



10–150 kV DC unshielded silicone HV wire

HSW / HSX / HST

Unshielded Silicone High-Voltage DC Wire

10 kV to 150 kV DC void-free silicone (HSW, HSX) & FEP-jacketed silicone (HST) HV lead



10 kV – 150 kV DC

–60 to +180 °C Silicone

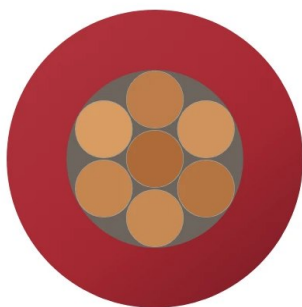
HSW / HSX / HST

Application

Ultra-flexible unshielded high-voltage DC equipment wire in three voltage-graded architectures: homogeneous silicone (HSW, 10–100 kV DC), semiconductive stress-graded silicone (HSX, up to 150 kV DC), and fluoropolymer FEP/PFA-jacketed silicone (HST) for.

Typical uses: High-Voltage DC Power Supplies & Multipliers, CO₂ / Excimer Lasers & Plasma Generators, Electrostatic Painting, Flocking & Precipitators, Electron Microscopes (SEM / TEM) & Mass Spectrometers, HV Insulation Hipot & Capacitor Charging Units

Construction



Cross-section, not to scale

- 1 Fine-stranded tinned copper conductor
- 2 Extruded semiconductive stress-smoothing layer (HSX / HST)
- 3 Void-free high-dielectric silicone rubber (HSW / HSX / HST)
- 4 Optional FEP fluoropolymer protective skin (HST series)

Technical data

Typical values

Rated DC working voltage	10, 15, 20, 25, 30, 40, 50, 60, 75, 100, 125 & 150 kV DC	Rated AC voltage (50/60 Hz)	4 kV to 60 kV AC rms
Factory DC routine test voltage	1.5 × to 2.0 × rated U _{DC} for 5 min	Dielectric breakdown strength	≥ 30 kV/mm (IEC 60243)
Volume resistivity (20 °C)	≥ 2 × 10 ¹⁵ Ω·cm	Relative permittivity (ε _r)	2.8 (silicone) · tan δ ≤ 2 × 10 ⁻³ at 50 Hz
Continuous operating temperature	-60 °C to +180 °C (HSW/HSX/HST)	Short-term peak temperature	+200 °C
Conductor cross-sections	0.50 mm ² , 0.75 mm ² , 1.0 mm ² , 1.5 mm ² , 2.5 mm ² , 4.0 mm ² to 16 mm ²	Min. bend radius	5 × OD (HSW/HSX) · 6 × OD (HST)
Shore A hardness	60 ± 5 Shore A (silicone)	Ozone & corona resistance	Inherent Si-O backbone immunity to ozone & UV
Oil & solvent resistance	HST (FEP jacket) fully resistant to mineral transformer oil	Flame & halogen	IEC 60332-1-2 / UL VW-1 · Halogen-free (HSW/HSX)
Standards	UL 3239 (up to 60 kV DC) · VDE 0250 · MIL-DTL-16878 Type F/FF		

Sizes

14 standard constructions

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

Order designation	Architecture	Conductor mm ² (AWG)	Rated U _{DC} kV DC	Rated U _{AC} kV rms	Test Voltage kV DC	Nominal OD mm	Weight kg/km
HSW Series — Homogeneous Void-Free Silicone HV DC Wire (10 kV to 75 kV DC) 8 sizes							
☐ HSW-10KV-1.0	HSW Homogeneous SiR	1.0 (18 AWG)	10	4	20	3.6	20
☐ HSW-15KV-1.0	HSW Homogeneous SiR	1.0 (18 AWG)	15	6	30	4.2	24
☐ HSW-20KV-1.5	HSW Homogeneous SiR	1.5 (16 AWG)	20	8	40	5.0	34
☐ HSW-30KV-1.5	HSW Homogeneous SiR	1.5 (16 AWG)	30	12	55	6.4	48
☐ HSW-40KV-1.5	HSW Homogeneous SiR	1.5 (16 AWG)	40	16	70	7.6	64
☐ HSW-50KV-2.5	HSW Homogeneous SiR	2.5 (14 AWG)	50	20	85	9.0	92
☐ HSW-60KV-2.5	HSW Homogeneous SiR	2.5 (14 AWG)	60	25	100	10.5	118
☐ HSW-75KV-2.5	HSW Homogeneous SiR	2.5 (14 AWG)	75	30	120	12.2	155
HSX (Semicon Stress-Graded) & HST (FEP-Jacketed) HV DC Wire (30 kV to 150 kV DC) 6 sizes							
☐ HSX-50KV-1.5-SC	HSX Semicon + SiR	1.5 (16 AWG)	50	22	90	9.2	90
☐ HSX-75KV-2.5-SC	HSX Semicon + SiR	2.5 (14 AWG)	75	32	125	12.5	162
☐ HSX-100KV-2.5-SC	HSX Semicon + SiR	2.5 (14 AWG)	100	40	160	15.6	245
☐ HSX-150KV-4.0-SC	HSX Semicon + SiR	4.0 (12 AWG)	150	60	225	21.5	455
☐ HST-30KV-1.5-FEP	HST SiR + FEP Skin	1.5 (16 AWG)	30	12	55	7.0	58
☐ HST-60KV-2.5-FEP	HST SiR + FEP Skin	2.5 (14 AWG)	60	25	100	11.2	138

– Warning: Unshielded HV wires do not confine the radial electric field; maintain adequate air clearance from grounded chassis walls or run inside insulating oil/gas.

Standards and approvals

- ✓ UL 758 Style 3239 (up to 60 kV DC, 150/180 °C) Compliant
- ✓ MIL-DTL-16878 Type F/FF & IEC 60243 Dielectric 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/unshielded-silicone-high-voltage-dc-wire



Typical values for this cable type, based on IEC 60502 / UL 3239 / VDE 0250 / MIL-DTL-16878. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.