.55 ns/ft [4.95 ns/m]	1.54 ns/ft [4.95 ns/m]
---------------------------	--------------------------	--------------------------

Velocity of Propagation:	66%	66%
---------------------------------	-----	-----

Note: Unbalanced is measured between ground-signal-ground conductors. Balanced is measured between signal conductors within a pair.

Environmental

Temperature Rating: -40°C to +105°C

Flammability Rating: USA: VW-1

Canada: FT-1

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 and 2) any impurities present are less than 900 ppm bromine, less than 900 ppm chlorine and/or less than 1500ppm 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.

UL File No.: E42769, Style No.: 21683

3M

Interconnect Solutions

<http://www.3Mconnectors.com>

3M is a trademark of 3M Company.

For technical, sales or ordering information call

800-225-5373

3M™ Round, Shielded/Jacketed, Flat Cable

.050" 28 AWG Stranded, Mass-Term, Halogen Free PO/PO

HF659 Series

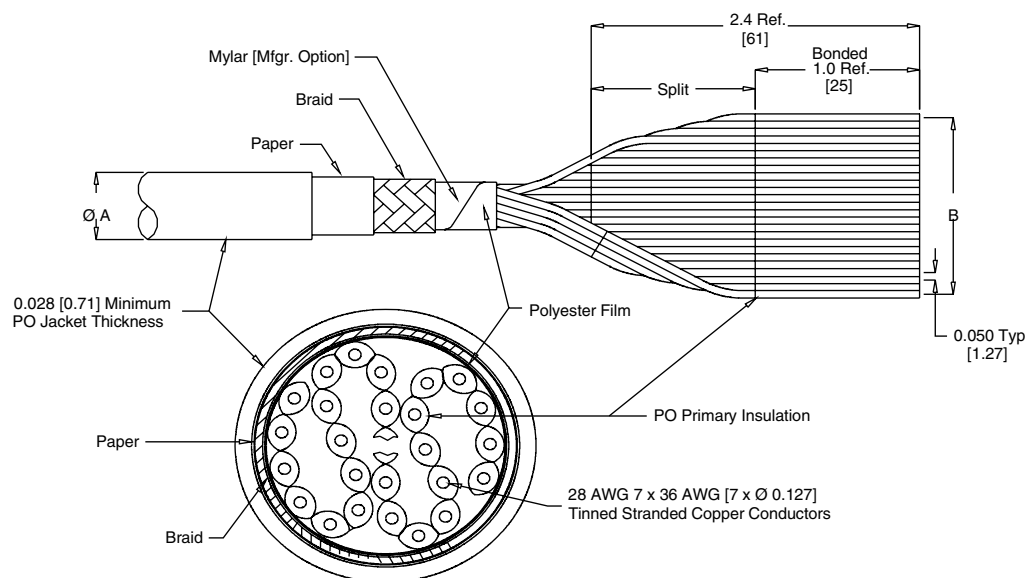


Inch
[mm]

Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.05	±.010

[] Dimensions for Reference Only

Number of Conductors	3M Part Number	Dimension A	Dimension B (See Note 2)
09	HF659/09	0.25 [.35]	0.40 [10.2]
10	HF659/10	0.25 [6.4]	0.45 [11.4]
14	HF659/14	0.3 [7.6]	0.65 [16.5]
15	HF659/15	0.3 [7.6]	0.70 [17.8]
16	HF659/16	0.3 [7.6]	0.75 [19.1]
20	HF659/20	0.33 [8.4]	0.95 [24.1]
24	HF659/24	0.34 [8.6]	1.15 [29.2]
25	HF659/25	0.34 [8.6]	1.20 [30.5]
26	HF659/26	0.34 [8.6]	1.25 [31.8]
34	HF659/34	0.37 [9.4]	1.65 [41.9]
36	HF659/36	0.41 [10.4]	1.75 [44.5]
37	HF659/37	0.41 [10.4]	1.80 [45.7]
40	HF659/40	0.41 [10.4]	1.95 [49.5]
50	HF659/50	0.45 [11.4]	2.45 [62.2]
60	HF659/60	0.48 [12.2]	2.95 [74.9]
64	HF659/64	0.48 [12.2]	3.15 [80.0]



Notes:

1. Blue marking on one edge of primary cable designates wire #1.
2. Dimension B pertains to bonded area only.

Ordering Information

HF659/XX XX XX (RIA E1 & C1 apply)

Number of Conductors
(See Table)

Blank = Standard
S0 = Continuously Bonded Wire
(No Split)

Blank = Standard
SF = Splice Free

Note: Available in standard 275 ft rolls. Contact 3M for availability of additional conductor counts and/or custom roll lengths.

TS-2335-C
Sheet 2 of 2

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.3Mconnectors.com

Please recycle. Printed in USA.
© 3M 2013. All rights reserved.
RIA-2217B-E

3M is a trademark of 3M Company.