

## Customer Specification

### PART NO. FIT-221V-3/32

### Construction

1) Tubing Type	Heat Shrinkable Tubing
2) Tubing Material	Cross Linked Polyolefin
3) Minimum Supplied ID(In)	0.093
4) Maximum Recovered ID (In)	0.046
5) Nominal Recovered Wall Thickness(In)	0.020
6) Color(s)	BLACK, WHITE, RED, YELLOW, BLUE, GREEN

### Applicable Specifications

1) UL	VW-1	
	Standard 224	
2) CSA International	Standard 198	
3) Other	AMS-DTL-23053/5 Class 1 & 3	

### 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 <a href="#">RoHS C of C</a> .
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 <a href="#">Alpha's REACH SVHC Declaration</a> .
3) California Proposition 65:	The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65.

# Properties

<b>Physical &amp; Mechanical Properties</b>		
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 Resistance(175°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) Specific Gravity(Colors)	1.35, Max	ASTM D792
Specific Gravity(Clear)	1.00, Max	
13) Shelf Life	5 Years @ 18 to 35°C	
<b>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>Chemical Properties</b>		
1) Water Absorption	0.50%, Max	ASTM D570
2) Corrosion(175°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) Vacuum Outgassing - CVCM	0.10%, Max	ASTM E595
6) Halogen Free	No	
7) Lead Free	Yes	

# Other

<b>Packaging</b>
3X500 FT, 250X4 FT, 500 FT, 25X4 FT, 32X6 IN

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

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# EU/UK/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: FIT-221V-3/32

FIT-221V-3/32, RoHS-Compliant Commencing With 12/1/2004 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above, including all packaging materials, 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). This product also complies with UK - RoHS. 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. This product is also in compliance with China RoHS 2 per GB/T 26572-2011.

## Substance

Lead  
Mercury  
Cadmium  
Hexavalent Chromium  
Polybrominated Biphenyls (PBB)  
Polybrominated Diphenyl Ethers (PBDE) ,  
Including Deca-BDE  
Bis(2-ethylhexyl) phthalate (DEHP)  
Butyl benzyl phthalate (BBP)  
Dibutyl phthalate (DBP)  
Diisobutyl phthalate (DIBP)

## Maximum Control Value

0.1% by weight (1000 ppm)  
0.1% by weight (1000 ppm)  
0.01% by weight (100 ppm)  
0.1% by weight (1000 ppm)  
0.1% by weight (1000 ppm)  
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Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering 4/2/2025

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