

3:1 SHRINK RATIO
MILSPEC SAE-AMS-DTL-23053/5 CL1&3
RoHS COMPLIANT
UL RECOGNIZED COMPONENT
E306685 cUL CERTIFIED
UL 224 VW-1 FLAME TEST
HALOGEN FREE

GMT-321-FLT is a specially designed flattened 3:1 heat shrinkable tube for thermal transfer marking. This product is compatible with the Gamma Mark™ III, the Gamma Bolt and the Gamma Double Mark™ printing systems. The increased shrink ratio from GMT-321-FLT allows coverage for irregular sizes. It has excellent physical, chemical, and electrical properties. Few sizes cover a variety of diameters, which allows for inventory reduction and coverage for irregular shapes.

Its flexibility allows it to run through all our printers easily and quickly. When used with the approved ribbons and printers, outstanding print permanence may be achieved. This material is ideal for identifying commercial and mil-spec cable assemblies. Great for covering and identifying back shells, large cables as large as two inches OD to small wires.

GMT-321-FLT Applications:

- High Volume Wire Marking and Identification
- Packages on Spools for Inline Printing and Cutting



Applications

- Operating Temperature: -55 to 135°C
- Shrink Temperature: 85°C Flame Retardant
- Highly Flame Retardant (Except Clear)
- UL 224 VW-1 Flame Test Shrink Ratio: 2:1 and 3:1
- Environmentally Friendly
- Colors: Standard Packaging Available in White, Yellow, and Black

Prescore Dimensions & Standards

Size	Tube Spacing mm (E)	Tube Length (K) - Full (mm)	Tube Length (K) - Half (mm)	Tube Length (K) - Quarter (mm)
2.4 (2X, 3X)	11.0±0.5	60.0±0.5	0.30±0.05	15.00±0.25
3.2 (2X, 3X)	11.0±0.5	60.0±0.5	0.30±0.05	15.00±0.25
4.8 (2X, 3X)	13.6±0.5	60.0±0.5	0.30±0.05	15.00±0.25
6.4 (2X, 3X)	16.6±0.5	60.0±0.5	0.30±0.05	15.00±0.25
9.5 (2X, 3X)	21.6±0.5	60.0±0.5	0.30±0.05	15.00±0.25
12.7 (2X, 3X)	26.8±0.5	60.0±0.5	0.30±0.05	15.00±0.25
19.1 (2X, 3X)	38.2±0.5	60.0±0.5	0.30±0.05	15.00±0.25
25.4 (2X, 3X)	47.7±0.5	60.0±0.5	0.30±0.05	15.00±0.25
38.1 (2X, 3X)	69.0±0.5	60.0±0.5	0.30±0.05	15.00±0.25
50.8 (2X, 3X)	87.7±0.5	60.0±0.5	0.30±0.05	15.00±0.25

Print Performance

Test Method	Standard
UL 224	50 Rubber Erasure, Identification
MIL-M-81531-4.6.2	50 Rubber Erasure, Identification
MIL-STD-202	50 Rubber Erasure, Identification

Tubing Physical and Electrical Properties

Property	Standard
Tensile Strength, MPa	≥6.5
Elongation at Break, %	≥100
Dielectric Strength, kV/mm	≥15
Volume Resistivity, Ω-cm	≥10 ¹⁴
Flammability	Average burn time < 1s
Flexibility	No Cracking



GMT-321-FLT

High Performance Marking Sleeve

Dimensions in millimeters

Gamma Part No. with Nominal Size in inches	Nominal Size		As Supplied			After Recovery	
			Inside Diameter	Wall Thickness	Outside Diameter	Wall Thickness	Inside Diameter
	mm	inch	mm	mm	mm	mm	mm
GMT-321-3/32(-)-FLT	2.4	3/32	≥2.4	0.20±0.05	4.9±0.5	0.40±0.10	≤0.79
GMT-321-1/8(-)-FLT	3.2	1/8	≥3.2	0.20±0.05	6.1±0.5	0.40±0.10	≤1.07
GMT-321-3/16(-)-FLT	4.8	3/16	≥4.8	0.20±0.05	8.4±0.5	0.40±0.10	≤1.57
GMT-321-1/4(-)-FLT	6.4	1/4	≥6.4	0.20±0.05	11.2±0.8	0.40±0.10	≤2.11
GMT-321-3/8(-)-FLT	9.5	3/8	≥9.5	0.20±0.05	16.8±0.8	0.40±0.10	≤3.18
GMT-321-1/2(-)-FLT	12.7	1/2	≥12.7	0.20±0.05	21.8±1.0	0.40±0.10	≤4.22
GMT-321-3/4(-)-FLT	19.1	3/4	≥19.1	0.30±0.06	33.4±1.0	0.60±0.15	≤6.35
GMT-321-1(-)-FLT	25.4	1	≥25.4	0.30±0.06	42.4±1.5	0.60±0.15	≤8.46
GMT-321-1-1/2(-)-FLT	38.1	1-1/2	≥38.1	0.30±0.06	63.7±1.5	0.60±0.15	≤12.7
GMT-321-2(-)-FLT	50.8	2	≥50.8	0.30±0.06	82.2±1.5	0.60±0.15	≤16.9

Dimensions in inches

Gamma Part No. with Nominal Size in inches	Nominal Size		As Supplied			After Recovery	
			Inside Diameter	Wall Thickness	Outside Diameter	Wall Thickness	Inside Diameter
	mm	inch	inches	inches	inches	inches	inches
GMT-321-3/32(-)-FLT	2.4	3/32	≥0.094	0.008±0.002	0.19±0.02	0.016±0.004	≤0.031
GMT-321-1/8(-)-FLT	3.2	1/8	≥0.126	0.008±0.002	0.24±0.02	0.016±0.004	≤0.042
GMT-321-3/16(-)-FLT	4.8	3/16	≥0.189	0.008±0.002	0.33±0.02	0.016±0.004	≤0.062
GMT-321-1/4(-)-FLT	6.4	1/4	≥0.252	0.008±0.002	0.44±0.03	0.016±0.004	≤0.083
GMT-321-3/8(-)-FLT	9.5	3/8	≥0.374	0.008±0.002	0.66±0.03	0.016±0.004	≤0.125
GMT-321-1/2(-)-FLT	12.7	1/2	≥0.500	0.008±0.002	0.86±0.04	0.016±0.004	≤0.166
GMT-321-3/4(-)-FLT	19.1	3/4	≥0.752	0.012±0.002	1.31±0.04	0.023±0.006	≤0.250
GMT-321-1(-)-FLT	25.4	1	≥1.00	0.012±0.002	1.67±0.06	0.023±0.006	≤0.333
GMT-321-1-1/2(-)-FLT	38.1	1-1/2	≥1.50	0.012±0.002	2.51±0.06	0.023±0.006	≤0.500
GMT-321-2(-)-FLT	50.8	2	≥2.00	0.012±0.002	3.24±0.06	0.023±0.006	≤0.665

Ordering Information

PN: GMT-321-1/4-9-FLT = 1/4" ID 3:1 Shrink Ratio White Marking Sleeve

Standard Colors are White, Yellow and Black. Other colors available upon request.

Color Code: 0=BLK, 1=BRN, 2=RED, 3=ORN, 4=YLW, 5=GRN, 6=BLU, 7=VIO, 8=GRY, 9=WHT