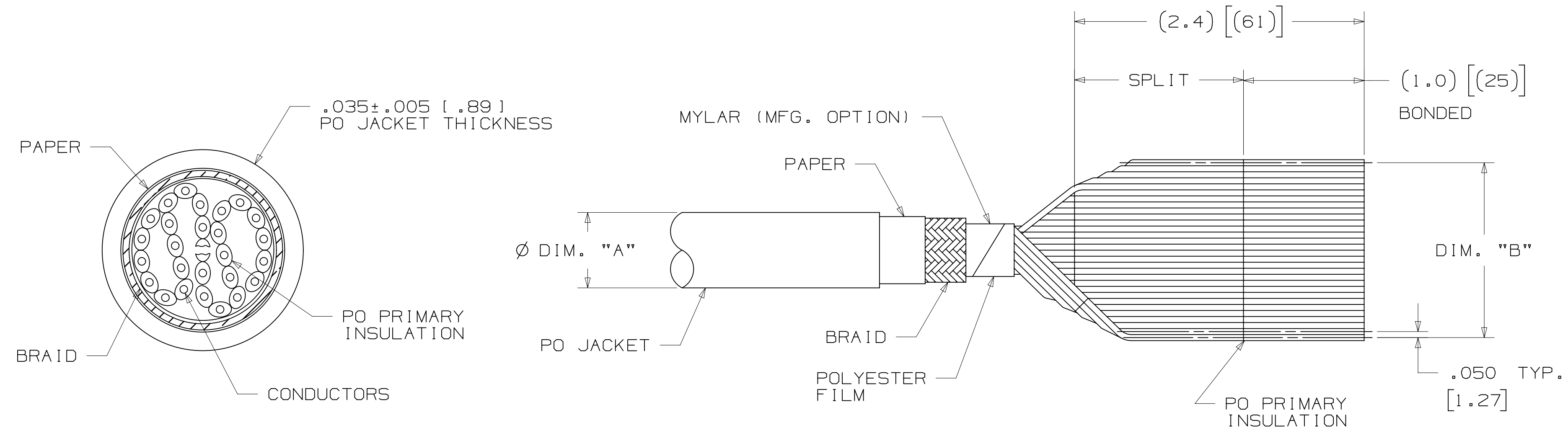


3M™ ROUND, SHIELDED/JACKETED, FLAT CABLE, HF659 SERIES

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



NOTE:
 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

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

CHARACTERISTIC IMPEDANCE:	UNBALANCED	BALANCED	
	54Ω	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 TEMPERATURE 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 CERTAIN 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.

NOTES

- 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.
- IN THE EVENT OF CONFLICT BETWEEN THIS DATA AND THAT CONTAINED IN THE PRODUCT SPECIFICATION, THE PRODUCT SPECIFICATION TAKES PRECEDENT.

- * 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.

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]

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

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UL FILE NO: E42769,
 UL STYLE NO: 22170

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

DESIGN REFERENCE	NEXT ASSEMBLY	REV	ECO	ISSUE DATE AND DESCRIPTION	DRFT	CHKD
		80157	ECO	AUG 01, 2018	JNC	BM
		79295	ECO	MAY 29, 2018	JNC	BM
			ECO	REVISED ELECTRICAL & ENVIRONMENTAL NOTES		
			ECO	REVISED AND REDRAWN		
DATE	DATE	DATE	DATE	DATE	DATE	DATE
CASTIGLIONE	MAY 29, 2018	MFG				
		B. MIZE		MAY 29, 2018		
DIVISION	DIVISION CODE		EMSD			
DO NOT SCALE DRAWING	SCALE	TOLERANCES EXCEPT AS NOTED				
THIRD ANGLE PROJECTION		INCHES				
		.00				
		.000 ±				
		.0000 ±				
		MILLIMETERS				
		0 ±				
		.00 ±				
		.000 ±				
		.000 ±				
		MARKED ONLY				
		ANGLES				
3M Center St. Paul, MN 55144		© 3M COPYRIGHT 2018				
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		ROUND, SHIELDED / JACKETED, FLAT, CABLE, .050", HF659				
CAGE NUMBER	SIZE	DRAWING NO.	REV.			
D		78-5100-2335-7	E			
MODEL	DEF	LISTS	YES	NO	SHT 1 OF 2	
HF659						

8 7 6 5 4 3 2 1

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	REV	ECO	ISSUE DATE AND DESCRIPTION	DRFT	CHKD
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THIRD ANGLE PROJECTION	INTERPRET PER ASME Y14.5 - 2009	MILLIMETERS	TITLE ROUND, SHIELDED / JACKETED, FLAT, CABLE, .050", HF659			
MAX SURFACE ROUGHNESS	MARKED ONLY	INCHES	CAGE NUMBER	SIZE	DRAWING NO.	REV.
			D	78-5100-2335-7	E	
			MODEL	HF659	DET	LISTS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO SHT 2 OF 2

E REVISION
 78-5100-2335-7 DRAWING NUMBER
 B
 A
 Time 8/1/2018 11:53:11 AM UTC Offset (hrs) 6

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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