

Reinforced (3 layers) Insulation TCA3

Product Information

Temperature Rating: 155°C

Insulation: Modified ETFE

Compliances: UL OBJT2 File No. E206198

UL/IEC 60950-1 (Ed. 2):am1, Annex U. UL 60601-1 (ed. 3)

IEC 61558-1, 60601-1 (ed. 3), 61010-1 (Ed. 2)

VDE License Nr. 136743: Class F

System approvals: UL 1446

RXT-2 Class F, TCA Class F

RoHS Compliant

Conductor: Tin Plated Copper, Solid or Stranded (ASTM B-33/ASTM B-286)
Bare Copper and other conductors available

Size Range: UL: 18 AWG – 40 AWG

VDE: 14 AWG – 40 AWG

Voltage: UL: 1500 V for electronic equipment

UL: 707 V for medical equipment

VDE: 1000 V

Breakdown: Approx. 7000 V

OD Tolerances: 14- 24 AWG + 0.0015"/-0.001"

25- 40 AWG + 0.001"/-0.001"

Insulation Information:

Insulation Type: Fluoropolymer

Dielectric Constant: 2.6

Abrasion Resistance: Excellent

Chemical Resistance: Excellent

Underground Resistance: Excellent

Thermal: Continuous Operating Temperature, 150°C

Tensile Strength (psi): 6500

Bondability: Poor

Water Resistance: Excellent

Long Term Stability: Excellent

UL Flammability Rating: V-0

Elongation (%): 150-300

UV Resistance: Excellent

ETFE is a Fluoropolymer compound with excellent electrical properties, heat resistance, chemical resistance, and abrasion resistance. Commonly used in winding wires, UL AWM wires, and medical applications

Insulated Wire Information:

Part Number	AWG	Conductor OD		Insulated Wire OD		Weight LB/KFT
		Inches	MM	Inches	MM	
TCA3 18 AWG	18	0.0403	1.02	0.0493	1.25	5.39
TCA3 19 AWG	19	0.0359	0.912	0.0449	1.14	4.32
TCA3 20 AWG	20	0.0320	0.813	0.0410	1.04	3.47
TCA3 21 AWG	21	0.0285	0.724	0.0375	0.953	2.80
TCA3 22 AWG	22	0.0253	0.643	0.0343	0.871	2.25
TCA3 23 AWG	23	0.0226	0.574	0.0316	0.803	1.83
TCA3 24 AWG	24	0.0201	0.510	0.0291	0.739	1.48
TCA3 25 AWG	25	0.0179	0.455	0.0269	0.683	1.20
TCA3 26 AWG	26	0.0159	0.404	0.0249	0.632	0.98
TCA3 27 AWG	27	0.0142	0.361	0.0232	0.589	0.80
TCA3 28 AWG	28	0.0126	0.320	0.0216	0.549	0.66
TCA3 29 AWG	29	0.0113	0.287	0.0203	0.516	0.55
TCA3 30 AWG	30	0.0100	0.254	0.0190	0.483	0.45
TCA3 31 AWG	31	0.0089	0.226	0.0179	0.455	0.38
TCA3 32 AWG	32	0.0080	0.203	0.0170	0.432	0.32
TCA3 33 AWG	33	0.0071	0.180	0.0161	0.408	0.27
TCA3 34 AWG	34	0.0063	0.160	0.0153	0.388	0.23
TCA3 35 AWG	35	0.0056	0.142	0.0146	0.370	0.20
TCA3 36 AWG	36	0.0050	0.127	0.0140	0.355	0.17
TCA3 37 AWG	37	0.0045	0.114	0.0135	0.342	0.16
TCA3 38 AWG	38	0.0040	0.102	0.0130	0.330	0.14
TCA3 39 AWG	39	0.0035	0.089	0.0125	0.317	0.12
TCA3 40 AWG	40	0.0031	0.079	0.0121	0.307	0.11

Bare Core Wire Specifications:

DCR per 10' @ 20°C

AWG	Core Wire Diameter			DC Resistance		
	Min. Dia.	Nom. Dia.	Max. Dia.	Min. Res.*	Nom. Res.	Max. Res.
18	0.0399	0.0403	0.0415	0.0617	0.0664	0.0699
19	0.0355	0.0359	0.0370	0.0776	0.0837	0.0883
20	0.0317	0.0320	0.0330	0.0975	0.1053	0.1108
21	0.0282	0.0285	0.0294	0.1229	0.1328	0.1400
22	0.0250	0.0253	0.0261	0.1559	0.1685	0.1781
23	0.0224	0.0226	0.0233	0.1956	0.2112	0.2219
24	0.0199	0.0201	0.0207	0.2478	0.2669	0.2811
25	0.0177	0.0179	0.0184	0.3137	0.3366	0.3554
26	0.0157	0.0159	0.0164	0.3948	0.4266	0.4517
27	0.0141	0.0142	0.0146	0.4982	0.5349	0.5600
28	0.0125	0.0126	0.0130	0.6283	0.6793	0.7125
29	0.0112	0.0113	0.0116	0.7892	0.8446	0.8875
30	0.0099	0.0100	0.0103	1.0009	1.0785	1.1359
31	0.0088	0.0089	0.0092	1.2546	1.3616	1.4376
32	0.0079	0.0080	0.0083	1.5414	1.6852	1.7838
33	0.0070	0.0071	0.0074	1.9392	2.1395	2.2720
34	0.0062	0.0063	0.0066	2.4378	2.7173	2.8962
35	0.0055	0.0056	0.0059	3.0506	3.4391	3.6803
36	0.0049	0.0050	0.0053	3.7803	4.3140	4.6368
37	0.0044	0.0045	0.0048	4.6089	5.3259	5.7505
38	0.0039	0.0040	0.0043	5.7431	6.7406	7.3195
39	0.0034	0.0035	0.0038	7.3539	8.8041	9.6306
40	0.0030	0.0031	0.0034	9.1860	11.2227	12.3700

*ASTM B33 sets no standard for minimum resistance. This is only an indicator to investigate other aspects such as tin-thickness and tin coverage.