

.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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INFORMATION CALL 800-225-5373



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				DRFT	CASTIGLIONE		DATE	MFG	DATE
				CHRD			DATE		
						APPR	B. MIZE		DATE
								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 3M permission. No use or disclosed other than 3M authorized purposes. All rights reserved.			
		EMSD							
DO NOT SCALE DRAWING		TOLERANCES EXCEPT AS NOTED				TITLE ROUND, SHIELDED / JACKETED, FLAT, CABLE, .050", HF659			
THIRD ANGLE PROJECTION		INCHES		CAGE NUMBER D		SIZE 78-5100-2335-7		REV. E	
INTERPRET PER ASME Y14.5 - 2009		MILLIMETERS							
MAX. SURFACE ROUGHNESS		.0000 ±		MODEL HF659		DET. 1		YES ☐ NO ☒	
☒ MARKED SURFACES ☐ MARKED ONLY		.000 ±							
		ANGLE						SHT 1 OF 2	

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.

78-5100-2335-7	E
DRAWING NUMBER	REVISION

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