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# Customer Specification

## PART NO. FIT-221L-1/2

### Construction

1) Tubing Type	Heat Shrinkable Tubing
2) Tubing Material	LSZH Polyolefin
3) Minimum Supplied ID(In)	0.500
4) Maximum Recovered ID (In)	0.250
5) Nominal Recovered Wall Thickness(In)	0.022
6) Color(s)	BLACK

### Applicable Specifications

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

### Environmental

1) EU Directive 2011/65/EU(RoHS2):	All materials used in the manufacture of this part are in compliance with European Directive 2011/65/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. 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.

### Properties

Physical & Mechanical Properties		
1) Temperature Range	-55 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	
Electrical Properties		
Chemical Properties		
1) Water Absorption	0.70%, Max	ASTM D570
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	

## Other

Packaging	
1) 200 FT	CR19-1: 19.75 x 1 x 8 Max. 3 pieces/Min length 25 FT.

[www.alphawire.com](http://www.alphawire.com)

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# EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: FIT-221L-1/2

FIT-221L-1/2, RoHS-Compliant Commencing With 1/27/2014 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above is manufactured in accordance with Directive 2011/65/EU of the European Parliament, better known as the RoHS Directive (commonly known as RoHS 2), with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. This certification extends to amending Directive 2015/863/EU which expanded the list of restricted substances to 10 items (commonly known as RoHS 3) The reader is referred to these Directives for the specific definitions and extents of the Directives. **No Exemptions are required for RoHS Compliance on this item.** Additionally, Alpha certifies that the listed part number is in compliance with China RoHS "Marking for Control of Pollution by Electronic Information Products" standard SJ/T 11364-2014.

Substance	Maximum Control Value
Lead	0.1% by weight (1000 ppm)
Mercury	0.1% by weight (1000 ppm)
Cadmium	0.01% by weight (100 ppm)
Hexavalent Chromium	0.1% by weight (1000 ppm )
Polybrominated Biphenyls (PBB)	0.1% by weight (1000 ppm)
Polybrominated Diphenyl Ethers (PBDE) ,	
Including Deca-BDE	0.1% by weight (1000 ppm)
Bis(2-ethylhexyl) phthalate (DEHP)	0.1% by weight (1000 ppm)
Butyl benzyl phthalate (BBP)	0.1% by weight (1000 ppm)
Dibutyl phthalate (DBP)	0.1% by weight (1000 ppm)
Diisobutyl phthalate (DIBP)	0.1% by weight (1000 ppm)

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Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering & QA

7/12/2017

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