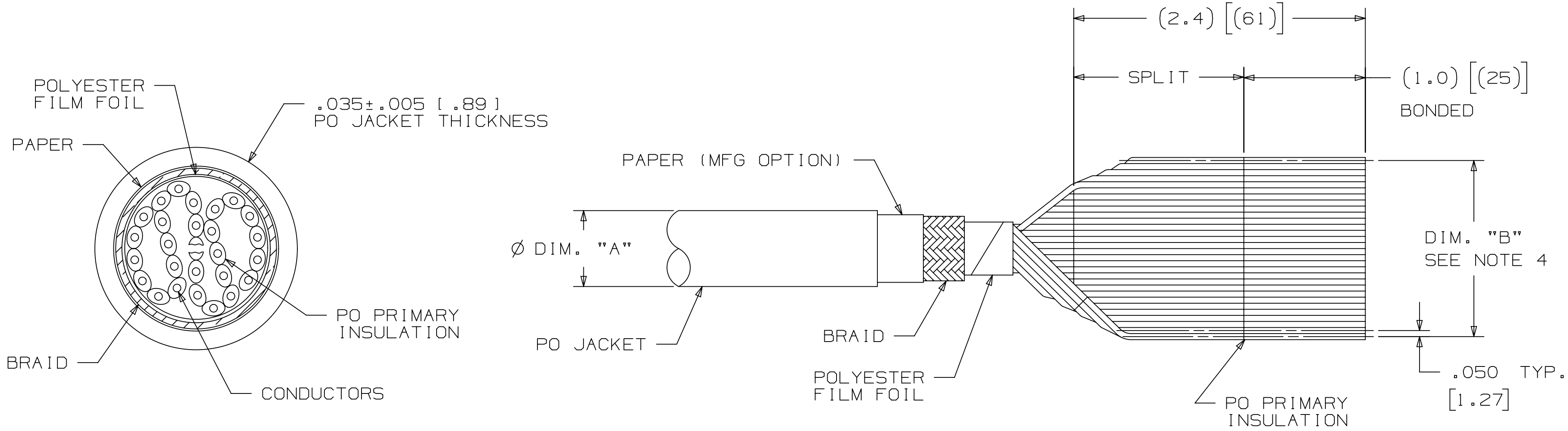


3M™ ROUND SHIELDED/JACKETED, FLAT CABLE, HF659 SERIES
.050" 28 AWG STRANDED, MASS TERMINATABLE, HALOGEN FREE PO/PO



ORDERING INFORMATION

HF659/XX XX XX

NUMBER OF CONDUCTORS
(SEE TABLE 1)

BLANK = STANDARD
SF = SPLICE FREE

BLANK = STANDARD
SO = CONTINUOUSLY BONDED WIRE (NO SPLIT)

NOTE:
AVAILABLE IN STANDARD 275FT ROLLS. CONTACT 3M
FOR AVAILABILITY OF ADDITIONAL CONDUCTOR COUNTS
AND/OR CUSTOM ROLL LENGTHS.

2 PHYSICAL :

JACKET MATERIAL: HALOGEN FREE POLYOLEFIN (PO)
COLOR: DARK GRAY
PRIMARY MATERIAL: HALOGEN FREE POLYOLEFIN (PO)
COLOR: DARK GRAY

MARKING:
STANDARD: NONE
CONDUCTORS: 28 AWG, 7 X 36 AWG [7 X Ø .127] TINNED STRANDED COPPER
SHIELDING: .001 [.03] THICK ALUMINUM/POLYESTER FILM FOIL AND 90%
COVERAGE TINNED COPPER BRAID.

2 ELECTRICAL :

VOLTAGE RATING: USA 300V CANADIAN 150V EU: <50V
INSULATION RESISTANCE: (PRIMARY CABLE) >1 X 10¹⁰Ω/10ft. [3m]

CHARACTERISTIC IMPEDANCE: UNBALANCED 54Ω BALANCED 107Ω
CAPACITANCE: 28.7 pF/ft [84.2 pF/m] 14.4 pF/ft [47.2 pF/m]
INDUCTANCE: .08μH/ft [.27μH/m] .16μH/ft [.52μH/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 CONDUCTORS WITHIN A PAIR.
"MEASURED VALUES ARE TYPICAL"

2 ENVIRONMENTAL :

TEMPERATURE RATING: -40°C TO +105°C (EIA-364-32G, METHOD A, TEST CONDITION 2)
-15°C TO +75°C (UL TEMPERATUR E RATING)

FLAMMABILITY RATING: INTERNAL: HORIZONTAL FLAME PER UL758
EXTERNAL: CABLE FLAME (VERTICAL) PER UL758

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 900ppm BROMINE, LESS THAN 900ppm CHLORINE AND/OR LESS THAN 1500ppm TOTAL
BROMINE AND CHLORINE. THE LATTER ARE THE LEVELS SET FORTH IN CERTIAN INDUSTRY STANDARDS FOR
PRINTED CIRCUIT BOARDS, SUCH AS THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) 61249-2-21
STANDARDS. 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.

3M ELECTRONICS MATERIALS SOLUTIONS DIVISION
INTERCONNECT SOLUTIONS
<http://www.3M.com/interconnect>

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INFORMATION CALL 800-225-5373




UL FILE NO: E42769,
UL STYLE NO: 22170

INCH [MM]		
TOLERANCE - UNLESS NOTED		
	±.X	±.XX
[INCH]	±.1	±.05
[] = DIM. FOR REFERENCE ONLY		±.010

- NOTES
1. 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.
 2. IN THE EVENT OF CONFLICT
BETWEEN THIS DATA AND THAT
CONTAINED IN THE PRODUCT
SPECIFICATION, THE PRODUCT
SPECIFICATION TAKES PRECEDENT.
 3. BLUE MARKING ON ONE EDGE OF
PRIMARY CABLE DESIGNATES
WIRE #1.
 4. DIMENSION "B" PERTAINS TO
BONDED AREA ONLY.

- * 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.
- * ROUND CONSTRUCTION PERMITS MORE EASY ROUTING.
- * 28 AWG WIRE ON .050 INCH CENTERS PERMITS MASS
TERMINATION TO BROAD LINE OF IDC CONNECTORS.
- * CONTINUOUS SPLIT/BOND REPEAT ALLOWS FOR MASS
TERMINATIONS OF IDC CONNECTORS.
- * DUAL SHIELDING PROVIDES 35 dB AVERAGE SHIELDING.
- * PRIMARY CABLE IS ZIPPABLE FOR BRANCHING OR
DISCRETE TERMINATION.

TABLE 1			
NO. OF CONDUCTORS	3M PART NUMBER	DIM. "A"	DIM. "B"
09	HF659/09	.25 [6.4]	.40 [10.2]
10	HF659/10	.25 [6.4]	.45 [11.4]
14	HF659/14	.30 [7.6]	.65 [16.5]
15	HF659/15	.30 [7.6]	.70 [17.8]
16	HF659/16	.30 [7.6]	.75 [19.1]
20	HF659/20	.33 [8.4]	.95 [24.1]
24	HF659/24	.34 [8.6]	1.15 [29.2]
25	HF659/25	.34 [8.6]	1.20 [30.5]
26	HF659/26	.34 [8.6]	1.25 [31.8]
30	HF659/30	.37 [9.4]	1.45 [36.8]
34	HF659/34	.37 [9.4]	1.65 [41.9]
36	HF659/36	.41 [10.4]	1.75 [44.5]
37	HF659/37	.41 [10.4]	1.80 [45.7]
40	HF659/40	.41 [10.4]	1.95 [49.5]
50	HF659/50	.45 [11.4]	2.45 [62.2]
60	HF659/60	.48 [12.2]	2.95 [74.9]
64	HF659/64	.48 [12.2]	3.15 [80.0]

DESIGN REFERENCE		NEXT ASSEMBLY		REV	ECO	ISSUE DATE AND DESCRIPTION		DRFT	CHKD
ACCESS CODES				DRFT	CASTIGLIONE	DATE	MAY 29, 2018	WFG	DATE
				CHKD		DATE		APPR	DATE
								SR - MIZE	MAY 29, 2018
DIVISION		DIVISION CODE		© 3M COPYRIGHT 2024					
		EMSD		 3M Center St. Paul, MN 55144		This document and the information it contains are 3M property and may not be reproduced or further distributed without the express permission, or used or disclosed other than for 3M authorized purposes. All rights reserved.			
DO NOT SCALE DRAWING		SCALE							
		TOLERANCES EXCEPT AS NOTED							
		</							

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3M™ ROUND SHIELDED/JACKETED, FLAT CABLE, HF659 SERIES

.050" 28 AWG STRANDED, MASS TERMINATABLE, HALOGEN FREE PO/PO

Regulatory: For regulatory information about this product, visit 3M.com/regs or contact your 3M representative.

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DESIGN REFERENCE

NEXT ASSEMBLY

ADDER CODES

DIVISION

DO NOT SCALE DRAWING



THIRD ANGLE PROJECTION

INTERPRET PER ASME Y14.5 - 2018

MAX. SURFACE ROUGHNESS



ALL SURFACES

MARKED ONLY

DIVISION CODE

EMSD

TOLERANCES EXCEPT AS NOTED

INCHES

±

.0

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.008

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MILLIMETERS

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ANGLES ±

REV

ECO

ISSUE DATE AND DESCRIPTION

DRFT

CHKD

DRFT

CASTIGLIONE

DATE

MAY 29,2018

MFG

DATE

CHKD

DATE

APPR

B. MIZE

DATE

MAY 29,2018



3M Center
St. Paul,
MN 55144

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TITLE

RD SHIELDED/JACKETED,
FLAT CABLE, HF659
SERIES

CAGE NUMBER

SIZE

DRAWING NO.

REV.

D

78-5100-2335-7

G

MODEL

HF659

DET

LISTs

YES

NO

SHT 2 OF 2

8

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3

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Revision

78-5100-2335-7

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