

# D-SS-06-T series Optical Delay Line & Optical Simulator

## Product Features

- ※ Bandwidth to 6.5GHz
- ※ High dynamic range
- ※ Wide temperature application
- ※ Low amplitude response



## Applications

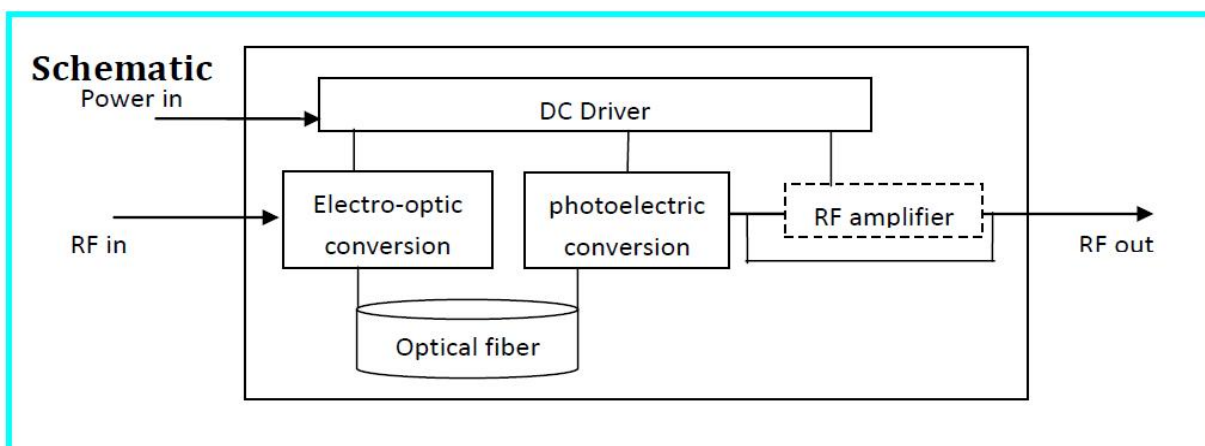
- ※ Radar testing/calibration
- ※ Signal processing
- ※ ECM Electronic countermeasures
- ※ Phased array antenna
- ※ Antenna simulation



## Introduce Of D-SS-06-T series

Depended on Microwave-photonic technology, D-SS-06-T series optical delay line & optical simulator delivers unmatched performance for radar testing, signal processing, phased antenna array, antenna simulation and phase noise testing. It can work effectively in the whole P/L/S/C bandwidth, with less insertion loss , high dynamic range, strong electro-magnetic isolation and triple transit signals that are immeasurable.

## Principle diagram



### Optical and Electrical Specification ( $T_C = 22 \pm 3^\circ\text{C}$ )

| Parameter                      | Min. | Typ.    | Max.      | Unit     | Remark     |
|--------------------------------|------|---------|-----------|----------|------------|
| Frequency Range                | 0.1  | -       | 6.5       | GHz      |            |
| Amplitude Flatness             | -    | $\pm 2$ | $\pm 2.5$ | dB       |            |
| Time Delay                     | 0.01 | -       | 150       | us       | Customized |
| Delay Accuracy                 | -5‰  | -       | +5‰       | -        |            |
| Insertion Loss                 | 0    | 10      | 20        | dB       | Customized |
| Input VSWR                     | -    | 1.5     | 2         | -        |            |
| Output VSWR                    | -    | 1.5     | 2         | -        |            |
| Impedance                      | -    | 50      | -         | $\Omega$ |            |
| Input 1 dB Compression         | -    | +10     | +15       | dBm      |            |
| Spurious Signal Rejection      | 60   | -       | -         | dBc      |            |
| Noise Figure                   | -    | 40      | 50        | dB       | 5us, 25°C  |
| Operate Temperature            | -20  | -       | +70       | °C       |            |
| Storage Temperature            | -40  | -       | +80       | °C       |            |
| Relative Delay vs. Temperature | -    | -       | 7         | ppm/°C   |            |
| Insertion Loss vs. Temperature | -    | 3       | 6         | %/°C     |            |

### Power Supply ( $T_C = 22 \pm 3^\circ\text{C}$ )

| Pin           | 1  | 2 | 3   | 4 | 5 | 6      | 7 | 8  | 9 |
|---------------|----|---|-----|---|---|--------|---|----|---|
| Voltage       | NC |   | GND |   |   | +12 V  |   | NC |   |
| Rated current | -  |   | -   |   |   | 0.15 A |   | -  |   |
| Max Current   | -  |   | -   |   |   | 1 A    |   | -  |   |

(1) Test condition:  $V_{in} = +12V$ .



**Typical Response Curve**

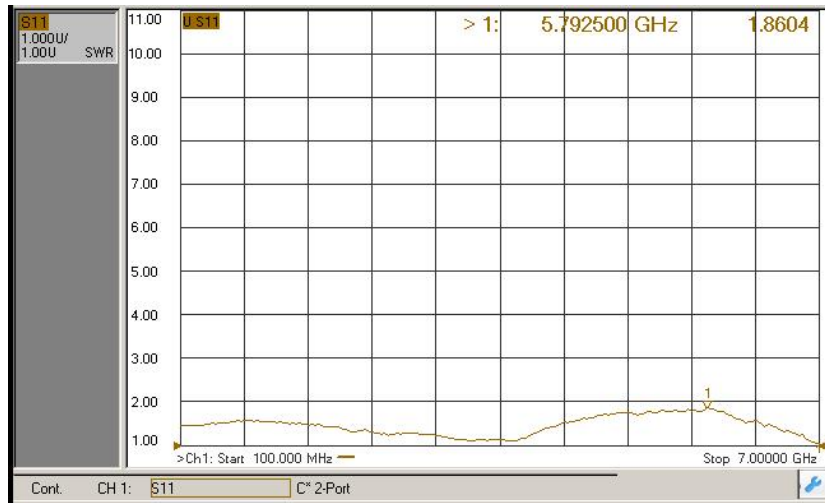


Fig1. Typical Response Curve-S11

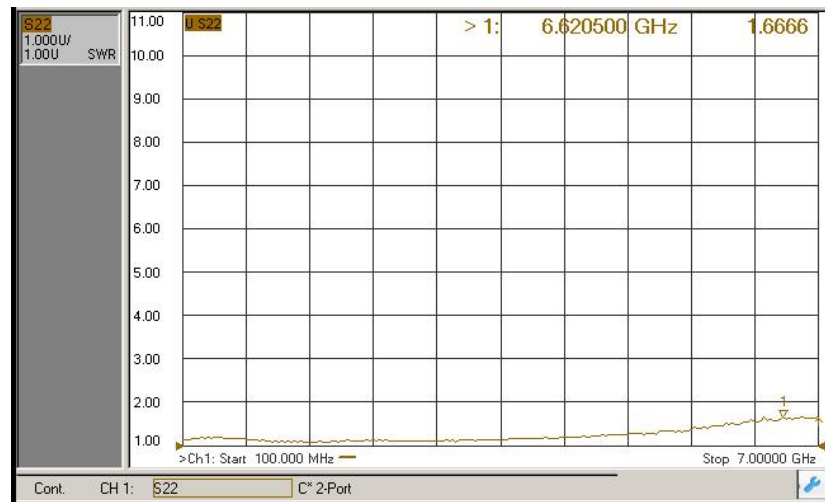


Fig2. Typical Response Curve-S22

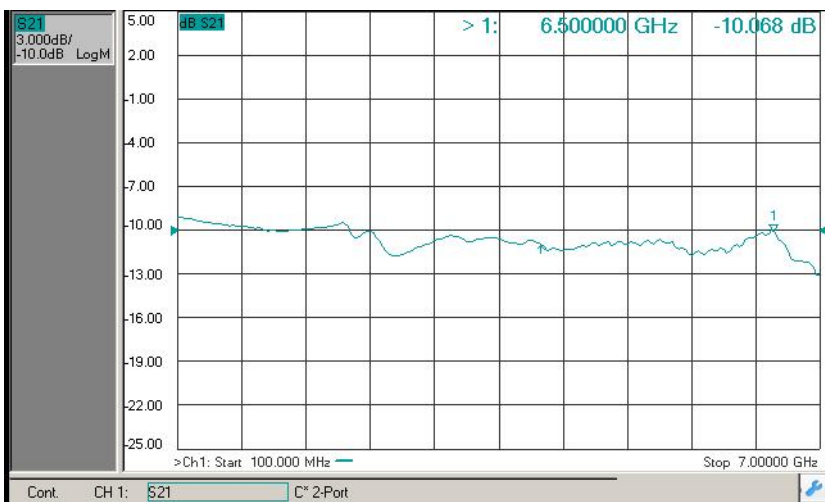
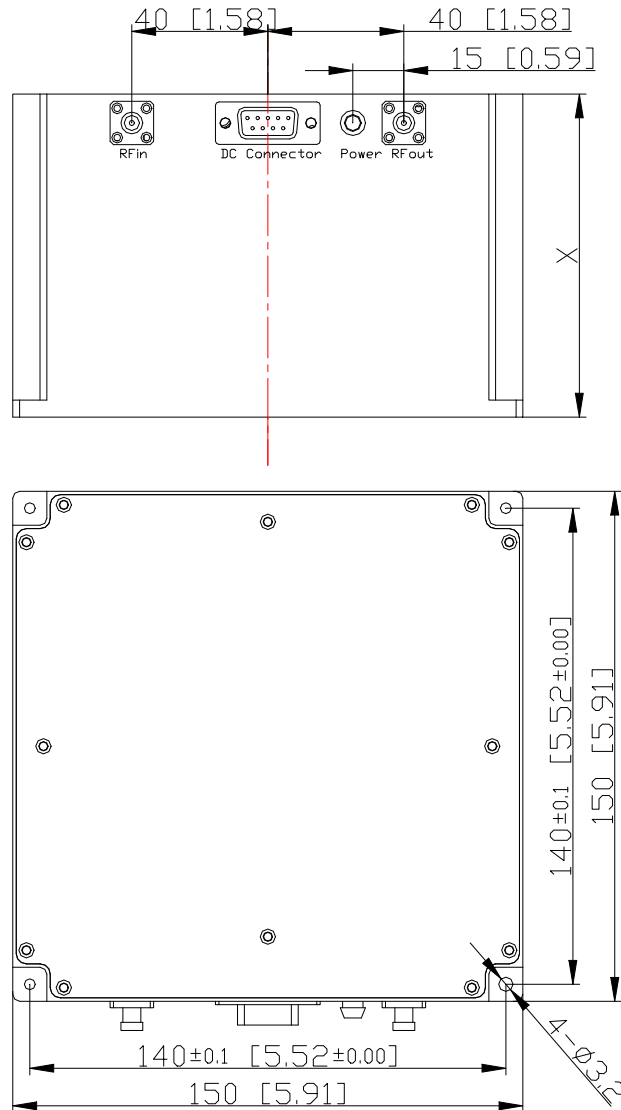


Fig3. Typical Response Curve-S21



**Dimension** Unit: mm[inch]


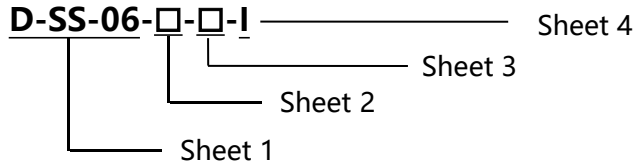
RF connector: SMA-K (Customized)

DC connector: DE-9PS (Customized)

| Height value: X (mm) |             |    |    |    |     |     |          |
|----------------------|-------------|----|----|----|-----|-----|----------|
| Product Type         | D-SS-06-T-G |    |    |    |     |     | Remark   |
| Time delay (us)      | 8           | 20 | 35 | 50 | 60  | 80  | Standard |
| X (mm)               | 37          | 50 | 65 | 80 | 90  | 110 |          |
| Product Type         | D-SS-06-T-P |    |    |    |     |     | Remark   |
| Time Delay (us)      | 8           | 35 | 60 | 80 | 110 | 150 | Compact  |
| X (mm)               | 20          | 45 | 55 | 65 | 78  | 95  |          |



## Order Information



Sheet 1:

| Symbol  | Description   |
|---------|---|
| D-SS-06 | Fixed fiber optic delay line, Frequency: 0.1~6.5GHz |

Sheet 2:

| Symbol | Description                             |
|--------|---|
| T      | Time delay , Customized, 0.01 to 150 us |

Sheet 3:

| Symbol | Dimension(refer to Height value: X (mm) ) |
|--------|---|
| G      | Standard structure                        |
| P      | Compact structure                         |
| CM     | Customized structure                      |

Sheet 4:

| Symbol | Description   |
|--------|---|
| I      | Industrial grade:<br>Operate Temperature: -20°C to +70°C<br>Storage Temperature: -40°C to +80°C |

For example: **D-SS-06-08-G-I** which means fixed fiber optic delay line, frequency: 0.1~6.5GHz, time delay: 8us, standard structure, operate temperature: -20°C to +70°C, storage temperature: -40°C to +80°C.

