

6-Bit Digital Step Attenuator

0.5dB LSB/6 Bit/2-2.5GHz

Model: TLDA2G2.5G-31.5-6

The TLDA2G2.5G-31.5-6 is an broadband digitally controlled electrical attenuator operating from 2 to 2.5 GHz. The attenuator exhibits 2 dB typical insertion loss and offers 31.5 dB nominal attenuation control range in 0.5 dB steps under a 6-bit digital control. The control speed of the attenuator is typically 100 ns. The RF input and output ports are female SMA coax connectors, and a male J30J-9ZKP port is employed for providing the control signal and DC bias.

Features:

- Frequency range: 2-2.5GHz
- 6-Bit, 0.5 dB LSB, 31.5dB 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	2		2.5	GHz
插损 Insertion Loss		2		dB
衰减范围 Attenuation Range		31.5		dB
控制位数 Control Bit TTL		6		Bit
衰减步进 Attenuation Step		0.5		dB
切换速度 Switch Speed			100	ns
输入驻波 Input VSWR		1.8	2	:1
输出驻波 Output VSWR		1.8	2	:1
最大输入功率 Input Max Power		25		dBm
直流电压 DC Voltage		5		V DC
直流电流 DC Supply Current			80	mA
阻抗 Impedance	50			Ohms

机械特性 Mechanical Specifications:

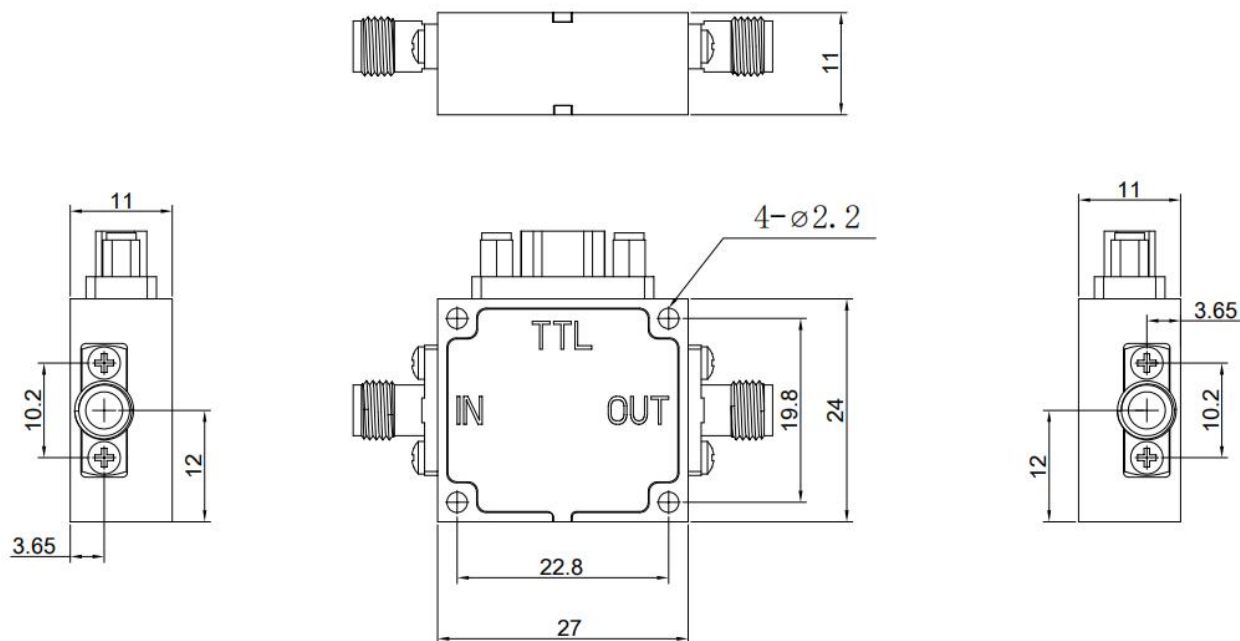
描述 Description	参数 Parameter	单位 Units
输入/输出接口 Input /Output Connector	SMA Female/SMA Female	
DC控制接口 DC control Connector	J30J-9ZKP	
尺寸 Size	27*24*11	mm

绝对最大值 Absolute Maximum Ratings :

描述 Description	参数 Parameter	单位 Units
供电偏置电压 Supply Bias Voltage	$\pm 5\%$	V
射频输入功率 RF Input Power	25	dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V	

外形图 Outline Drawing:

Unit:mm; Tolerance: $\pm 0.1\text{mm}$



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

真值表&加电接口 Truth Table&Supply Conector(J30J-9ZKP):

J30J-9ZKP				真值表 Truth Table						
引脚 Pin#	功能 Function	引脚Pin#	功能 Function	TTL Control Input						Signal Path State
C1	C2	C3	C4	C5	C6					
1	+5V	6	C4	0	0	0	0	0	0	Reference
2	GND	7	C5	1	0	0	0	0	0	0.5dB
3	C1	8	C6	0	1	0	0	0	0	1dB
4	C2	9	NC	0	0	1	0	0	0	2dB
5	C3			0	0	0	1	0	0	4dB
				0	0	0	0	1	0	8dB
				0	0	0	0	0	1	16dB
				1	1	1	1	1	1	31.5dB

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-40		+70	℃
存储温度 Non-operating Temperature	-55		+85	℃
相对湿度 Relative humidity		95		%
海拔 Altitude	10,000			feet
震动 Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLDA2G2.5G-31.5-6	6-Bit Digital Step Attenuator, 2-2.5GHz, SMA Female	Rev.1.0