

**ALPHA WIRE**  
**CUSTOMER PRODUCT SPECIFICATION**

**Part Number: FIT221L**  
**Page 1 of 2 Pages**

**Issue: 1**  
**Issue Date: 2/25/2014**  
**Effective Date: 3/25/2014**

**A. Construction**

- |                    |                        |
|--------------------|------------------------|
| 1) Tubing Type     | Heat Shrinkable Tubing |
| 2) Tubing Material | LSZH Polyolefin        |
| 3) Color(s)        | BLACK                  |

Part Number	Minimum Supplied ID (In)	Maximum Recovered ID (In)	Nominal Recovered Wall Thickness (In)
FIT221L3/64	0.046	0.023	0.013
FIT221L1/16	0.063	0.031	0.014
FIT221L3/32	0.094	0.046	0.017
FIT221L1/8	0.125	0.062	0.017
FIT221L3/16	0.187	0.093	0.017
FIT221L1/4	0.250	0.125	0.022
FIT221L3/8	0.375	0.187	0.022
FIT221L1/2	0.500	0.250	0.022
FIT221L3/4	0.750	0.375	0.027
FIT221L1IN	1.000	0.500	0.030

**B. Applicable Specifications**

- |       |              |                              |
|-------|--------------|------------------------------|
| 1) UL | Standard 224 | 125°C / 600 V <sub>RMS</sub> |
|       | VW-1         |                              |

**C. Environmental Compliance**

- 1) RoHS Directive (2011/65/EU):  
All materials used in the manufacture of this part meet the requirements of European Directive 2011/65/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. No Exemptions are required for RoHS Compliance on this item. Consult Alpha Wire's web site for [RoHS C of C](#).
- 2) REACH Regulation (EC 1907/2006):  
This product does not contain Substances of Very High Concern (SVHC) listed on the European Union's REACH candidate list in excess of 0.1% mass of the item. For up-to-date information, please see [Alpha's REACH SVHC Declaration](#).
- 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             | -40 to 125°C                 |               |
| 2) Shrink Ratio                  | Approximately 2:1            |               |
| 3) Full Recovery Temperature     | 110°C                        |               |
| 4) Minimum Shrink Temperature    | 100°C                        |               |
| 5) Tensile Strength              | 1500psi, Min                 | ASTM D638     |
| 6) Elongation                    | 200%, Min                    | ASTM D638     |
| 7) Low Temperature Flex(-30°C)   | no cracking                  | AMS-DTL-23053 |
| 8) Heat Resistance(158°C,168hrs) | 100% Elongation, Min         | ASTM D638     |
| 9) Heat Shock(250°C,4hrs)        | no cracking                  | AMS-DTL-23053 |
| 10) Secant Modulus               | 2.5x10 <sup>4</sup> psi, Min | ASTM D882     |
| 11) Longitudinal Change          | +/-5%                        | AMS-DTL-23053 |
| 12) Shelf Life                   | 25 Years @ 18 to 35°C        |               |

**E. Electrical Properties**

- |                       |                                |           |
|-----------------------|--------------------------------|-----------|
| 1) Volume Resistivity | 1x10 <sup>14</sup> ohm-cm, Min | ASTM D876 |
|-----------------------|--------------------------------|-----------|

**F. Chemical Properties**

- |                     |            |           |
|---------------------|------------|-----------|
| 1) Water Absorption | 0.70%, Max | ASTM D570 |
|---------------------|------------|-----------|

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- |                                   |                      |               |
|-----------------------------------|----------------------|---------------|
| 2) Copper stability(158°C,168hrs) | 100% Elongation, Min | UL 224        |
| 3) Corrosion(158°C,16hrs)         | no corrosion         | AMS-DTL-23053 |
| 4) Halogen Free                   | Yes                  |               |
| 5) Lead Free                      | Yes                  |               |

**G. Other**

- 1) Packaging
  - a) FIT221L3/64  
1000 FT
  - b) FIT221L1/16  
1000 FT
  - c) FIT221L3/32  
500 FT
  - d) FIT221L1/8  
500 FT
  - e) FIT221L3/16  
200 FT
  - f) FIT221L1/4  
500 FT
  - g) FIT221L3/8  
200 FT
  - h) FIT221L1/2  
200 FT
  - i) FIT221L3/4  
200 FT
  - j) FIT221L1IN  
200 FT

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