

S 系列高性能低损稳相射频电缆



该电缆采用国外军工市场广泛使用的结构，中心导体镀银铜、低密度 PTFE 介质，镀银铜带绕包（或镀银扁线编织）、高温复合铝箔绕包、镀银铜丝编织而组成的三层屏蔽结构，FEP 护套防护，该结构有效提升了产品的机械稳定性及使用寿命。

该结构广泛应用于商用飞机、战斗机、舰载环境和地面武器系统。该结构系列电缆经过多年的实践应用，性能可靠，环境适应性好，优良的耐用性和超长的使用寿命。

知名品牌射频电缆对比表

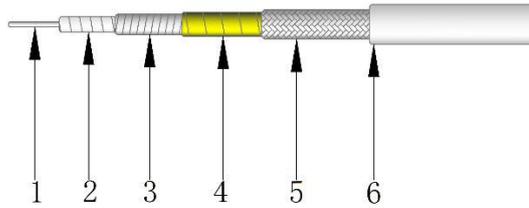
典型应用

测试电缆
 相控阵雷达
 航天系统、舰船
 装备自动化
 大功率使用环境

产品特点

工作频率至 50GHZ
 大功率
 低损耗
 高屏蔽效率
 高机械稳定性

| 泰莱微波型号 | 替代国外型号 | 品牌和公司 |
|--------|---------|--------------|
| S1 | SFT-142 | TIMES |
| | 32022 | ASTROLAB |
| | HP160S | SEMFLEX |
| | UFA147A | Micro-coax |
| | SF-102 | Huber+suhner |
| S2 | SFT-205 | TIMES |
| | 32055 | ASTROLAB |
| | HP190S | SEMFLEX |
| | UFA205A | Micro-coax |
| | SF-104 | Huber+suhner |
| S3 | SFT-304 | TIMES |
| | 32051 | ASTROLAB |
| | HP305S | SEMFLEX |



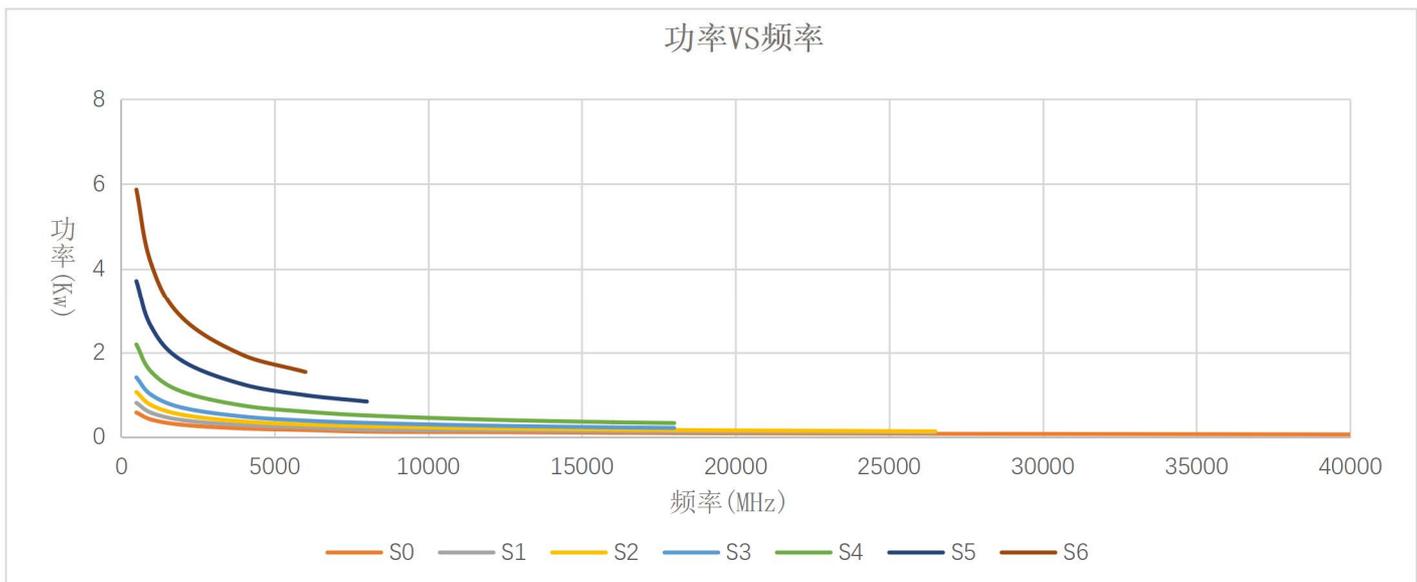
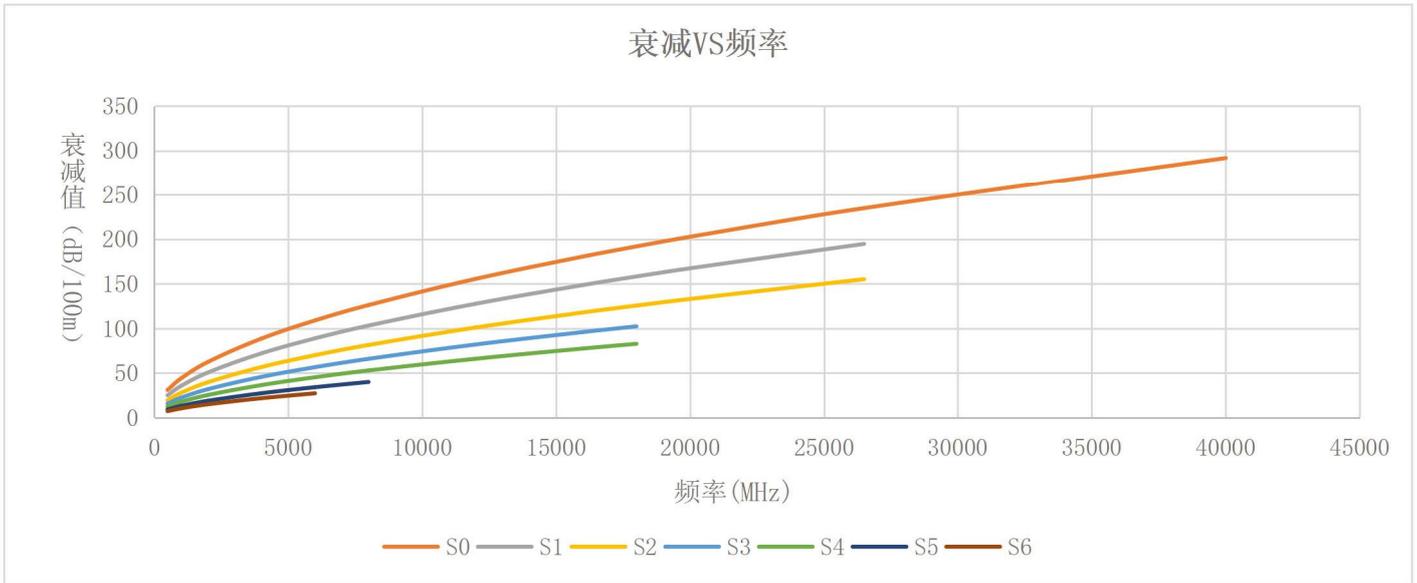
1. 内导体——铜
2. 绝缘层——低密度聚四氟乙烯
3. 外导体——镀银铜
4. 中间层——PTFE/高温铝箔
5. 外屏蔽层——镀银铜
6. FEP 护套——FEP

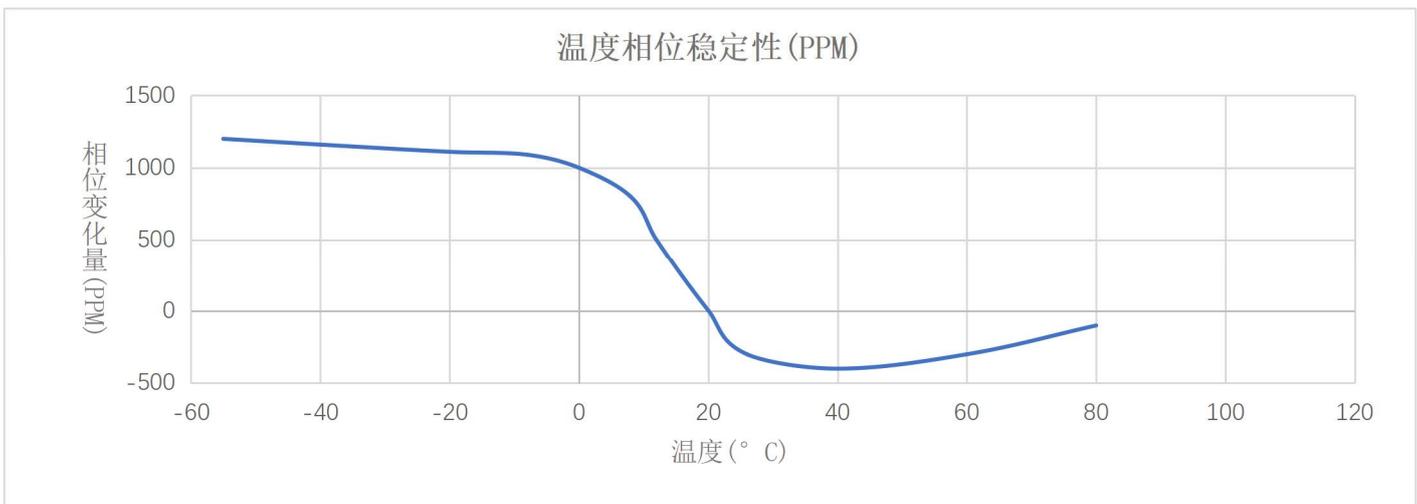
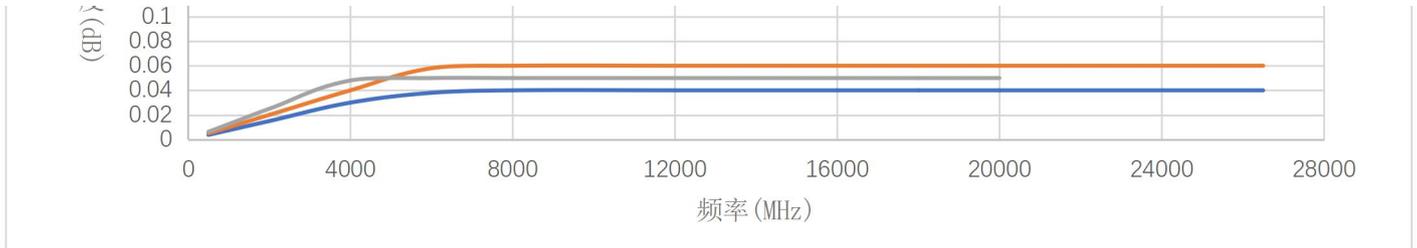
► 电缆规格

| 型号 | S0 | | S1 | | S2 | |
|---|---------|-------|---------|-------|---------|-------|
| 机械结构指标 | | | | | | |
| 内导体 | 0.72 | | 1.02 | | 1.29 | |
| 绝缘层 | 2.21 | | 3.07 | | 3.95 | |
| 内屏蔽层 | 2.40 | | 3.27 | | 4.15 | |
| 中间层 | 2.80 | | 3.41 | | 4.28 | |
| 外屏蔽层 | 3.15 | | 3.99 | | 4.73 | |
| 护套 | 3.60 | | 4.60 | | 5.20 | |
| 电气性能指标 | | | | | | |
| 阻抗(Ω) | 50 | | 50 | | 50 | |
| 传输速率(%) | 74 | | 76 | | 76 | |
| 屏蔽效率 (dB) | < -90 | | < -100 | | < -100 | |
| 时延 (ns/m) | 4.50 | | 4.38 | | 4.38 | |
| 电容 (pF/m) | 90.5 | | 87.3 | | 86.0 | |
| 截止频率(GHz) | 48 | | 35 | | 28 | |
| 耐压(V,DC) | 600 | | 850 | | 1100 | |
| 静态弯曲半径 (mm) | 18 | | 23 | | 26 | |
| 动态弯曲半径 (mm) | 36 | | 46 | | 52 | |
| 工作温度 ($^{\circ}\text{C}$) | -55~200 | | -55~200 | | -55~200 | |
| 衰减 (+25$^{\circ}\text{C}$室温) 与平均功率 (+40$^{\circ}\text{C}$, 标准大气压, 驻波 1: 1) | | | | | | |
| 频率 (MHz) | dB/100m | KW | dB/100m | KW | dB/100m | KW |
| 500 | 30.87 | 0.580 | 24.88 | 0.809 | 19.44 | 1.065 |
| 1000 | 43.79 | 0.409 | 35.36 | 0.569 | 27.67 | 0.749 |
| 2000 | 62.18 | 0.288 | 50.35 | 0.400 | 39.47 | 0.525 |
| 4000 | 88.45 | 0.202 | 71.90 | 0.280 | 56.52 | 0.366 |
| 6000 | 108.82 | 0.165 | 88.71 | 0.227 | 69.87 | 0.296 |
| 8000 | 141.47 | 0.127 | 115.85 | 0.174 | 81.31 | 0.255 |
| 12000 | 155.44 | 0.115 | 127.53 | 0.158 | 100.89 | 0.205 |
| 16000 | 180.43 | 0.099 | 148.52 | 0.136 | 117.76 | 0.176 |
| 18000 | 191.82 | 0.093 | 158.14 | 0.127 | 125.51 | 0.165 |
| 20000 | 202.65 | 0.088 | 167.30 | 0.120 | 132.90 | 0.156 |
| 26500 | 234.80 | 0.076 | 194.63 | 0.103 | 155.04 | 0.134 |
| 40000 | 291.75 | 0.061 | | | | |

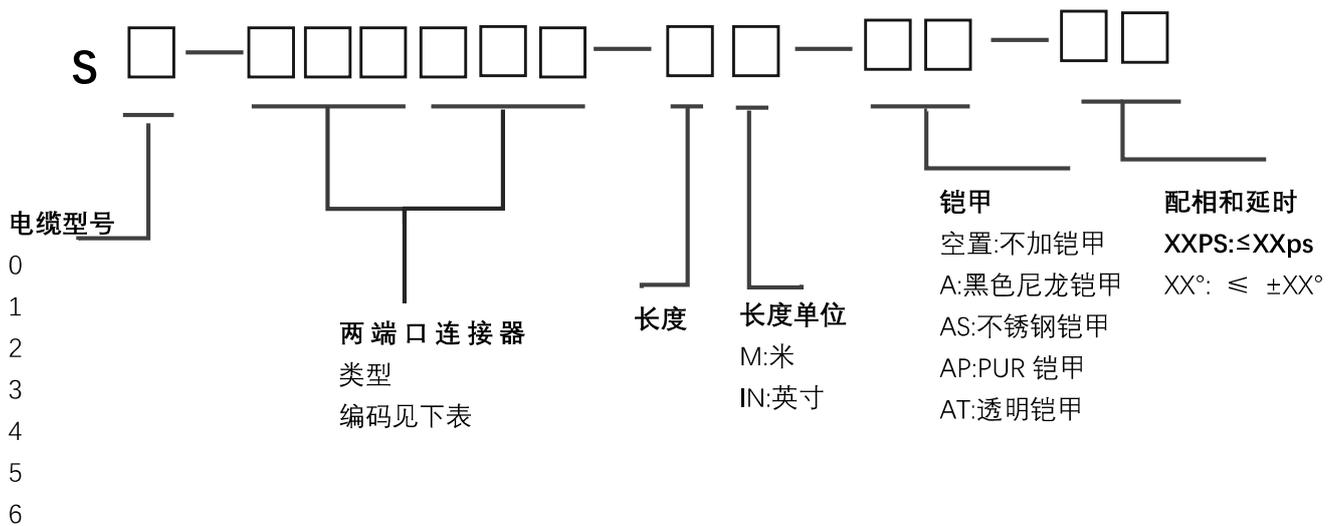
| 机械结构指标 | | | | | | | | |
|--|-----------|-------|----------|-------|---------|-------|----------|-------|
| 内导体 | 1.57 | | 2.06 | | 3.50 | | 4.40 | |
| 绝缘层 | 4.72 | | 5.89 | | 9.90 | | 12.50 | |
| 内屏蔽层 | 5.18 | | 6.05 | | 10.17 | | 12.77 | |
| 中间层 | 5.06 | | 6.17 | | 10.30 | | 12.91 | |
| 外屏蔽层 | 5.64 | | 6.81 | | 11.02 | | 13.63 | |
| 护套 | 6.20 | | 7.62 | | 12.00 | | 14.70 | |
| 电气性能指标 | | | | | | | | |
| 阻抗(Ω) | 50 | | 50 | | 50 | | 50 | |
| 传输速率(%) | 76 | | 76 | | 76 | | 76 | |
| 屏蔽效率 (dB) | < -100 | | < -100 | | < -100 | | < -100 | |
| 时延 (ns/m) | 4.38 | | 4.38 | | 4 | | 4.38 | |
| 电容 (pF/m) | 87.4 | | 91.6 | | 87.3 | | 86.9 | |
| 截止频率(GHz) | 23 | | 18 | | 11 | | 8 | |
| 耐压(V,DC) | 1300 | | 1600 | | 2500 | | 3100 | |
| 静态弯曲半径 (mm) | 31 | | 38 | | 60 | | 74 | |
| 动态弯曲半径 (mm) | 62 | | 76 | | 120 | | 147 | |
| 工作温度 ($^{\circ}\text{C}$) | -55~200 | | -55~200 | | -55~200 | | -55~200 | |
| 衰减 (+25 $^{\circ}\text{C}$ 室温) 与平均功率 (+40 $^{\circ}\text{C}$, 标准大气压, 驻波 1: 1) | | | | | | | | |
| 频率 (MHz) | dB/100m | KW | dB/100m | KW | dB/100m | KW | dB/100m | KW |
| 500 | 15.55 | 1.411 | 12.29 | 2.703 | 9.06 | 4.631 | 7.10 | 6.433 |
| 1000 | 22.17 | 0.990 | 17.55 | 1.892 | 12.99 | 3.23 | 10.21 | 4.472 |
| 2000 | 31.70 | 0.693 | 25.17 | 1.320 | 18.72 | 2.241 | 14.79 | 3.088 |
| 4000 | 45.52 | 0.482 | 36.29 | 0.915 | 27.17 | 1.544 | 21.60 | 2.114 |
| 6000 | 56.40 | 0.389 | 45.10 | 0.737 | 33.94 | 1.236 | 27.11 | 1.684 |
| 8000 | 74.15 | 0.334 | 52.71 | 0.630 | 39.83 | 1.053 | | |
| 12000 | 81.84 | 0.268 | 65.85 | 0.504 | | | | |
| 16000 | 95.77 | 0.229 | 77.31 | 0.430 | | | | |
| 18000 | 102.19 | 0.215 | 82.61 | 0.402 | | | | |
| K1 | 0.68243 | | 0.536417 | | 0.39168 | | 0.304208 | |
| K2 | 0.0005906 | | 0.000591 | | 0.0006 | | 0.000591 | |

八 工 · ■





▶ 组件选型信息



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| 连接器 代码 | 连接器类型 | 工作 频率 | S0 | S1 | S2 | S3 | S4 | S5 | S6 | 驻波最大 |
|-----------|----------------------|----------|----|----|----|----|----|----|----|------|
| 2.92M | 2.92mm Male | DC-40GHz | ● | | | | | | | 1.30 |
| 2.92F | 2.92mm Female | DC-40GHz | ● | | | | | | | 1.30 |
| SMAM | SMA Male | DC-27GHz | | ● | ● | ● | ● | | | 1.25 |
| SMAWM | SMA Male Right Angle | DC-18GHz | | ● | ● | | | | | 1.25 |
| SMAF | SMA Female | DC-27GHz | | ● | | ● | ● | | | 1.25 |
| NM | N Male | DC-18GHz | | ● | ● | ● | ● | ● | ● | 1.25 |
| NF | N Female | DC-18GHz | | ● | ● | ● | ● | ● | ● | 1.25 |
| TNCM | TNC Male | DC-12GHz | | ● | | | | ● | ● | 1.25 |
| SCM | SC Male | DC-6GHz | | | | | | ● | ● | 1.25 |
| DINM | 7/16 Male | DC-6GHZ | | | | | | ● | ● | 1.25 |