

Customer Specification

PART NO. ST-650-1-1/2

Construction

| | |
|---|--------------------------|
| 1) Tubing Type | Heat Shrinkable Tubing |
| 2) Tubing Material | Flexible Fluoroelastomer |
| 3) Minimum Supplied ID(In) | 1.500 |
| 4) Maximum Recovered ID (In) | 0.750 |
| 5) Nominal Recovered Wall Thickness(In) | 0.055 |
| 6) Color(s) | BLACK |

Applicable Specifications

| | | |
|----------|------------------|--|
| 1) Other | AMS-DTL-23053/13 | |
|----------|------------------|--|

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 | -40 to 200°C | |
| 2) Shrink Ratio | Approximately 2:1 | |
| 3) Full Recovery Temperature | 175°C | |
| 4) Minimum Shrink Temperature | 130°C | |
| 5) Tensile Strength | 1200psi, Min | ASTM D638 |
| 6) Elongation | 250%, Min | ASTM D638 |
| 7) Cold Impact(-55°C) | no cracking | ASTM D746 |
| 8) Heat Resistance(250°C,168hrs) | 100% Elongation, Min | ASTM D638 |
| 9) Heat Shock(300°C,4hrs) | no cracking | AMS-DTL-23053 |
| 10) Longitudinal Change | +/-20% | AMS-DTL-23053 |
| 11) Shelf Life | 2 Years @ 18 to 35°C | |
| Electrical Properties | | |
| 1) Dielectric Strength | 200 V/mil, Min | ASTM D876 |
| 2) Volume Resistivity | 1x10 ⁹ ohm-cm, Min | ASTM D876 |
| Chemical Properties | | |
| 1) Water Absorption | 0.50%, Max | ASTM D570 |
| 2) Corrosion(250°C,16hrs) | no corrosion | AMS-DTL-23053 |
| 3) Fluid Resistance(23°C,24 Hrs) | 1200 PSI, Min | AMS-DTL-23053 |
| 4) Fungus Resistance | Pass | AMS-DTL-23053 |
| 5) Halogen Free | No | |
| 6) Lead Free | Yes | |

Other

| |
|-----------|
| Packaging |
|-----------|

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EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: ST-650-1-1/2

ST-650-1-1/2, RoHS-Compliant Commencing With 11/1/2005 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:

A handwritten signature in black ink, appearing to read 'Dave Watson'.

Dave Watson, Director of Engineering & QA

9/29/2020

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Mouser Electronics

Authorized Distributor

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