Suzhou Talent Microwave,Inc
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Reflective,D-band Waveguide PIN Switch

110-170Hz/SPDT/WR-6.5 Model: TMSPDT-110170-06

The TMSPDT-110170-06 is a D-band, SPDT reflective PIN switch. The switch exhibits 5.5 dB typical insertion loss and 23 dB nominal isolation across the frequency range of 110 to 170 GHz. The control voltage of the standard model is TTL. The RF input and output ports are WR-6.5 waveguides with UG-387/UM anti-cocking flanges.

Features:

- Frequency range: 110-170GHz
- Insertion Loss: 5.5dB, Typ
- High Isolation
- Switch Type: Reflective

Applications:

- THz Systems
- Test Equipment

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	110		170	GHz
Insertion Loss		5.5		dB
Isolation		23		dB
Switch Speed		100		ns
Input VSWR		3.6		:1
Output VSWR		2.5		:1
Output P1dB		25		dBm
DC Voltage		5		V DC
Control Voltage		0/+5		V
DC Supply Current		100		mA
Switch type	Reflective			

Absolute Maximum Ratings :

Parameter	Value	Units
Supply Bias Voltage	+5（+5%）	V
RF Input Power	30	dBm
ESD sensitivity (HBm)	Class 0, passed 150V	

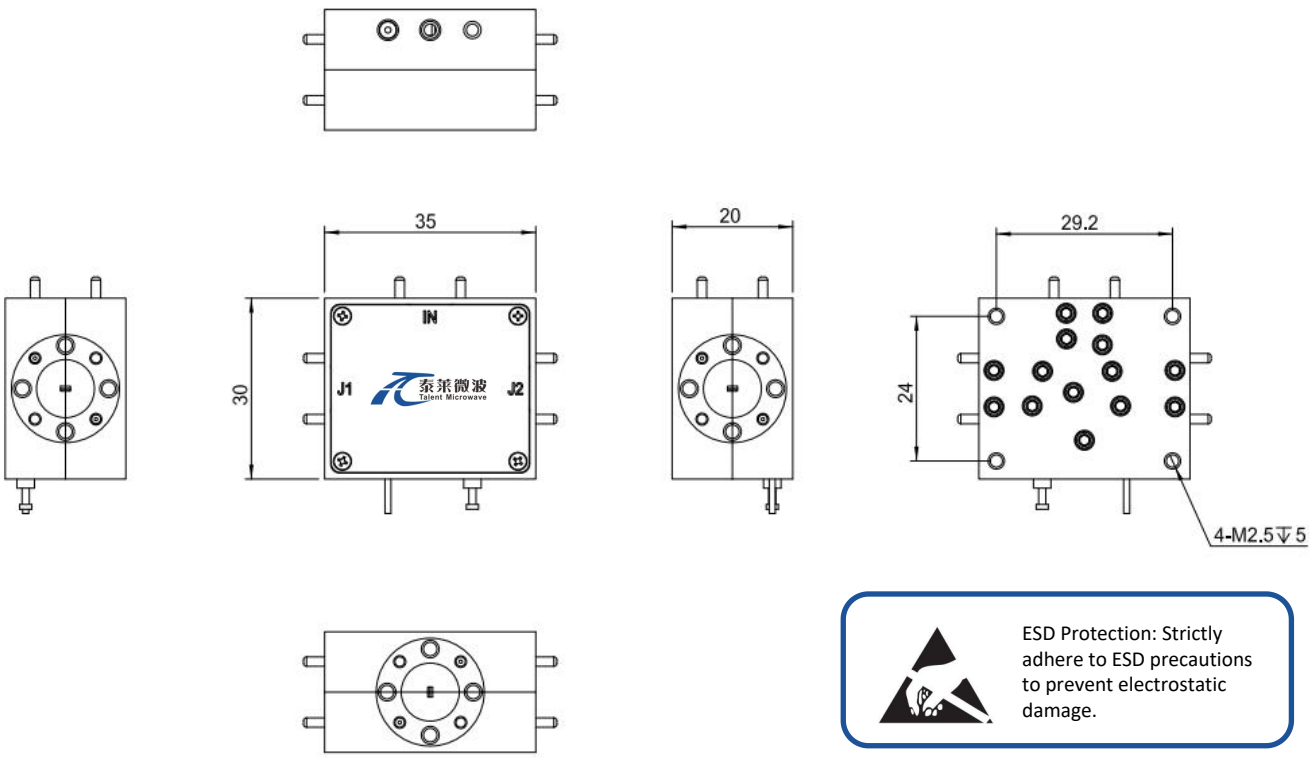
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Mechanical Specifications:

Parameter	Value	Units
Input Connector	WR-6.5/UG-387/U	
Output Connector	WR-6.5/UG-387/U	
Control Bias	Solder Pin	
Size	35*30*20	mm

Outline Drawing:

Unit:mm; Tolerance:±0.1mm



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

Truth Table	
TTL Control Input	Signal Path State
0	J0-J1
1	J0-J2

TTL Control Voltages &VDD	
Stage	Bias Condition
VDD	+5V (±5%)
Low（0）	0 to 0.8Vdc
High（1）	2.0 to +5.0Vdc

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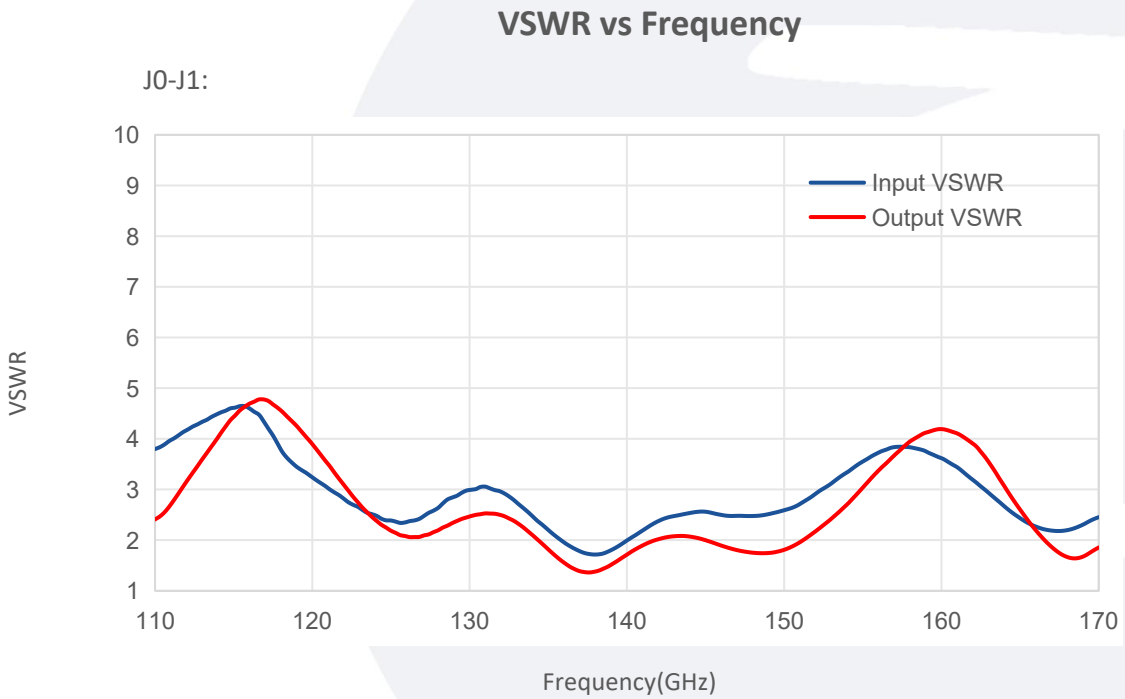
Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature	-10		+65	℃
Non-operating Temperature	-45		+85	℃
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

Base Number	Description	Revision
TMSPDT-110170-06	Reflective,D-band Waveguide Switch 110-170GHz, SPDT, WR-6.5/UG-387/U	Rev.1.0

Typical Performance Data:



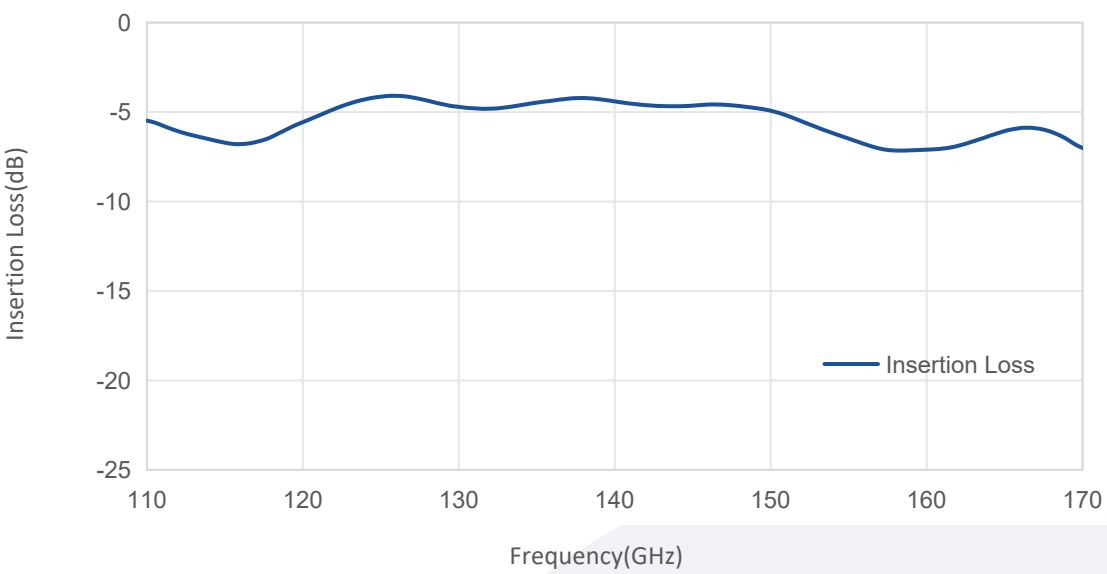
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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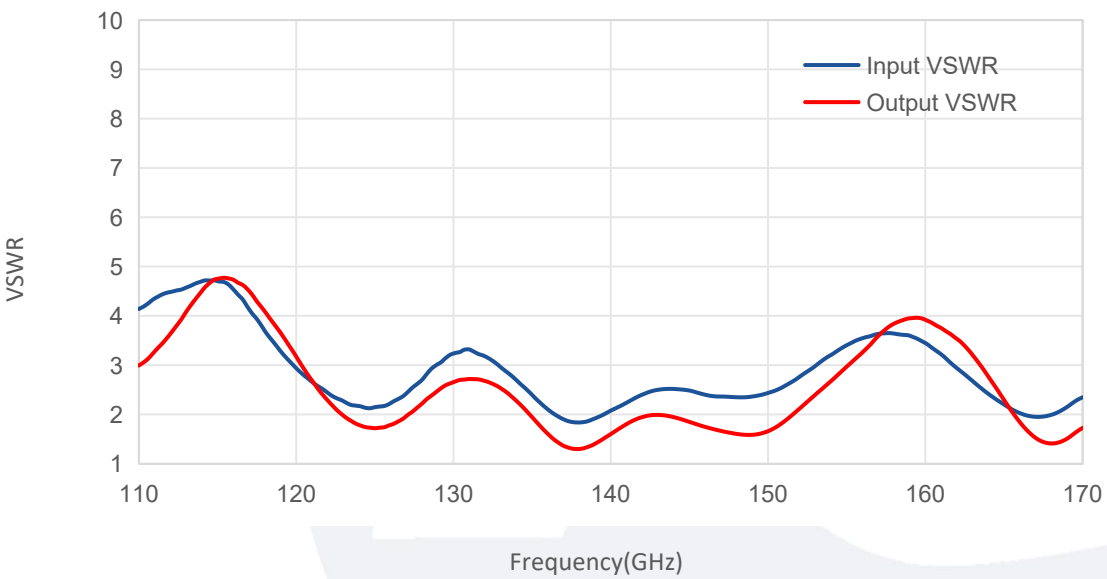
Insertion Loss vs Frequency

J0-J1:



VSWR vs Frequency

J0-J2:

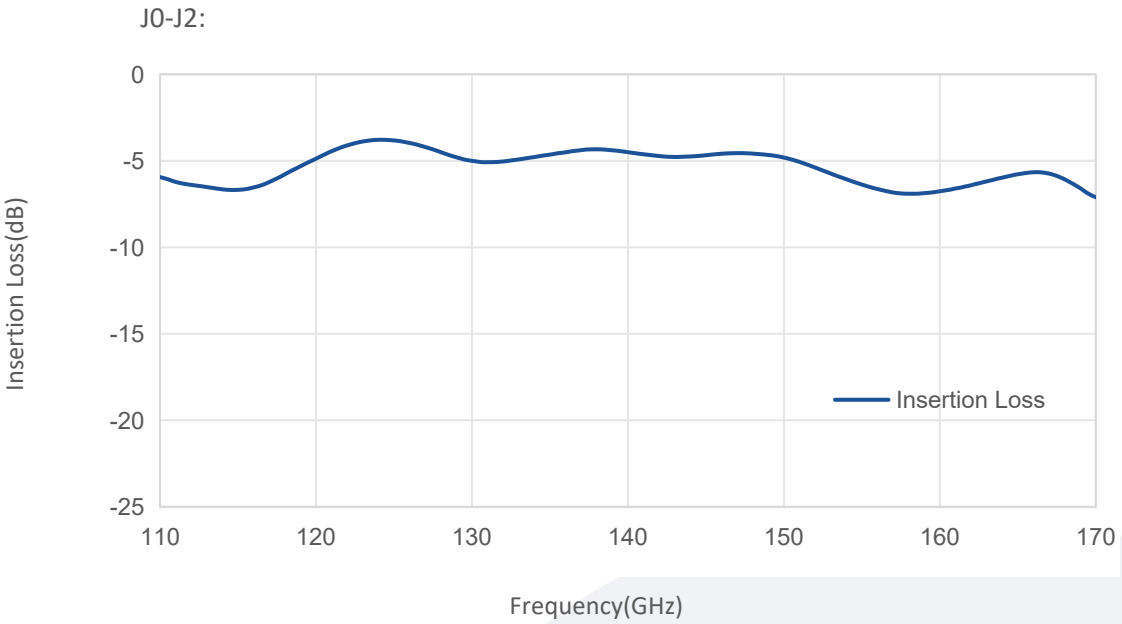


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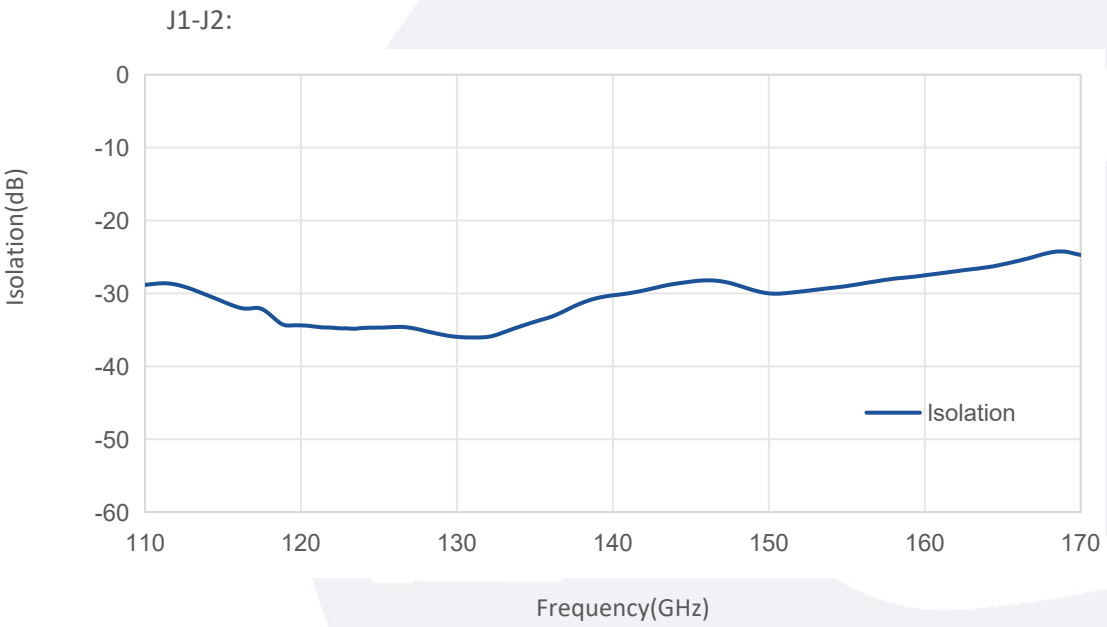
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Typical Performance Data:

Insertion Loss vs Frequency



Isolation vs Frequency



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