

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

HF659/XX XX XX

- BLANK = STANDARD
SF = SPLICE FREE

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

2 PHYSICAL :

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 :

	UNBALANCED	BALANCED
CHARACTERISTIC IMPEDANCE:	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 :

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.

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

DESIGN REFERENCE		NEXT ASSEMBLY		REV	ECO	ISSUE DATE AND DESCRIPTION		DRFT	CHKD
ADDRESS CODES				DRFT	CASTIGLIONE		DATE	MFG	DATE
				CHKD			DATE	ABSL	DATE
						B - MIZE		MAY 29, 2018	
DIVISION		DIVISION CODE		 3M Center St. Paul, MN 55144		© 3M COPYRIGHT 2018 This document and the information it contains are 3M property and may not be reproduced or further distributed without the 3M permission, or used or disclosed other than for 3M authorized purposes. All rights reserved.			
DO NOT SCALE DRAWING		TOLERANCES EXCEPT AS NOTED							
				TITLE		ROUND, SHIELDED / JACKETED, FLAT, CABLE, .050", HF659			
THIRD ANGLE PROJECTION INTERPRET PER ASME Y14.5 - 2009		INCHES .00 .000 .000 ± .000 ±							
MAX. SURFACE ROUGHNESS  MAX. SURFACES ☒ MARKED ONLY		MILLIMETERS .00 .00 .000 ± .000 ±		CASE NUMBER		SIZE		DRAWING NO.	
				MODEL		DET.		SHT 1 OF 2	
				HF659		YES ☒ NO ☐			

