



High-temperature wire

301-KAP-RIB

Polyimide Ultra-High-Vacuum Ribbon Cable

10⁻¹⁰ mbar UHV flat polyimide ribbon cable with 28 AWG Ag-OFC copper (-269 to +250 °C)

ASTM E595 UHV (10⁻¹⁰ mbar)

-269 °C to +250 °C

9 to 50-Way Ribbon

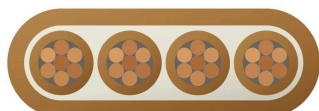


Application

301-KAP-RIB ultra-high-vacuum (UHV) flat ribbon cable engineered with parallel 28 AWG (Ø 0.25 mm) silver-plated OFHC copper conductors and low-outgassing aromatic polyimide film insulation for 10⁻¹⁰ mbar chambers and 4 K to +250 °C bakeouts.

Typical uses: Synchrotron & Particle Beamlines, Semiconductor EUV & MBE Chambers, Space Thermal-Vacuum (TVAC) Testing, Cryogenic 4 K Dilution Refrigerators, Surface Science (XPS / ARPES / STM)

Construction



Cross-section, not to scale

- 1 Silver-plated OFHC copper array
- 2 Aromatic polyimide core dielectric
- 3 Slotted UHV polyimide ribbon web

Technical data

Typical values

Max. operating voltage	250 V AC / 300 V DC in vacuum	Dielectric test voltage	1000 V AC rms (1 min)
Max. current per conductor	1.5 A in vacuum (+20 °C) · 2.5 A in air convection	Conductor DC resistance	≤ 220 Ω/km at +20 °C (28 AWG Ag-Cu)
Operating temperature range	-269 °C (4 K) to +250 °C continuous	Max. UHV bakeout temperature	+250 °C (+300 °C short-term peak)
Vacuum thermal derating	Derate current by 40 % in UHV (no convection)	Conductor size & pitch	28 AWG (0.08–0.09 mm ²) · 1.00 / 1.27 mm pitch
Ribbon thickness	0.40 mm nominal flat profile	Min. bending radius	3 mm static fold · 10 × thickness flexing
Vacuum outgassing (ASTM E595)	TML < 1.0 %, CVCM < 0.05 % (UHV < 10 ⁻¹⁰ mbar)	Radiation resistance	Up to 10 ⁷ Gy (10 MGy) gamma / electron
Halogen & silicone free	100 % free of silicone & halogens	Standards	ASTM E595 / ECSS-Q-ST-70-02C

Sizes

9 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Cross-section / size	Conductor build	Wall ≈ mm	Outer Ø ≈ mm	Metal kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard 301-KAP-RIB configurations 9 sizes							
☐ 301-KAP-RIB9 (9-Way)	9×0.08 mm ² (28 AWG)	9 × Ø 0.25 mm Ag-Cu	0.06	9.50	6.8	11.5	5
☐ 301-KAP-RIB10 (10-Way)	10×0.08 mm ² (28 AWG)	10 × Ø 0.25 mm Ag-Cu	0.06	10.50	7.6	12.8	5
☐ 301-KAP-RIB15 (15-Way)	15×0.08 mm ² (28 AWG)	15 × Ø 0.25 mm Ag-Cu	0.06	15.80	11.4	19.0	5
☐ 301-KAP-RIB20 (20-Way)	20×0.08 mm ² (28 AWG)	20 × Ø 0.25 mm Ag-Cu	0.06	21.00	15.2	25.4	5
☐ 301-KAP-RIB25 (25-Way)	25×0.08 mm ² (28 AWG)	25 × Ø 0.25 mm Ag-Cu	0.06	26.20	19.0	31.8	5
☐ 301-KAP-RIB37 (37-Way)	37×0.08 mm ² (28 AWG)	37 × Ø 0.25 mm Ag-Cu	0.06	38.80	28.1	47.0	5
☐ 301-KAP-RIB50 (50-Way)	50×0.08 mm ² (28 AWG)	50 × Ø 0.25 mm Ag-Cu	0.06	52.50	38.0	63.5	5
☐ 301-KAPM-RIB15 (15-Way Flex)	15×0.09 mm ² (28 AWG)	15 × (19×0.07) Ag-Cu	0.07	16.50	12.8	21.5	4
☐ 301-KAPM-RIB25 (25-Way Flex)	25×0.09 mm ² (28 AWG)	25 × (19×0.07) Ag-Cu	0.07	27.50	21.3	35.8	4

– Outer diameters and weights are nominal engineering values for 301-KAP-RIB subject to standard manufacturing tolerances per ASTM E595 UHV Outgassing / MIL-DTL-81381.

Electrical & rating data

9 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Primary rating (A or kV)	Derated / AC rating	Dielectric test V AC rms
301-KAP-RIB9 (9-Way) (9×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB10 (10-Way) (10×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB15 (15-Way) (15×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB20 (20-Way) (20×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB25 (25-Way) (25×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB37 (37-Way) (37×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAP-RIB50 (50-Way) (50×0.08 mm ² (28 AWG))	220.00	2.5	1.5	1,000
301-KAPM-RIB15 (15-Way Flex) (15×0.09 mm ² (28 AWG))	210.00	2.5	1.5	1,000
301-KAPM-RIB25 (25-Way Flex) (25×0.09 mm ² (28 AWG))	210.00	2.5	1.5	1,000

– Electrical resistance at +20 °C and dielectric withstand voltages verified per ASTM E595 UHV Outgassing / MIL-DTL-81381.

Standards and approvals

- ✓ ASTM E595 UHV Outgassing / MIL-DTL-81381
- ✓ CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- ✓ REACH SVHC & Halogen/Asbestos Compliance Verified

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

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Email

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Web

tebaoflex.com/cables/301-kap-rib-polyimide-ultra-high-vacuum-ribbon-cable



Typical values for this cable type, based on ASTM E595 UHV Outgassing / MIL-DTL-81381. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.