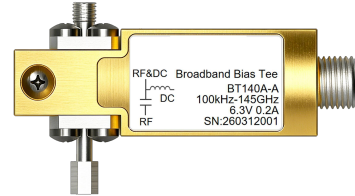




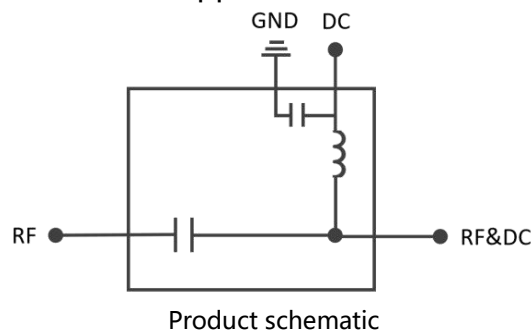
### Product Features

- Frequency Range, 100kHz~145GHz
- The Voltage, 6.3V DC Max.
- The Current, 0.2A DC Max.
- Excellent Group Delay for All-band
- Low VSWR, 1.8:1@100kHz~145GHz Typ.
- High RF performance, ultra-competitive price
- Low Insertion loss, 2.0dB@100kHz~145GHz Typ.



### Product Overview

The BT140A is an ultra-broadband, low loss, and supports a maximum 32dBm RF power input coaxial bias-tee, which covers the frequency of 100kHz to 145GHz, to provide a bias power supply for amplifiers, photodiodes or optical modulators, mainly used in biasing amplifiers, laser diodes, active antennas and other applications.



### Typical Applications

- Ultra-Broadband amplifier bias power supply
- Spatial Light Modulator bias power supply
- Photo-Communication & laser driver bias power supply
- Active antenna bias power supply

### Configurations

- BT140A-A -RF port: 0.8mm male, RF&DC port: 0.8mm female
- BT140A-B -RF port: 0.8mm female, RF&DC port: 0.8mm male
- BT140A-C -RF port: 0.8mm male, RF&DC port: 0.8mm male
- BT140A-D -RF port: 0.8mm female, RF&DC port: 0.8mm female

There are four configurations of this bias-tee. The model BT140A-A is used as an example in this datasheet. For more information, please refer to the Physical Dimensions section. The DC-port is always SMA female.

## Specifications

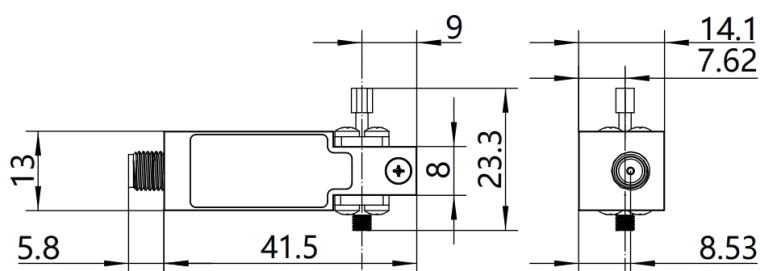
| Electrical Specifications: |                  |               |      |      |            |
|----------------------------|------------------|---------------|------|------|------------|
| Item                       | Condition        |               | Min. | Typ. | Max. Units |
| Frequency Range            | -                |               | 0.1  | -    | 145000 MHz |
| Nominal Impedance          | -                |               | -    | 50   | - Ω        |
| Insertion Loss             | 100kHz-145GHz    |               | -    | 2.0  | 3.2 dB     |
| VSWR                       | RF port          | 100kHz~145GHz | -    | 1.8  | 2.5 :1     |
|                            | RF&DC port       | 100kHz~145GHz | -    | 1.8  | 2.5 :1     |
| Group Delay Ripple         | 100kHz~145GHz    |               | -    | ±30  | - ps       |
| Operating RF input Power   | 100kHz~145GHz    |               | -    | -    | 32 dBm     |
| DC Resistance              | DC to RF&DC port |               | -    | 3.0  | - Ω        |
| DC Voltage                 | -                |               | -    | -    | 6.3 V      |
| DC Current                 | -                |               | -    | -    | 0.2 A      |

| Mechanical Specifications: |                                               |       |
|----------------------------|-----------------------------------------------|-------|
| Item                       | Spec.                                         | Units |
| RF/RF&DC Connectors        | 0.8-male/0.8-female                           | -     |
| DC Connectors              | SMA-female                                    | -     |
| Physical Dimensions(L*W*H) | 41.5 * 13 * 14.1 (RF interfaces not included) | mm    |
| Net Weight                 | ≈38                                           | g     |
| Material                   | Aluminium alloy&Copper                        | -     |
| Surface Finish             | Conductive oxidation&Gold-plated copper       | -     |
| Color                      | Aluminium color&Golden                        | -     |

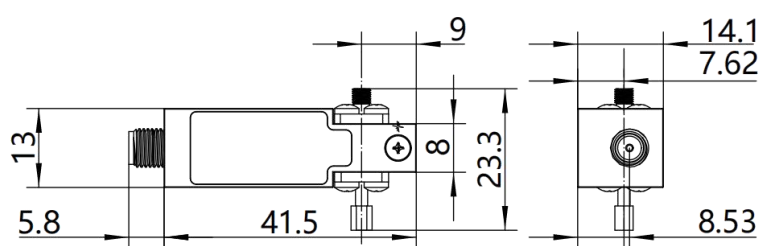
\* Note: Package Dimensions & Gross Weight are subject to the actual delivery.

| Other Specifications: |           |       |
|-----------------------|-----------|-------|
| Item                  | Spec.     | Units |
| Operating Temperature | +10 ~ +50 | °C    |
| Storage Temperature   | -45 ~ +85 | °C    |
| Humidity range        | <93%@40°C | %rh   |
| Altitude Range        | <4600     | m     |

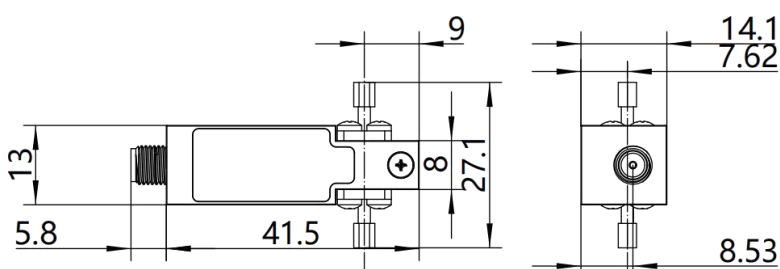
## Physical Dimensions (Unit:mm)



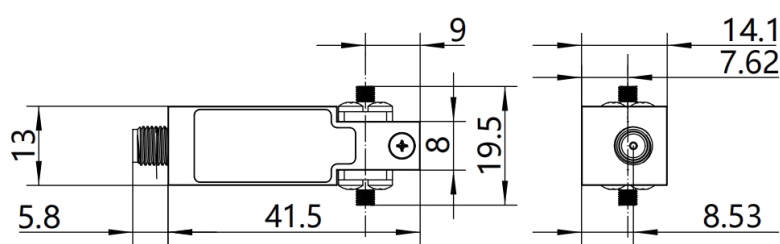
BT140A-A



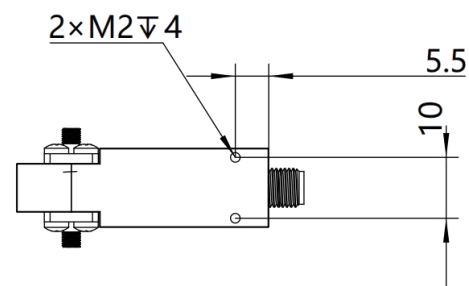
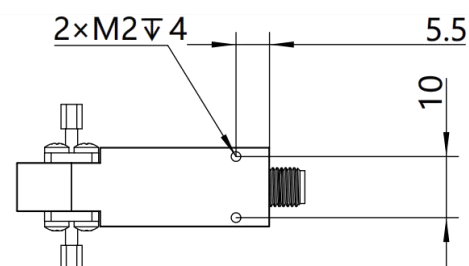
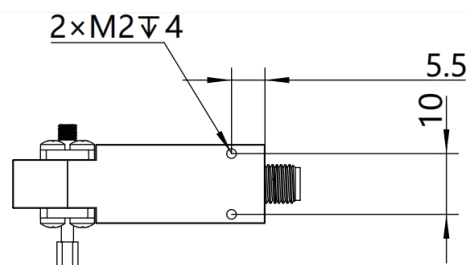
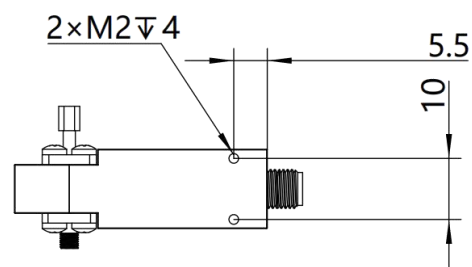
BT140A-B



BT140A-C



BT140A-D



## Interface Information

### Interface definition:

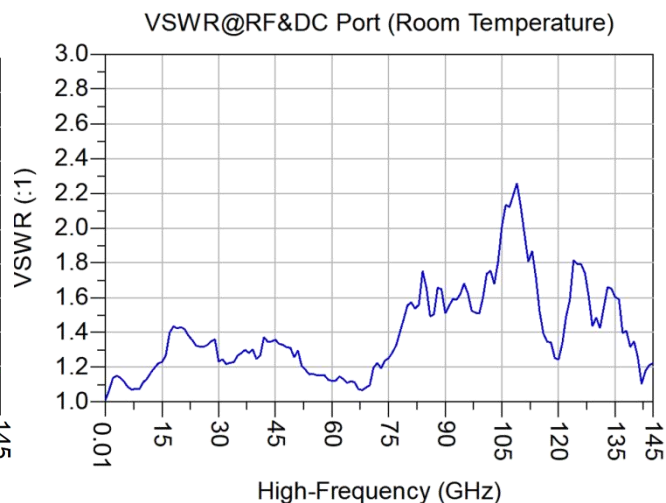
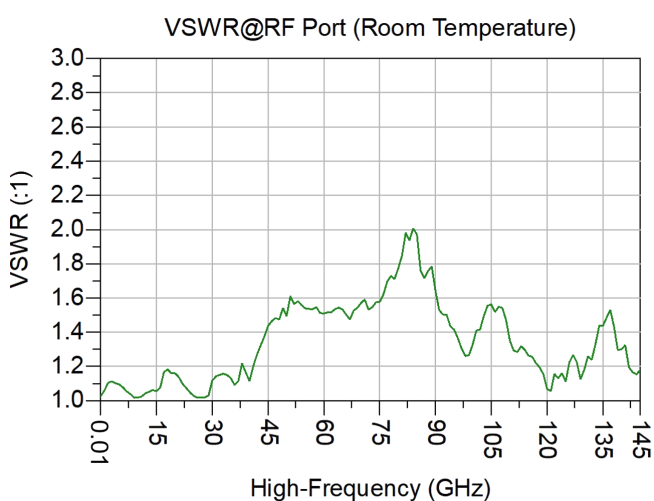
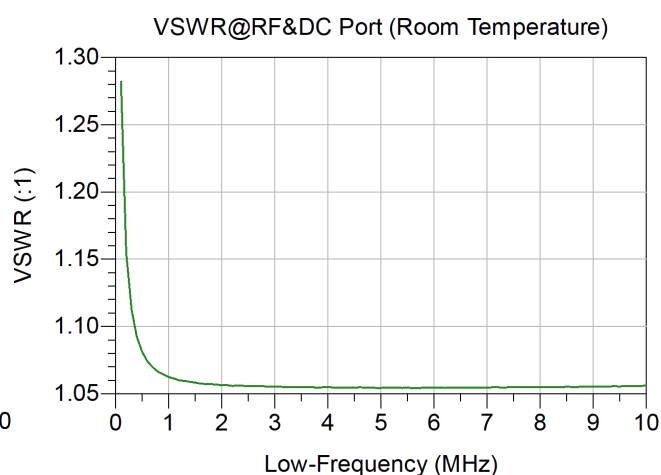
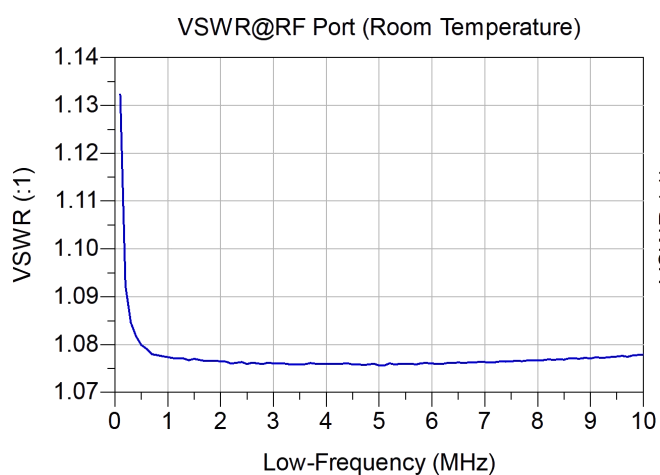
| NO. | Function   | Description                  |
|-----|------------|------------------------------|
| 1   | RF Port    | RF signal input port         |
| 2   | RF&DC Port | RF signal and DC output port |
| 3   | DC Port    | DC input port                |

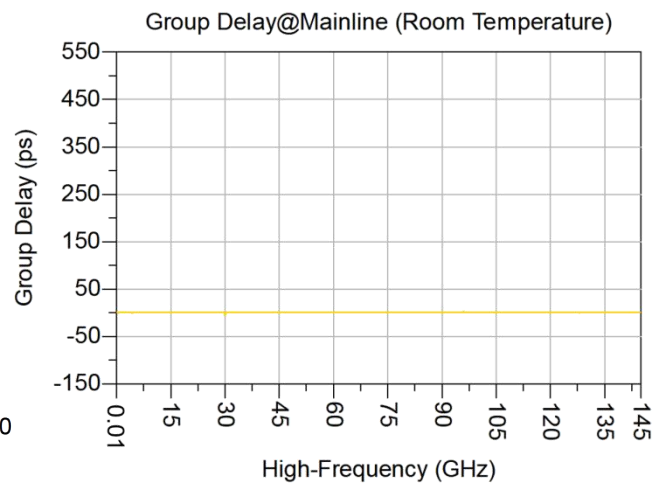
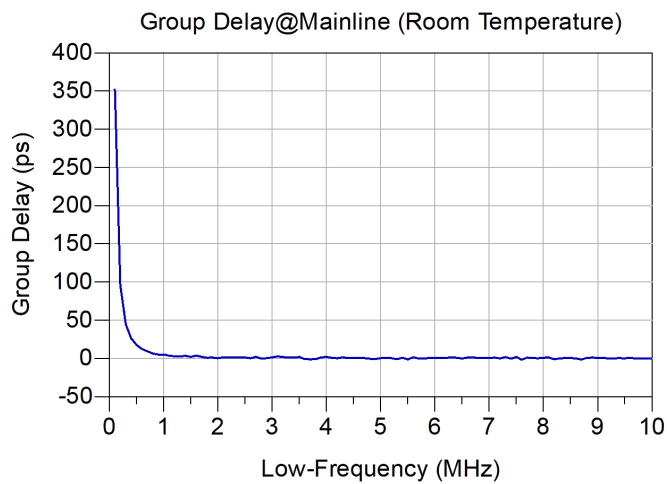
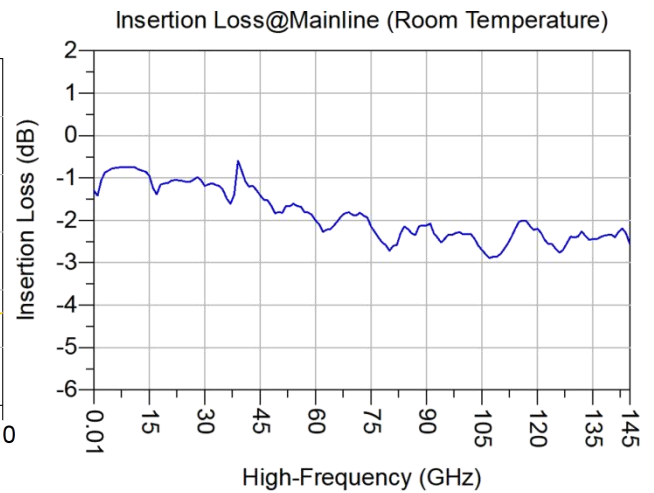
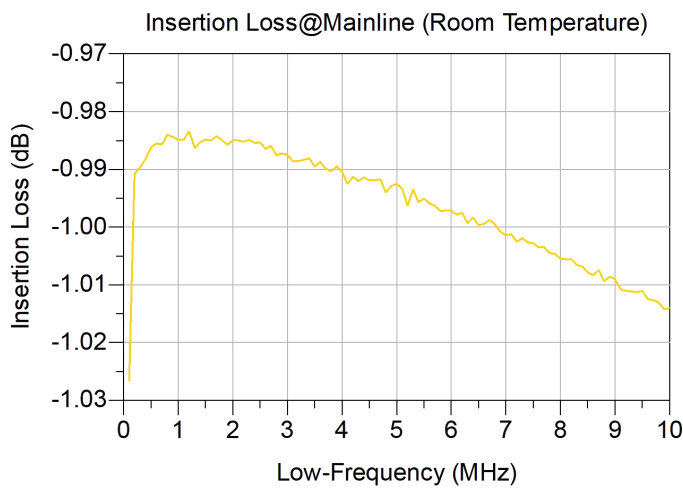
\* Note: Please refer to the physical dimensions of the corresponding ports.

## Typical Performance Data

| Freq.(MHz) | VSWR(:1) |       | Insertion Loss (dB)<br>(with current) | Group Delay (ps)<br>(with current) |
|------------|----------|-------|---------------------------------------|------------------------------------|
|            | RF       | RF&DC | RF to RF&DC                           | RF to RF&DC                        |
| 0.1        | 1.13     | 1.28  | -1.03                                 | -                                  |
| 0.2        | 1.09     | 1.16  | -0.99                                 | -                                  |
| 0.5        | 1.08     | 1.08  | -0.99                                 | 17.60                              |
| 1          | 1.08     | 1.06  | -0.99                                 | 5.11                               |
| 2          | 1.08     | 1.06  | -0.99                                 | 0.17                               |
| 5          | 1.08     | 1.05  | -0.99                                 | 0.35                               |
| 10         | 1.08     | 1.06  | -1.01                                 | 0.02                               |
| 100        | 1.08     | 1.07  | -1.35                                 | 0.13                               |
| 300        | 1.02     | 1.05  | -1.23                                 | 0.72                               |
| 600        | 1.02     | 1.03  | -1.59                                 | 0.33                               |
| 900        | 1.06     | 1.06  | -1.50                                 | 0.58                               |
| 1000       | 1.06     | 1.07  | -1.48                                 | 0.73                               |
| 5000       | 1.09     | 1.10  | -0.81                                 | 0.16                               |
| 10000      | 1.02     | 1.11  | -0.74                                 | 0.67                               |
| 15000      | 1.05     | 1.23  | -0.94                                 | 0.68                               |
| 20000      | 1.16     | 1.43  | -1.11                                 | 0.62                               |
| 25000      | 1.03     | 1.32  | -1.09                                 | 0.59                               |
| 30000      | 1.05     | 1.38  | -1.08                                 | 5.38                               |
| 35000      | 1.13     | 1.27  | -1.28                                 | 0.34                               |
| 40000      | 1.10     | 1.24  | -0.81                                 | 0.36                               |
| 45000      | 1.42     | 1.34  | -1.33                                 | 0.06                               |
| 50000      | 1.50     | 1.26  | -1.80                                 | 0.60                               |
| 55000      | 1.55     | 1.16  | -1.66                                 | 0.59                               |
| 60000      | 1.51     | 1.12  | -2.00                                 | 0.60                               |
| 65000      | 1.53     | 1.12  | -2.11                                 | 0.53                               |
| 70000      | 1.57     | 1.10  | -1.87                                 | 0.51                               |
| 75000      | 1.58     | 1.25  | -2.14                                 | 0.66                               |
| 80000      | 1.77     | 1.57  | -2.67                                 | 1.23                               |
| 85000      | 1.94     | 1.65  | -2.20                                 | 0.72                               |

|        |      |      |       |      |
|--------|------|------|-------|------|
| 90000  | 1.65 | 1.51 | -2.15 | 0.67 |
| 95000  | 1.42 | 1.68 | -2.43 | 0.29 |
| 100000 | 1.32 | 1.59 | -2.33 | 0.60 |
| 105000 | 1.57 | 2.04 | -2.70 | 0.58 |
| 110000 | 1.35 | 2.11 | -2.82 | 0.53 |
| 115000 | 1.25 | 1.50 | -2.03 | 0.74 |
| 120000 | 1.08 | 1.21 | -2.16 | 0.74 |
| 125000 | 1.17 | 1.75 | -2.67 | 0.19 |
| 130000 | 1.18 | 1.54 | -2.41 | 1.16 |
| 135000 | 1.44 | 1.57 | -2.44 | 0.65 |
| 140000 | 1.23 | 1.32 | -2.33 | 0.45 |
| 145000 | 1.17 | 1.27 | -2.56 | 0.83 |





\* Note: The above is typical data and is not used as an acceptance reference.