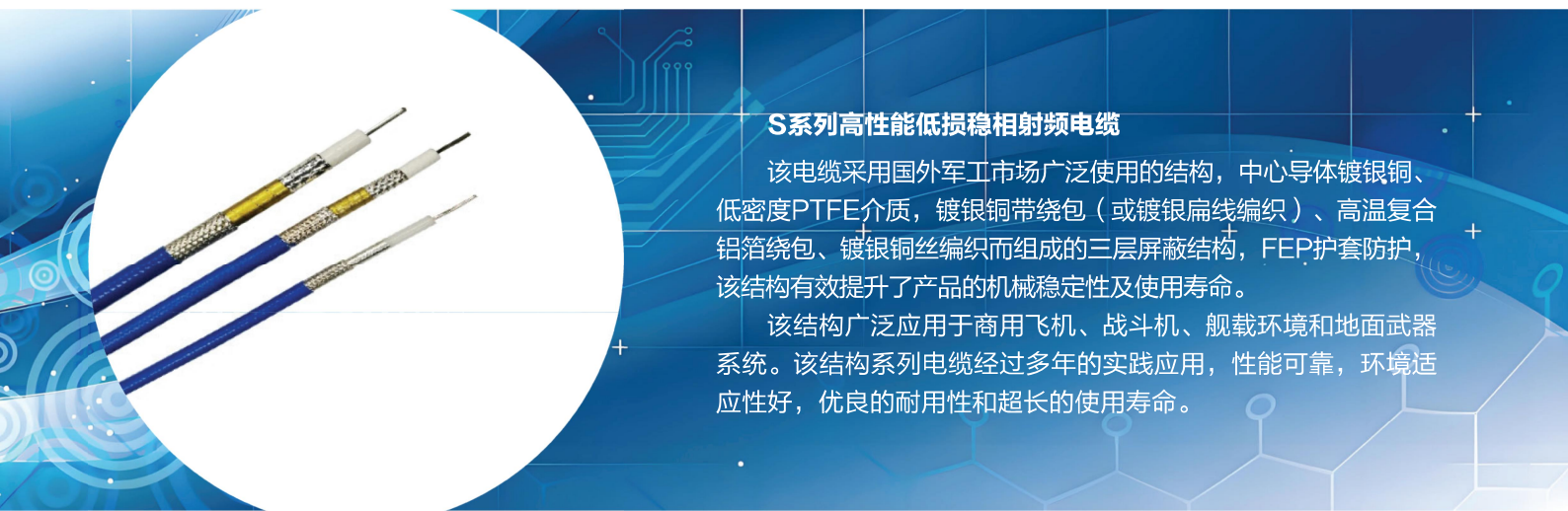


# S系列 高性能低损稳相射频电缆

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## 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。

### 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

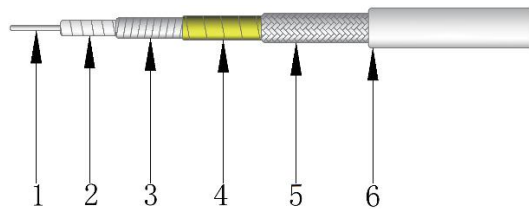
## 知名品牌射频电缆对比表

| 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      |



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## 高性能低损稳相射频电缆



- 1-中心导体——镀银铜
- 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      |       | 3.85      |       |
| 内屏蔽层                                       | 2.40      |       | 3.27      |       | 4.05      |       |
| 中间层                                        | 2.80      |       | 3.41      |       | 4.18      |       |
| 外屏蔽层                                       | 3.15      |       | 3.87      |       | 4.63      |       |
| 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 (°C)                                  | -55~200   |       | -55~200   |       | -55~200   |       |
| 衰减 (+25°C室温) 与平均功率 (+40°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 |           |       |           |       |
| K1                                         | 1.3707349 |       | 1.0994853 |       | 0.856234  |       |
| K2                                         | 0.00044   |       | 0.0005906 |       | 0.0005908 |       |

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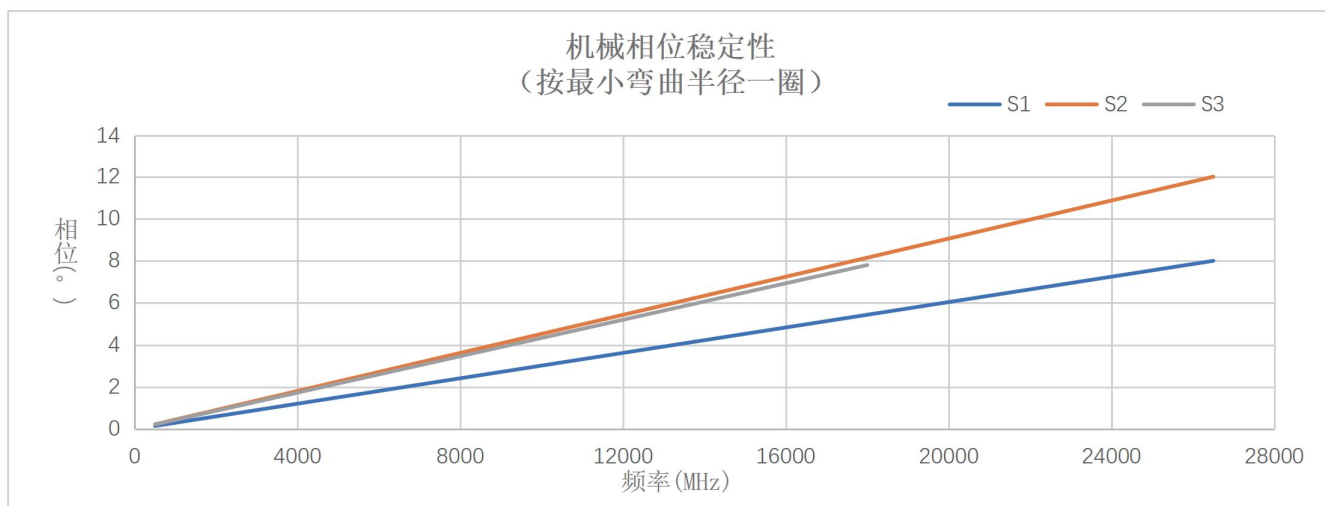
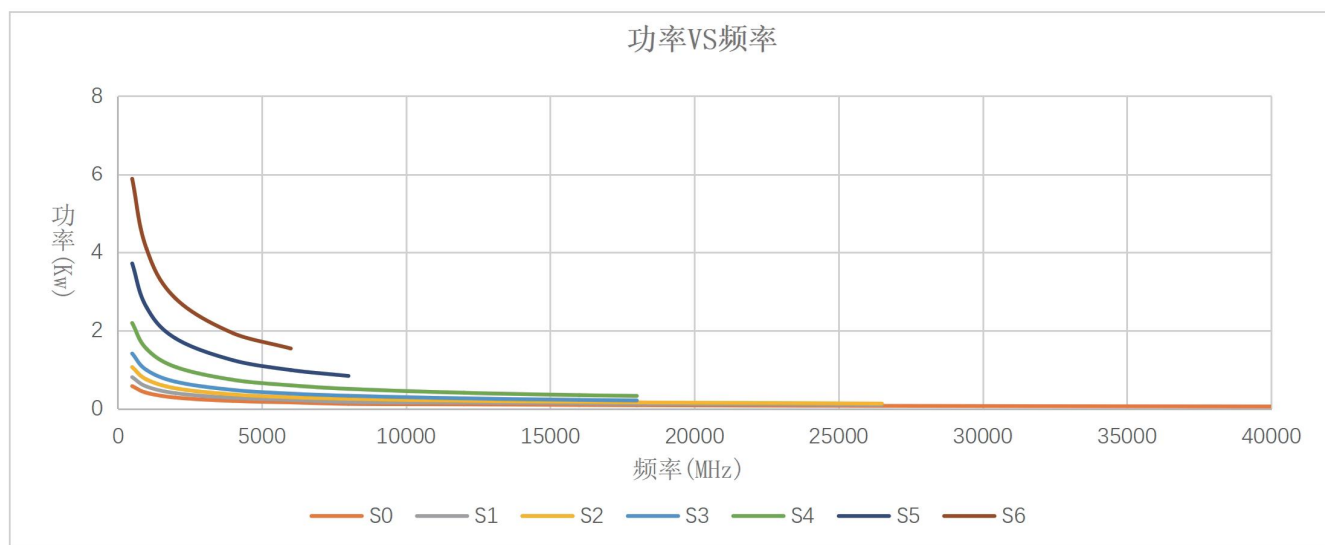
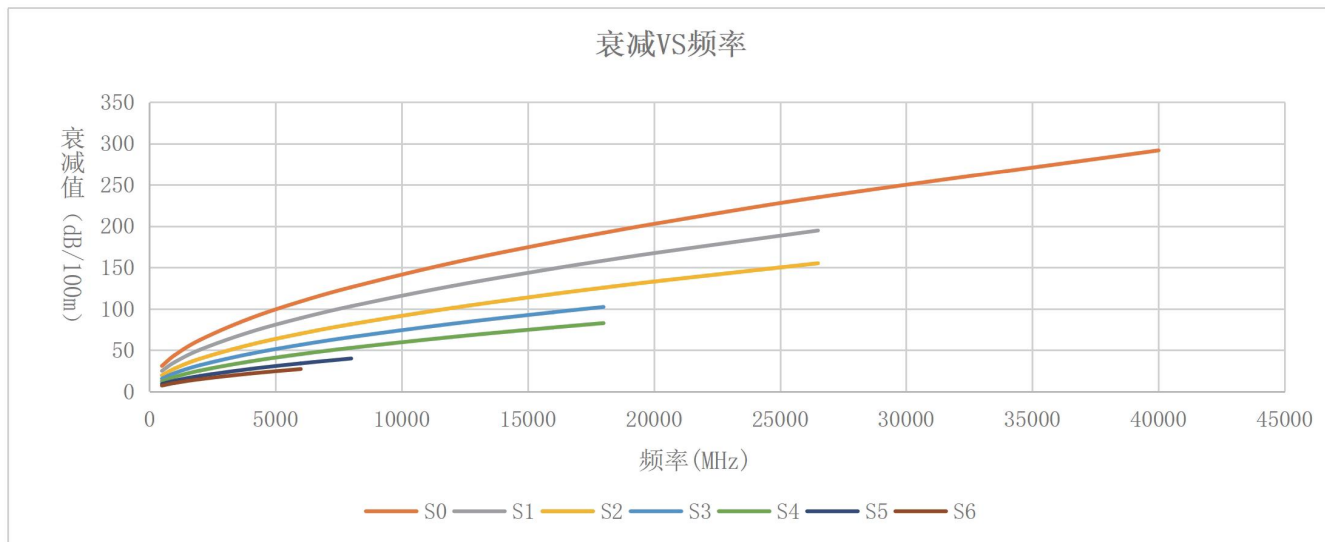
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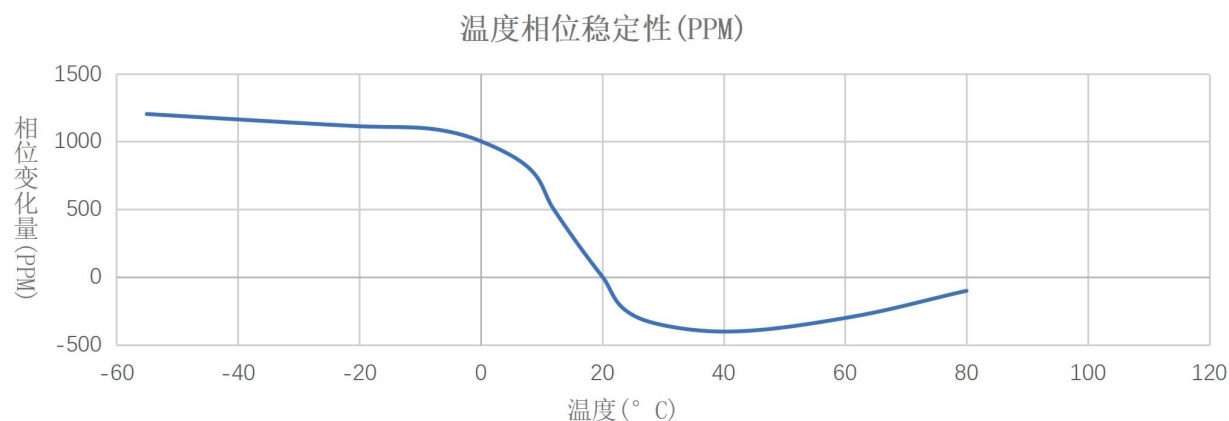
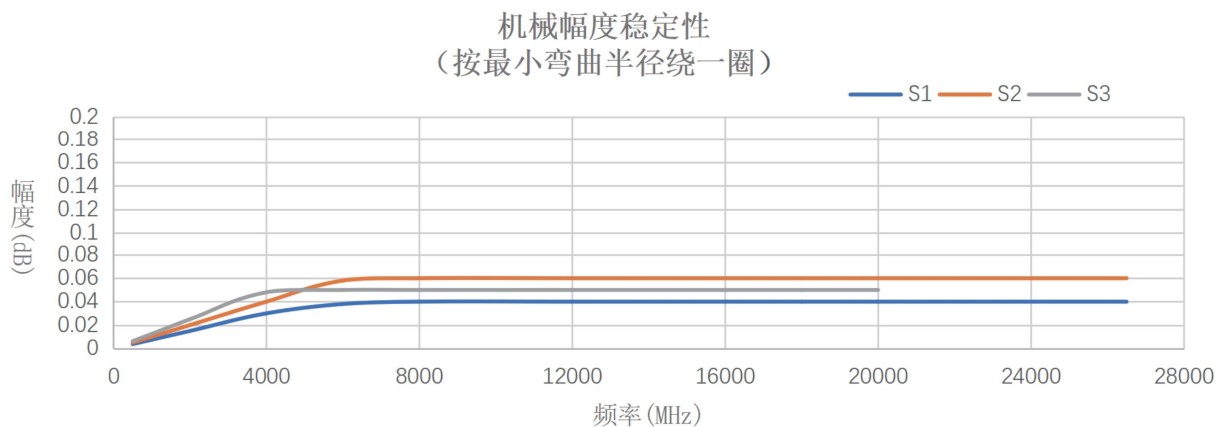
| 型号                                  | S3        |       | S4       |       | S5      |       | S6       |       |
|-------------------------------------|-----------|-------|----------|-------|---------|-------|----------|-------|
| 机械结构指标                              |           |       |          |       |         |       |          |       |
| 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 (℃)                            | -55~200   |       | -55~200  |       | -55~200 |       | -55~200  |       |
| 衰减（+25℃室温）与平均功率（+40℃，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 |       |

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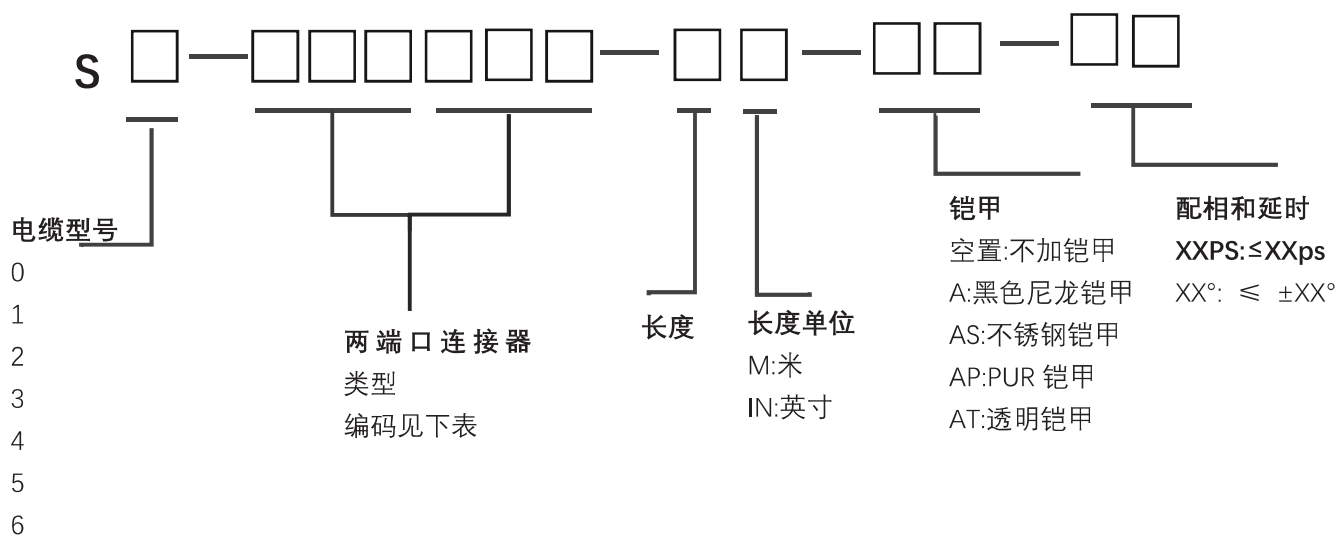
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## ► 测试数据





### ► 组件选型信息



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高性能低损稳相射频电缆

► 连接器选型参考

| 连接器<br>代码 | 连接器类型                | 工作<br>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 |