

# ALPHA WIRE COMPANY

## CUSTOMER PRODUCT SPECIFICATION

Part Number: FIT221	Issue: 7
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	Effective Date: 10/22/2009

## A. Construction

1) Tubing Type Heat Shrinkable Tubing  
2) Tubing Material Cross Linked Polyolefin  
3) Color(s) BLACK, WHITE, CLEAR, RED, YELLOW, BLUE, GREEN

Part Number	Minimum Supplied ID (In)	Maximum Recovered ID (In)	Nominal Recovered Wall Thickness (In)
FIT-221-3/64	0.046	0.023	0.016
FIT-221-1/16	0.063	0.031	0.017
FIT-221-3/32	0.093	0.046	0.020
FIT-221-1/8	0.125	0.062	0.020
FIT-221-3/16	0.187	0.093	0.020
FIT-221-1/4	0.250	0.125	0.025
FIT-221-3/8	0.375	0.187	0.025
FIT-221-1/2	0.500	0.250	0.025
FIT-221-3/4	0.750	0.375	0.030
FIT-221-1	1.000	0.500	0.035
FIT-221-1-1/2	1.500	0.750	0.040
FIT221-2	2.000	1.000	0.045
FIT221-3	3.000	1.500	0.050
FIT221-4	4.000	2.000	0.055

## B. Industry Approvals

1) UL	Standard 224 (Except Clear)
2) CSA International	Standard 198 (Except Clear)
3) Other	AMS-DTL-23053/5 Class 1 (Except Clear) AMS-DTL-23053/5 Class 2 (Clear Only)

### C. Environmental Approvals

1) EU Directive 2002/95/EC(RoHS): All materials used in the manufacture of this part are in compliance with EU Directive 2002/95/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. Consult Alpha Wire's web site for compliance Date of Manufacture.

2) REACH Regulation (EC 1907/2006): This product does not contain any of the 16 substances listed on the European Union's REACH Substance of Very High Concern (SVHC) candidate list in excess of 0.1% mass of the item.

3) California Proposition 65: The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65.

## D. Physical & Mechanical Properties

1) Temperature Range	-55 to 135°C	
2) Shrink Ratio	Approximately 2:1	
3) Full Recovery Temperature	121°C	
4) Minimum Shrink Temperature	90°C	
5) Tensile Strength	1500psi, Min	ASTM D638
6) Elongation	200%, Min	ASTM D638
7) Low Temperature Flex(-55°C)	no cracking	AMS-DTL-23053
8) Heat Shock(250°C,4hrs)	no cracking	AMS-DTL-23053
9) Secant Modulus	$2.5 \times 10^4$ psi, Min	ASTM D882
10) Longitudinal Change	+/-5%	AMS-DTL-23053
11) Specific Gravity(Colors)	1.35, Max	ASTM D792

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Specific Gravity(Clear)	1.00, Max	
12) Shelf Life	5 Years @ 18 to 35°C	
<b>E. Electrical Properties</b>		
1) Dielectric Strength	500 V/mil, Min	ASTM D876
2) Volume Resistivity	1x10 <sup>14</sup> ohm-cm, Min	ASTM D876
<b>F. Chemical Properties</b>		
1) Water Absorption	0.50%, Max	ASTM D570
2) Corrosion(0°C,16hrs)	no corrosion	AMS-DTL-23053
3) Fluid Resistance(23°C,24 Hrs)	1000 PSI, Min	AMS-DTL-23053
4) Fungus Resistance	Pass	AMS-DTL-23053
5) Halogen Free	No	
6) Lead Free	Yes	
<b>G. Other</b>		
1) Packaging		
a) FIT-221-3/64	1000 FT, 25X4 FT, 1000X1 IN, 1000X1/2IN, 40X6 IN	
b) FIT-221-1/16	1000 FT, 100 FT, 25X4 FT, 1000X1 IN, 70 FT, 1000X1/2IN, 36X6 IN	
c) FIT-221-3/32	500 FT, 100 FT, 25X4 FT, 1000X1 IN, 65 FT, 32X6 IN, 100X1/2 IN	
d) FIT-221-1/8	500 FT, 100 FT, 25X4 FT, 1000X1 IN, 60 FT, 1000X1/2IN, 28X6 IN	
e) FIT-221-3/16	1000X4 FT, 500 FT, 100 FT, 25X4 FT, 1000X1 IN, 50 FT, 1000X1/2IN, 24X6 IN	
f) FIT-221-1/4	250 FT, 100 FT, 25X4 FT, 1000X1 IN, 40 FT, 1000X1/2IN, 20X6 IN	
g) FIT-221-3/8	200 FT, 25X4 FT, 1000X1 IN, 50 FT, 35 FT, 16X6 IN, 100X1/2 IN	
h) FIT-221-1/2	150 FT, 50 FT, 32 FT, 5X4 FT, 14X6 IN	
i) FIT-221-3/4	250 FT, 50 FT, 24 FT, 5X4 FT, 12X6 IN	
j) FIT-221-1	250X4 FT, 250 FT, 50 FT, 5X4 FT, 16 FT, 100X1 IN, 8X6 IN	
k) FIT-221-1-1/2	125 FT, 5X4 FT, 5X6 IN	
l) FIT221-2	250X4 FT, 125 FT, 5X4 FT, 2X6 IN	
m) FIT221-3	250X4 FT, 100 FT, 2X4 FT, 2X6 IN	
n) FIT221-4	250X4 FT, 50 FT, 2X4 FT	

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