Product: BE43910

RailTuff SPE 40mGb 24AWG STR SF/UTP E-Beam XL-LSZH, AWM STYLE 22303

Product Description

RailTuff Ethernet 1 Pair x 24AWG, STP, Stranded Tinned Copper Conductor, PP Insulation, XLPE Outer Jacket, AWM STYLE 22303

Technical Specifications

Product Overview

Suitable Applications:	1 single pair Ethernet up to 600 MHz accord. IEEE 802.3bp (1000BASE-T1)

Physical Characteristics (Overall)

Conductor

AWG	Stranding	Material	Construction n x D	No. of Pairs
24	Stranded	TC - Tinned Copper	7x0.2 mm	1

Conductor Count:	2

Insulation

Type	Material	Nominal Diameter	Nominal Wall Thickness
Insulation	PP - Polypropylene	1.65 mm	0.41 mm

Color Chart

Color
Nature
Nature & Blue

Cabling

Description	Lay Direction	Number of Fillers
2C + 1	S	1

Outer Shield

Type	Material	Min. Coverage [%]
Tape	Bi-Laminate (Alum+Poly)	25%
Braid	Tinned Copper (TC)	80%

Outer Jacket

Material	Nominal Diameter	Min. Wall Thickness	Nominal Wall Thickness
XLPE - Cross Linked Polyethylene	4.80 mm	0.38 mm	0.45 mm

Construction and Dimensions

Min Elongation at Breakof Insulation:	100 %
Min Elongation at Breakof Jacket:	100 %
Min Tensile Strength of Jacket:	10.3 MPa

Electrical Characteristics

Conductor DCR

Max. Conductor DCR	Max. DCR Unbalanced Within Pair [%]

94.2 Ohm/km	2 %

Capacitance

Max. Capacitance Unbalance
160 pF/100m

Dielectric Strength:	0.7 kVac/1 min
Insulation Resistance:	5000 MOhm*km
Insulation Resistance (Cond to Cond):	5000 MOhm*km
Insulation Resistance (Cond to Screen):	5000 MOhm*km

Impedance

Nominal Characteristic Impedance
100 ± 7 Ohm at 100 MHz

Delay

Frequency [MHz]	Max. Delay
4 MHz	552 ns/100m

High Frequency

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. RL (Return Loss) [dB]	Min. TCL [dB]	Min. ELTCTL [dB]
1 MHz	3.0 dB/100m	20 dB	40 dB	40 dB
10 MHz	8.7 dB/100m	25 dB	35 dB	20 dB
20 MHz	12.3 dB/100m	25 dB	30.5 dB	13.9 dB
600 MHz	70.6 dB/100m	15.6 dB	8.3 dB	5 dB

Coupling Attenuation Class:	Type I

Voltage

Voltage Rating [V]
300 V

Temperature Range

Operating Temp Range:	-40°C to + 80°C

Mechanical Characteristics

Max Dielectric Shrinkage:	5 %
Dielectric Shrinkage Description:	Shrinkage of Insualtion (100+/2°CX1hr)/150mm
Cold Bend Test:	No Crack
Hygroscopicity:	Weight increasing not exceed 1% (for 3hrs)
Wicking:	The filter paper shall not wet (for 6 hrs)
IRM 902 Mineral Oil Resistance Test:	At 100C° x 96hr- Tensile Strength: ≥ 70% of Original Elongation at break:≥ 65% of Original
UV Resistance 720h per UL1581:	(300h) Tensile Strength (Mpa) - 85% of original, Elongation at break (%) - 85% of original

Standards

Other Standards:	IEC 61156-12 NP, EN 45545-2 Hazard Level HL1-HL3, UL758

Applicable Environmental and Other Programs

EU Directive 2002/95/EC (RoHS):	Yes

Flammability, LS0H, Toxicity Testing

UL Flammability:	FT 2
IEC Flammability:	IEC 60332-1-2, EN 50305 clause 9.1.2, IEC 60332-3-25, IEC 60332-3-22
Toxicity of Insulation:	(EN 45545-2 Table 5-R15 and R16-HL3) 6
Toxicity of Jacket:	(EN 45545-2 Table 5-R15 and R16-HL3) 6
IEC 61034-2 - Smoke Density Min. Transmittance:	70%

History

Update and Revision:	Revision Number: 0.58 Revision Date: 09-09-2021

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