

**ALPHA WIRE COMPANY
CUSTOMER PRODUCT SPECIFICATION**

Part Number: FIT221
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Issue: 6
Issue Date: 12/31/2008
Effective Date: 3/1/2009

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)
FIT221-3/64	0.046	0.023	0.016
FIT221-1/16	0.063	0.031	0.017
FIT221-3/32	0.093	0.046	0.020
FIT221-1/8	0.125	0.062	0.020
FIT221-3/16	0.187	0.093	0.020
FIT221-1/4	0.250	0.125	0.025
FIT221-3/8	0.375	0.187	0.025
FIT221-1/2	0.500	0.250	0.025
FIT221-3/4	0.750	0.375	0.030
FIT221-1IN	1.000	0.500	0.035
FIT221-1 1/2	1.500	0.750	0.040
FIT221-2IN	2.000	1.000	0.045
FIT221-3IN	3.000	1.500	0.050
FIT221-4IN	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)
REACH Regulation (EC 1907/2006) |
| 4) 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. |
| 5) California Proposition 65: | The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65. |

C. 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 | 2.5x10 ⁴ psi, Min | ASTM D882 |
| 10) Longitudinal Change | +/-5% | AMS-DTL-23053 |
| 11) Specific Gravity(Colors) | 1.35, Max | ASTM D792 |
| Specific Gravity(Clear) | 1.00, Max | |
| 12) Shelf Life | 5 Years @ 0 to 35°C | |

D. Electrical Properties

- | | | |
|------------------------|----------------|-----------|
| 1) Dielectric Strength | 500 V/mil, Min | ASTM D876 |
|------------------------|----------------|-----------|

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|-----------|---|--------------------------------|---------------|
| | 2) Volume Resistivity | 1x10 ¹⁴ ohm-cm, Min | ASTM D876 |
| E. | Chemical Properties | | |
| | 1) Water Absorption(Colors) | 0.50%, Max | ASTM D570 |
| | Water Absorption(Clear) | 0.20%, Max | |
| | 2) Fluid Resistance(23°C,24 Hrs) | 1000 PSI, Min | AMS-DTL-23053 |
| | 3) Vacuum Outgassing - CVCM | 0.1%, Max | ASTM E595 |
| | 4) Halogen Free | Yes – Clear Only | |
| | 5) Lead Free | Yes – Clear Only | |
| F. | Other | | |
| | 1) Packaging | | |
| | a) FIT221-3/64 | | |
| | 1000 FT, 25X4 FT, 1000X1 IN, 1000X1/2IN, 40X6 IN | | |
| | b) FIT221-1/16 | | |
| | 1000 FT, 25X4 FT, 100 FT, 1000X1 IN, 70 FT, 1000X1/2IN, 36X6 IN | | |
| | c) FIT221-3/32 | | |
| | 500 FT, 25X4 FT, 100 FT, 1000X1 IN, 65 FT, 1000X1/2IN, 32X6 IN | | |
| | d) FIT221-1/8 | | |
| | 500 FT, 100 FT, 25X4 FT, 1000X1 IN, 60 FT, 1000X1/2IN, 28X6 IN | | |
| | e) FIT221-3/16 | | |
| | 500 FT, 25X4 FT, 100 FT, 1000X1 IN, 50 FT, 1000X1/2IN, 24X6 IN | | |
| | f) FIT221-1/4 | | |
| | 250 FT, 100 FT, 25X4 FT, 1000X1 IN, 40 FT, 1000X1/2IN, 20X6 IN | | |
| | g) FIT221-3/8 | | |
| | 200 FT, 25X4 FT, 1000X1 IN, 50 FT, 35 FT, 1000X1/2IN, 16X6 IN | | |
| | h) FIT221-1/2 | | |
| | 150 FT, 50 FT, 32 FT, 5X4 FT, 14X6 IN | | |
| | i) FIT221-3/4 | | |
| | 250 FT, 50 FT, 24 FT, 5X4 FT, 12X6 IN | | |
| | j) FIT221-1IN | | |
| | 250 FT, 50 FT, 5X4 FT, 16 FT, 8X6 IN | | |
| | k) FIT221-11/2 | | |
| | 125 FT, 5X4 FT, 5X6 IN | | |
| | l) FIT221-2IN | | |
| | 125 FT, 5X4 FT, 3X6 IN | | |
| | m) FIT221-3IN | | |
| | 100 FT, 2X4 FT, 2X6 IN | | |
| | n) FIT221-4IN | | |
| | 50 FT, 2X4 FT | | |

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