

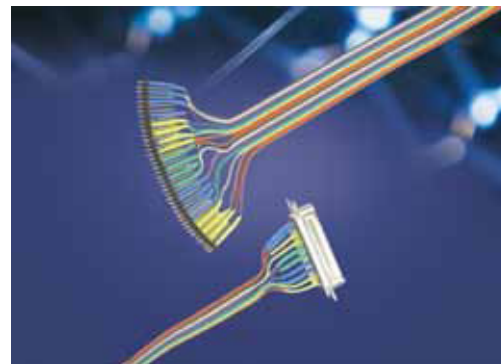
## Q2-F3X RoHS Compliant

**HIGHLY FLEXIBLE, FLAME RETARDANT POLYOLEFIN TUBING**  
SHRINK RATIO 3:1

### Features/Applications

Outstanding physical, chemical and electrical properties make it a good choice for electrical insulation, bundling and marking. It also prevents corrosion plus provides mechanical protection. It's 3:1 shrink ratio makes it suitable for applying to irregular and difficult shapes.

- Operating temperature: -55°C to +135°C
- Minimum shrink temperature: 70°C
- Full recovery temperature: 100°C
- Approvals<sup>4</sup>: File No. E236137, File No. 242540, 125°C, VW-1, 600V
- Meets: SAE-AMS-DTL-23053/5 Class 1 & 3, Sony-SS-00259,
- Standard color: Black
- Special Colors: Red, blue, yellow, green, clear (class 2)
- RoHS Compliant



| Technical Data  |                               |                       |
|---|-------------------------------|-----------------------|
| Property  | Test Method                   | Typical Data          |
| Operating Temperature                                 | IEC 216                       | -55°C to +135°C       |
| Tensile Strength                                      | ASTM D 2671                   | >14 MPa               |
| Ultimate Elongation                                   | ASTM D 2671                   | > 600%                |
| Longitudinal Shrinkage                                | UL 224                        | 0 ± 5%                |
| Eccentricity  | ASTM D 2671                   | < 35%                 |
| Heat Aging<br>Tensile Strength<br>Ultimate Elongation | 175°C, 168 hrs.               | > 11 MPa<br>> 350 %   |
| Flammability  | VW-1                          | Pass                  |
| Dielectric Strength                                   | ASTM D 150                    | > 20kV / mm           |
| Voltage Withstand                                     | ASTM D 2671 / AC2500V. 1 min. | No Breakdown          |
| Volume Resistance                                     | ASTM D 2671                   | 10 <sup>14</sup> Ω.cm |
| Copper Stability                                      | UL 224                        | Pass                  |
| Copper Corrosion                                      | UL 224                        | No Corrosion          |

| Product Dimensions |           |                        |                        |                       |                                |   |     |
|--------------------|-----------|------------------------|------------------------|-----------------------|--------------------------------|---|-----|
| Size (Inch)        |           | As Supplied (mm)       | After Recovered (mm)   |                       | Standard Packaging             |   |     |
| Inch               | mm        | Inside Diameter (min.) | Inside Diameter (max.) | Wall Thickness (min.) | Standard Spool *(SS)<br>(Feet) | Cut to Length Pcs. *(QB)<br>Qty per bag |     |
|                    |           |                        |                        |                       |                                | 6"                                      | 48" |
| 1/16               | 1.5/0.5   | 1.6                    | 0.5                    | 0.45                  | 500                            | 28                                      | 25  |
| 1/8                | 3.0/1.0   | 3.2                    | 1.0                    | 0.55                  | 500                            | 24                                      | 25  |
| 3/16               | 4.5/1.5   | 4.8                    | 1.5                    | 0.60                  | 500                            | 24                                      | 25  |
| 1/4                | 6.0/2.0   | 6.4                    | 2.0                    | 0.65                  | 250                            | 20                                      | 25  |
| 3/8                | 9.0/3.0   | 9.5                    | 3.0                    | 0.75                  | 250                            | 16                                      | 25  |
| 1/2                | 12.0/4.0  | 12.7                   | 4.0                    | 0.80                  | 150                            | 14                                      | 5   |
| 3/4                | 18.0/6.0  | 19.1                   | 6.0                    | 0.90                  | 150                            | 12                                      | 5   |
| 1                  | 24.0/8.0  | 25.4                   | 8.0                    | 1.20                  | 150                            | 8                                       | 5   |
| 1 1/2              | 39.0/13.0 | 39.0                   | 13.0                   | 1.25                  | 150                            | 5                                       | 5   |

Notes:  
 \* See page 13 - Part Number Guide for standard packaging codes.  
 2. Cross Reference Guide located on page 3.  
 3. Special sizes, packaging, colors and cut pieces are available upon request.  
 4. Clear tubing is not flame retardant, UL or CSA approved.