DC~40GHz 2.4mm70dB Programmable Step Attenuator

YX-PSADC-40G-70-10P1

Overview:

CS-516S 2.4mm70dB programmable step attenuator can achieve 0~70dB step attenuation in a wide frequency range of DC~40GHz, with a minimum step of 10dB. This programmable step attenuator has the advantages of high attenuation accuracy, good repeatability, low insertion loss, and long service life. It is mainly used to control the signal level amplitude entering the system, control the output signal power of the system, adjust the matching between the signal source and the load, and can also be used to simulate the loss of the signal transmission path in the communication system. It is widely used in various broadband spectrum analyzers, broadband vector network analyzers, broadband synthetic signal sources, noise figure testers, various microwave automatic test systems, and wireless communication systems.

Features:

- High attenuation accuracy
- Good repeatability
- Low insertion loss
- Long service life

Typical Applications:

- Broadband spectrum analyzers
- Broadband vector network analyzers
- Broadband synthesized signal sources
- Noise figure test instruments
- Microwave automatic test systems
- Wireless communication systems

Electrical &Mechanical Specifications				
Frequency Range	DC~40GHz			
Attenuation	70dB			
VSWR	≤1.9			
Input Power (CW)	1W (continuous wave)			
Attenuation	10	20	40	70
Attenuation Accuracy	±1.2	±1.5	±1.5	±3.5
Insertion Loss	≤4.0dB (at 0dB)			
Weight	Max. 0.35kg			
Step Amount	10dB			
Connector Form	2.4mm			
Electrical Connector Form	Pitch: 2.54mm×2.54mm; straight pin section: 0.64mm×0.64mm; number of cores: 10; recommended matching connector: 517.076.003.010 (Oudu); recommended locking pin: 517.063.105.923.000 (optional, 2 pieces/set. Manufacturer: Oudu. Use with matching connector to prevent the connector from falling off).			

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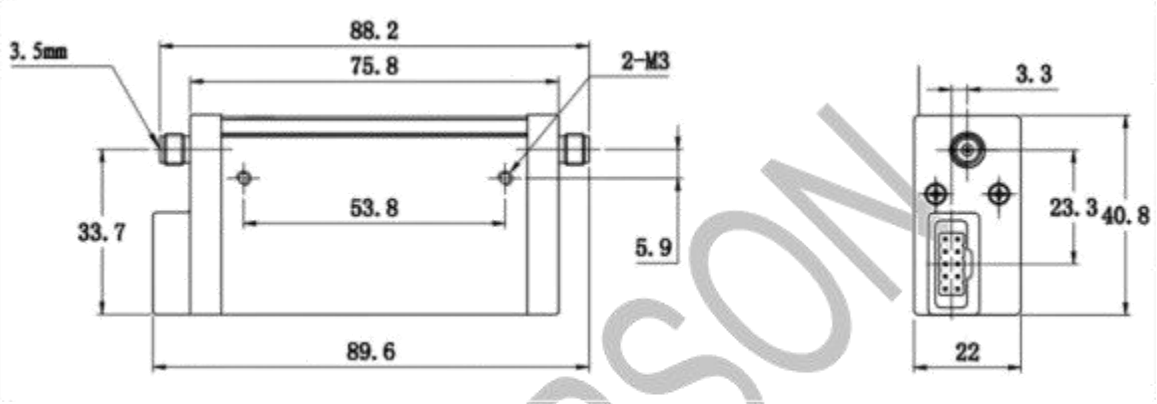
Environmental Specifications	
Operational Temperature	-20℃~+70℃
Storage Temperature	-55℃~85℃
Repeatability	≤0.05dB (typical)
Minimum service life	1 million times (per Stage)
Impact (working state)	10g, 6ms, three-axis six-direction
Vibration (working state)	Acceleration 5g, 50~2000Hz
Shock	Humidity Resistance

Outline drawing(Unit:mm)



Attenuation Composition:

The programmable attenuator contains four parts inside, each part can be switched between straight-through and different attenuation plates to achieve the switching between straight-through and attenuation. For example, the first part contains a straight-through plate and a 10dB attenuation plate, the second part contains a straight-through plate and a 20dB attenuation plate, and the third part contains a straight-through plate and a 40dB attenuation plate. The combination of the straight-through plate and the attenuation plate can achieve an attenuation of 0dB to 70dB. The specific combination is as follows:

Attenuation	First Stage	Second Stage	Third Stage
0dB	O	O	O
10dB	×	O	O
20dB	O	O	×
30dB	×	O	×
40dB	O	×	O
50dB	×	×	O
60dB	O	×	×
70dB	×	×	×

Note: Omeans the transmission signal is transmitted through the straight-through plate, and ×means the transmission signal is transmitted through the attenuation plate.

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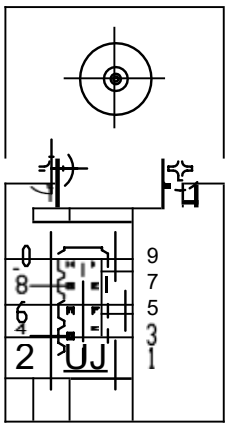
Control Mode:

To drive the relay inside the programmable step attenuator, a DC voltage of 20V to 28Vdc is required, and the driving current is 126mA (at room temperature and 24V driving voltage, per level). The relay has a latching device. After the relay is actuated, the internal driving circuit automatically cuts off the power supply, and the power consumption is low. The relay switching time is ≤20ms.

To control the relay to select a pass-through or attenuation plate, the corresponding connector needs to be input with a TTL level, and the driving mode is a falling edge trigger (the falling edge from high level to low level works, and the low level duration must be greater than 20ms). The specific control relationship is as follows:

Power supply: Pin 10 of the connector is the positive pole of the power supply (+20~+28Vdc), with a rated voltage of +24Vdc, and pin 3 is the negative pole (ground).

Control: If the pin changes from TTL high level to low level (0V~+1.0Vdc) and the low level duration is greater than 20ms, the other pins (except pins 3 and 10) are TTL high level (+4.2V~+5Vdc), then their respective functions are realized.



Pin 1	First stage pass-through
Pin 2	First stage 10dB attenuation
Pin 4	Second stage straight through
Pin 5	Third stage pass-through
Pin 6	Not used
Pin 7	Not used
Pin 8	Third stage 20dB attenuation
Pin 9	Second stage 40dB attenuation

Pin 1	TTL high level turns to low level and the low level duration is greater than 20ms
Pin 2	TTL high level
Pin 3	Ground
Pin 4	TTL high level
Pin 5	TTL high level
Pin 8	TTL high level turns to low level and the low level duration is greater than 20ms
Pin 9	TTL high level turns to low level and the low level duration is greater than 20ms
Pin 10	+24Vdc

Cautions:

1. When powering the programmable step attenuator, the 3rd pin must be well grounded, otherwise it may cause permanent damage to the internal components of the programmable step attenuator.

2. When installing the attenuator, in order to make it have better anti-vibration performance, please place the attenuator horizontally (that is, the mounting screws of the attenuator are perpendicular to the horizontal plane).

3. The attenuator can only withstand a maximum power of 1W (CW), so do not input more than 1W (CW) into the attenuator port at this time.

4. The port of the programmable step attenuator is a precision female connector, which can only be connected to the matching connector. At the same time, when connecting, pay attention to whether the size of the port to be connected meets the national standard requirements to avoid damaging the connector and affecting the indicators and service life of the device. In addition, it is best to use a torque wrench when connecting and disconnecting the connector. Cover the connector with a dust cap when not in use to prevent excess objects from entering the attenuator and affecting the indicators.

5. The programmable step attenuator is a non-sealed attenuator, please store it in a dry and dust-free environment.