

ALPHA WIRE COMPANY

CUSTOMER PRODUCT SPECIFICATION

Part Number: FIT221
Page 1 of 2 Pages

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 |
|------------------------|----------------|-----------|

Although Alpha Wire Company ("Alpha") makes every reasonable effort to ensure their accuracy at the time of publication, information and specifications described herein are subject to errors or omissions and to changes without notice, and the listing of such information and specifications does not ensure product availability.

Alpha provides the information and specifications herein on an "AS IS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Alpha be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary) whatsoever, even if Alpha has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

ALPHA WIRE COMPANY
CUSTOMER PRODUCT SPECIFICATION

Part Number: FIT221	Issue: 6
Page 2 of 2 Pages	Issue Date: 12/31/2008
	Effective Date: 3/1/2009

- | | | |
|-----------------------|--------------------------------|-----------|
| 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

Although Alpha Wire Company ("Alpha") makes every reasonable effort to ensure their accuracy at the time of publication, information and specifications described herein are subject to errors or omissions and to changes without notice, and the listing of such information and specifications does not ensure product availability.

Alpha provides the information and specifications herein on an "AS IS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Alpha be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary) whatsoever, even if Alpha has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.