

4-Steps Program Controlled Attenuator

1dB LSB/4 Steps/ DC-50GHz

Model: TLDADC50G-11-4

The TLDADC50G-11-4 is an broadband Program controlled electrical attenuator operating from DC to 50 GHz. The attenuator exhibits 3 dB maximum insertion loss and offers 11 dB nominal attenuation control range in 1 dB steps under a 4 steps digital control. The control speed of the attenuator is 20 ms. The RF input and output ports are female 2.4 mm coax connectors.

Features:

- Frequency range: DC-50GHz
- 4 steps, 1 dB LSB, 11 dB Range
- Low Insertion Loss
- High Attenuator Accuracy

Applications:

- Radar Systems
- Communication Systems
- Testing Equipment

电气特性 Electrical Characteristics:

| 参数 Parameter | Min | Typ | Max | 单位 Units |
|--------------------------------|--|------|--------|----------|
| 频率范围 Frequency range | DC-50 | | | GHz |
| 插损 Insertion Loss(@0dB) | | | 3.0 | dB |
| 衰减范围 Attenuation Range | 11 | | | dB |
| 衰减精度 Attenuation Accuracy | ±1 dB (1dB); ±1 dB (2dB); ±1 dB (4dB); ±2 dB (11dB) | | | dB |
| 控制级数 Control Step | 4 | | | Step |
| 衰减步进 Attenuation Step | 1 | | | dB |
| 切换时间 Switching Speed | | | 20 | ms |
| 衰减稳定度 Attenuation Stability | | 0.05 | | dB |
| 驻波 Input VSWR | | | 1.7 | :1 |
| 寿命 Operating Life (Per Switch) | 1000000 | | | cycles |
| 最大输入功率 Input Max Power | | | 30(CW) | dBm |
| 直流电压 DC Voltage | 20 | 24 | 28 | V DC |
| 直流电流 DC Supply Current | 126(every step) | | | mA |
| 阻抗 Impedance | 50 | | | Ohms |

机械特性 Mechanical Specifications:

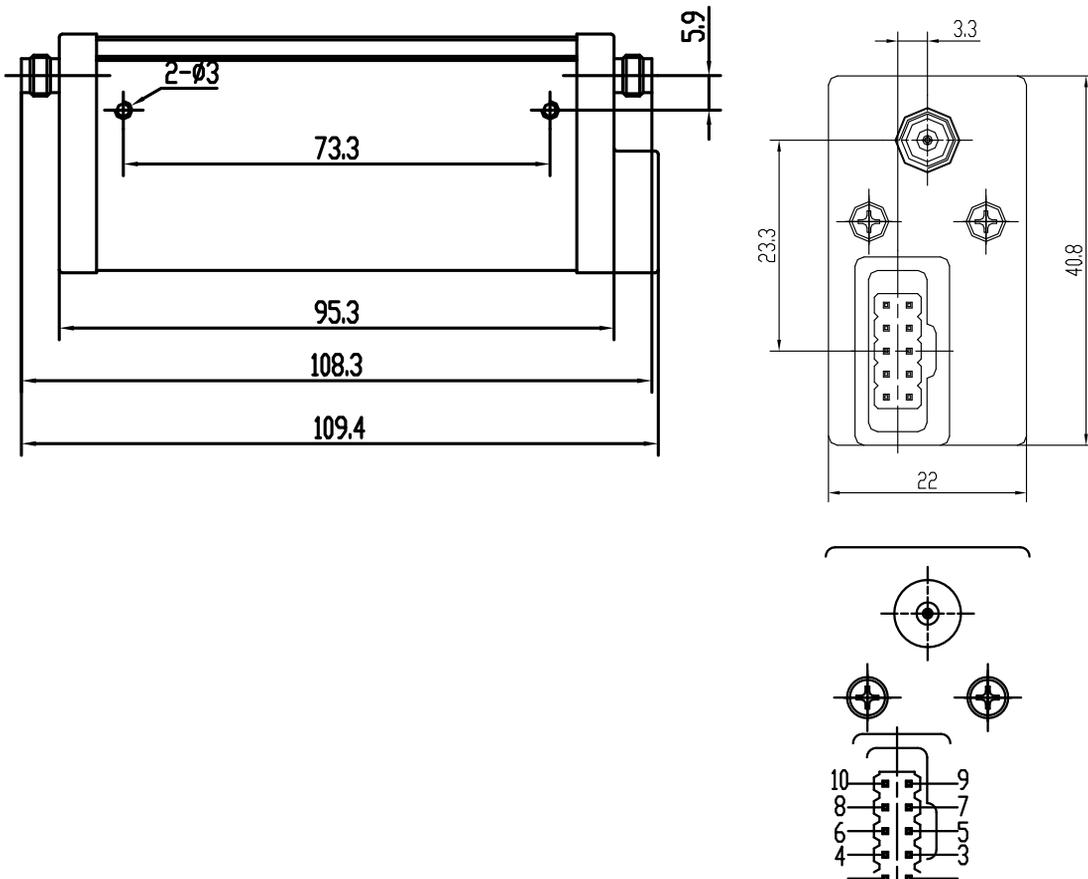
| 描述 Description | 参数 Parameter | 单位 Units |
|---------------------------------|---------------------------|----------|
| 输入/输出接口 Input /Output Connector | 2.4mm Female/2.4mm Female | |
| 控制连接器 Control Connector | 517.076.003.014 | |
| 尺寸 Size | 109.4*40.8*22 | mm |
| 重量 Weight | ≤350 | g |

绝对最大值 Absolute Maximum Ratings :

| 描述 Description | 参数 Parameter | 单位 Units |
|------------------------------|----------------------|----------|
| 射频输入功率 RF Input Power | +30 | dBm |
| ESD灵敏度 ESD sensitivity (HBm) | Class 0, passed 150V | |

外形图 Outline Drawing:

Unit:mm



加电接口 Supply Conector(517.076.003.014):

| 引脚Pin# | 功能Function |
|--------|------------------------|
| 1 | Step1 Straight-through |
| 2 | Step1 1dB attenuation |
| 3 | Ground |
| 4 | Step2 Straight-through |
| 5 | Step3 Straight-through |
| 6 | Step4 Straight-through |
| 7 | Step4 4dB attenuation |
| 8 | Step3 2dB attenuation |
| 9 | Step2 4dB attenuation |
| 10 | +20~+28V DC |

Note:At same step,if the voltage of this pin drops from TTL high level to low level (0V to +1.0Vdc) and the low level lasts for more than 20ms, while other pins (except pins 3 and 10) remain at TTL high level (+4.2V to +5Vdc), their respective functions will be implemented.

| 真值表 Truth Table | | | | |
|-----------------|-------|-------|-------|----------------|
| Step1 | Step2 | Step3 | Step4 | 衰减 Attenuation |
| ○ | ○ | ○ | ○ | 0dB |
| X | ○ | ○ | ○ | 1dB |
| ○ | ○ | X | ○ | 2dB |
| X | ○ | X | ○ | 3dB |
| ○ | X | ○ | ○ | 4dB |
| X | X | ○ | ○ | 5dB |
| ○ | X | X | ○ | 6dB |
| X | X | X | ○ | 7dB |
| ○ | X | ○ | X | 8dB |
| X | X | ○ | X | 9dB |
| ○ | X | X | X | 10dB |
| X | X | X | X | 11dB |

Note:○ represents signal transmission through a straight-through patch, X represents signal transmission through an attenuating patch.

For example, to achieve a 50dB attenuation, the connector should be powered as follows:

- Pin 1: TTL high level
- Pin 2: TTL high level changes to low level and the low level lasts for more than 20ms
- Pin 3: Ground
- Pin 4: TTL high level
- Pin 5: TTL high level changes to low level and the low level lasts for more than 20ms
- Pin 6: TTL high level changes to low level and the low level lasts for more than 20ms
- Pin 7: TTL high level
- Pin 8: TTL high level
- Pin 9: TTL high level changes to low level and the low level lasts for more than 20ms
- Pin 10: +24Vdc

温度环境 Environmental Conditions:

| 参数 Parameter | Min | Typ | Max | 单位 Units |
|--------------------------------|-----|--------|-----|----------|
| 操作温度 Operating Temperature | -55 | | +75 | °C |
| 存储温度 Non-operating Temperature | -55 | | +85 | °C |
| 相对湿度 Relative humidity | | 95 | | % |
| 海拔 Altitude | | 10,000 | | feet |

震动 Shock / Vibration(MIL-STD-810F) 5g rms (15 degree 2KHz) endurance, 1 hour per axis

订货信息 Ordering Information:

| 标准型号 Base Number | 描述 Description | 版本号 Revision |
|------------------|---|--------------|
| TLDADC50G-11-4 | 4-Steps Program Controlled Attenuator, DC-50GHz,11 dB, 1 dB Step Size,2.4mm Female | Rev.1.1 |