

REVISIONS						DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398			
DCP #	REV	DESCRIPTION				DRAWN	DATE	CHECKD	DATE
1199	C	Renamed—was PHD—***—****—***				JWM	9/24/01	JC	10/16/01
1857	D	RoHS Added				DCM	12/12/05	JWM	3/17/06



The PHD series is a flexible, polyolefin, thin wall tubing which offers the advantages of an integral adhesive lining. Provides excellent environmental protection for electronic components.

Shrink Ratio: 2:1 Shrink Temp: 121°C (250°F) Operating Temp: -55°C~100°C (-67°F~230°F)

Dimensions				Standard Packages(Color: Black)					
Size	Expanded I.D. (Min)	Recovered I.D. (Max)	Recovered Nominal Wall Thickness	4 Foot Lengths (+1", -0")			6 Inch Lengths (± .125")		
				Type No.	Pcs	Total Footage	Type No.	Pcs	Total Footage
1/8"	.125"	.063"	.027"	PHD-008-4025-BLK	25	100 FT	PHD-008-6028-BLK	28	14 FT
3/16"	.187"	.093"	.027"	PHD-012-4025-BLK	25	100 FT	PHD-012-6025-BLK	24	12 FT
1/4"	.250"	.125"	.030"	PHD-016-4025-BLK	25	100 FT	PHD-016-6020-BLK	20	10 FT
3/8"	.375"	.187"	.031"	PHD-024-4025-BLK	25	100 FT	PHD-024-6016-BLK	16	8 FT
1/2"	.500"	.250"	.032"	PHD-032-4005-BLK	5	20 FT	PHD-032-6014-BLK	14	7 FT
3/4"	.750"	.375"	.037"	PHD-048-4005-BLK	5	20 FT	PHD-048-6012-BLK	12	6 FT
1"	1.000"	.500"	.046"	PHD-064-4005-BLK	5	20 FT	PHD-064-6008-BLK	8	4 FT
1 1/2"	1.500"	.750"	.049"	PHD-096-4005-BLK	5	20 FT	PHD-096-6005-BLK	5	2.5 FT
2"	2.000"	1.000"	.060"	PHD-128-4002-BLK	2	8 FT	PHD-128-6002-BLK	2	1 FT

TYPICAL PROPERTIES

Physical

Tensile Strength 2100 PSI
 Ultimate Elongation 450%
 Longitudinal Change +1%, -5%
 Secant Modulus (2%) 17,000 PSI
 *Heat Aging Elongation 175%
 (168 hrs @ 175°C)
 *Heat Shock No dripping,
 (4 hrs @ 250°C) cracking, or flowing
 *Low Temp Flexibility No cracking
 (4 hrs @ -55°C)
 **Flexibility: 3
 Flammability: Self-extinguishing, meets UL 224
 All-Tubing Flame Test (jacket)

Electrical

Dielectric Strength 800 V/mil
 Volume Resistivity 10¹⁴ ohm-cm

Chemical

Corrosive Effect Non-corrosive
 Water Absorption 0.3%
 Fungus Resistance Non-nutrient
 Fluid Resistance Excellent
 Applicable Specifications: MIL-DTL-23053/4 Class 2

Adhesive

Peel Strength, pli
 Polyethylene 30
 PVC 10
 Lead 15
 Aluminum 40



Corrosive Effect (Copper Mirror) Non-corrosive

*Outer wall only.

**Flexibility: The materials are rated on a scale of 1~10. (1=most flexible and 10=most rigid)

The technical information provided consists of typical product data and should not be used for specification purposes.

SPC-F004.DWG Unless otherwise noted, all tests are performed at room temperature.

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	JAP	1/17/92	PHD Series—Flame Retardant, Adhesive—Lined Tubing			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	JC	1/27/92	A	TA-410	TA-410.dwg	D
	APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: INCHES [mm]	SHEET: 1 OF 1