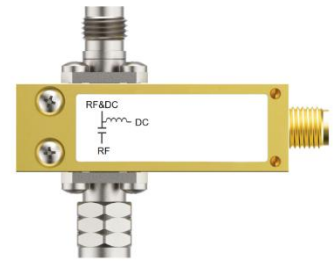


VMBT-50k/67G-16-1.6-1.85X

FEATURES

- ◆ Frequency Range, 50KHz~67GHz
- ◆ The Voltage, 16V DC Max.
- ◆ The Current, 0.4A DC Max.
- ◆ Excellent Group Delay for All-band
- ◆ Low VSWR, 1.3:1@50KHz~67GHz Typ.
- ◆ High RF performance, ultra-competitive price
- ◆ Low Insertion loss, 1.75dB@50KHz~67GHz Max.

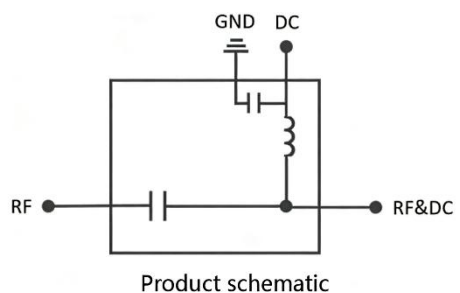


TYPICAL APPLICATIONS

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

PRODUCT OVERVIEW

The VMBT-50k/67G-16-1.6-1.85X is an ultra-broadband, low loss, and supports a maximum 32dBm RF power input coaxial bias-tee, which covers the frequency of 50KHz to 67GHz, to provide a bias power supply for amplifiers, photodiodes or optical modulators, mainly used in biasing amplifiers, laser diodes, active antennas and other applications.



CONFIGURATIONS

- ◆ VMBT-50k/67G-16-1.6-1.85A -RF port: 1.85mm male, RF&DC port: 1.85mm female
- ◆ VMBT-50k/67G-16-1.6-1.85B -RF port: 1.85mm female, RF&DC port: 1.85mm male
- ◆ VMBT-50k/67G-16-1.6-1.85C -RF port: 1.85mm male, RF&DC port: 1.85mm male
- ◆ VMBT-50k/67G-16-1.6-1.85D -RF port: 1.85mm female, RF&DC port: 1.85mm female

There are four configurations of this bias-tee. The model VMBT-50k/67G-16-1.6-1.85X 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.

ELECTRICAL SPECIFICATIONS

Item	Condition		Min.	Typ.	Max.	Units
Frequency Range	-		0.05	-	67000	MHz
Nominal Impedance	-		-	50	-	Ω
Insertion Loss	50KHz~67GHz		-	1.5	1.75	dB
VSWR	RF port	50KHz~67GHz	-	1.3	1.8	:1
	RF&DC port	50KHz~67GHz	-	1.3	1.8	:1
Isolation	RF to DC port	50KHz~67GHz	29	40	-	dB
	RF&DC to DC port	50KHz~67GHz	29	40	-	dB
Operating RF input Power	50KHz~67GHz		-	-	32	dBm
Group Delay Ripple	40MHz~67GHz		-	± 30	-	ps
DC Resistance	DC to RF&DC port		-	3.2	-	Ω
DC Voltage	-		-	-	16	V
DC Current	-		-	-	0.4	A

MECHANICAL SPECIFICATIONS

Item	Spec.	Units
RF/RF&DC Connectors	1.85-male/1.85-female	-
DC Connectors	SMA-female	-
Physical Dimensions(L*W*H)	40 * 12.9 * 13	mm
Net Weight	≈ 44.2	g
Material	Aluminum alloy & Copper	-
Surface Finish	Conductive oxidation & Gold-plated copper	-
Color	Aluminum color & Golden	-

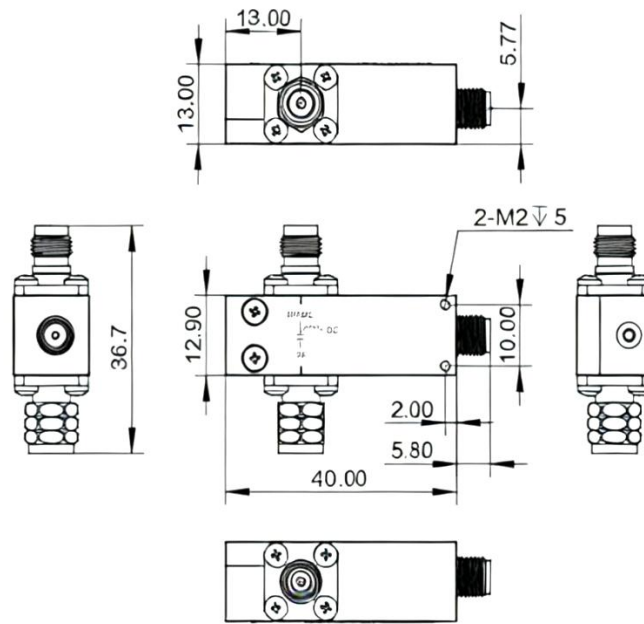
* **Note:** Package Dimensions & Gross Weight are subject to the actual delivery.

OTHER SPECIFICATIONS

Item	Spec.	Units
Operating Temperature	+20 ~ +60	$^{\circ}\text{C}$
Storage Temperature	-45 ~ +85	$^{\circ}\text{C}$

OUTLINE DRAWING

Unit: mm



INTERFACE INFORMATION

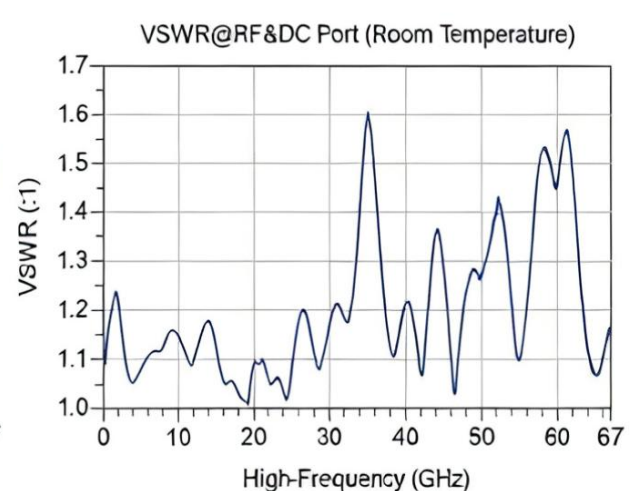
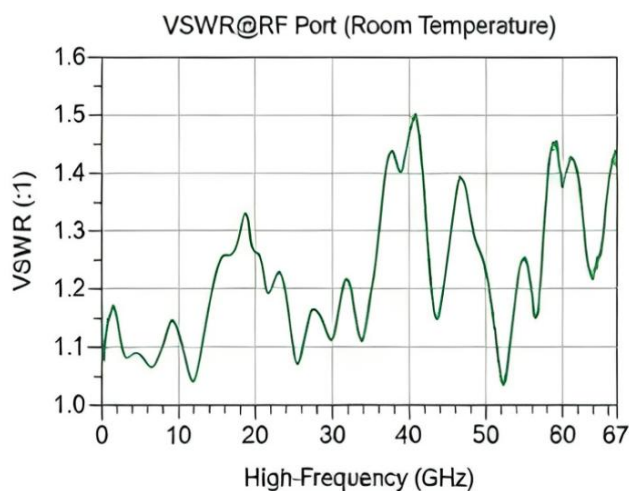
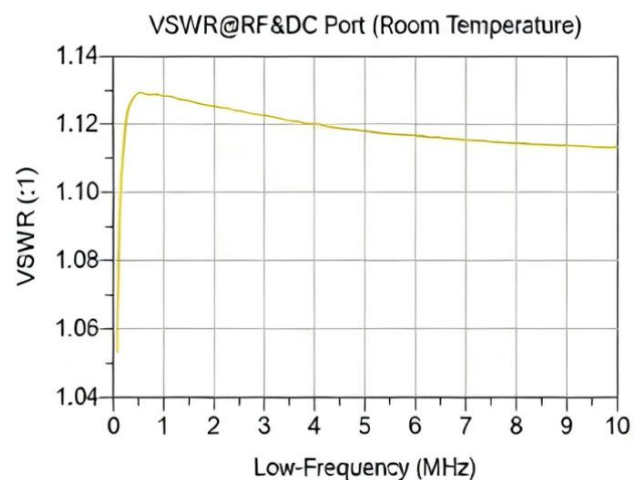
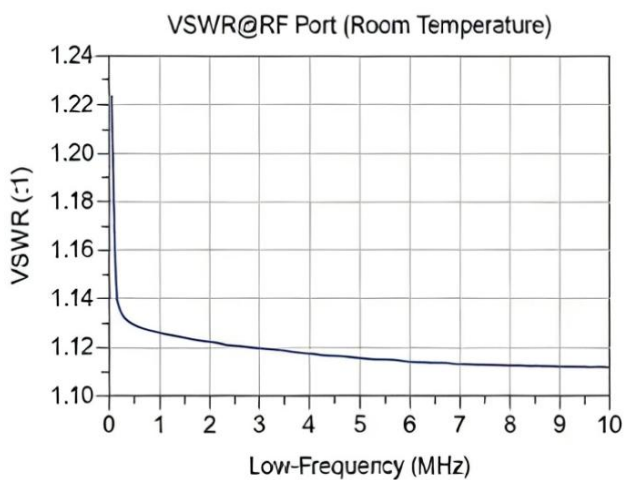
NO.	Function	Description
1	RF Port	RF signal input port
2	RF&DC Port	RF signal and DC output port
3	DC Port	DC input port

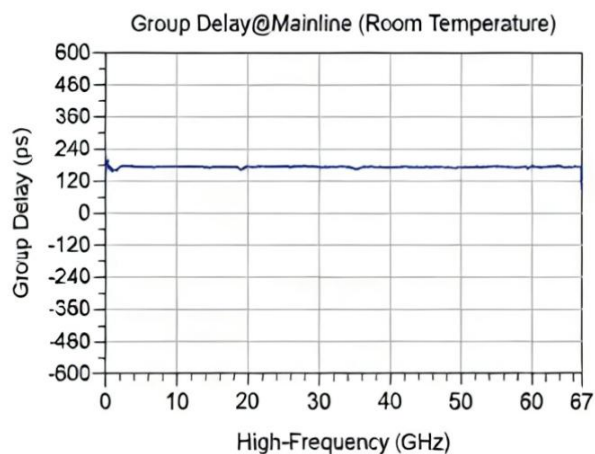
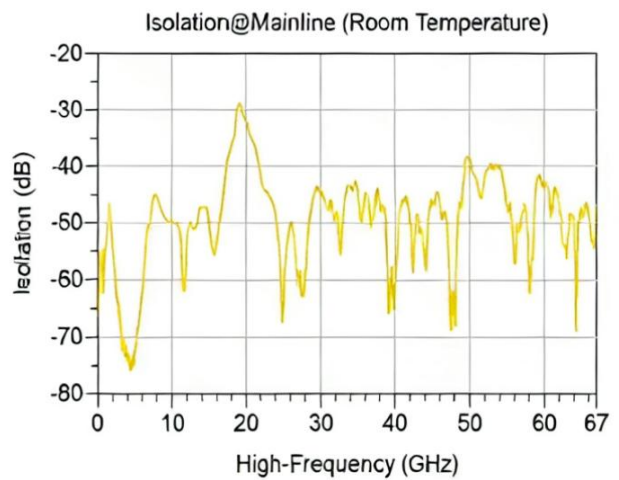
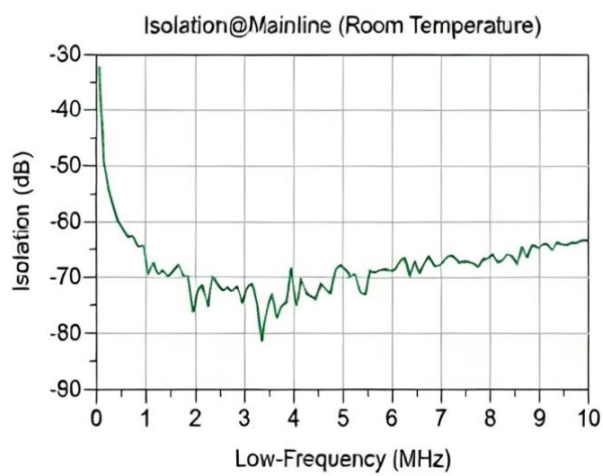
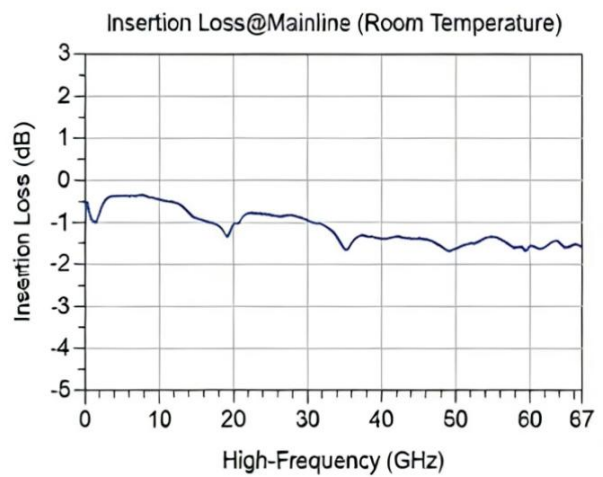
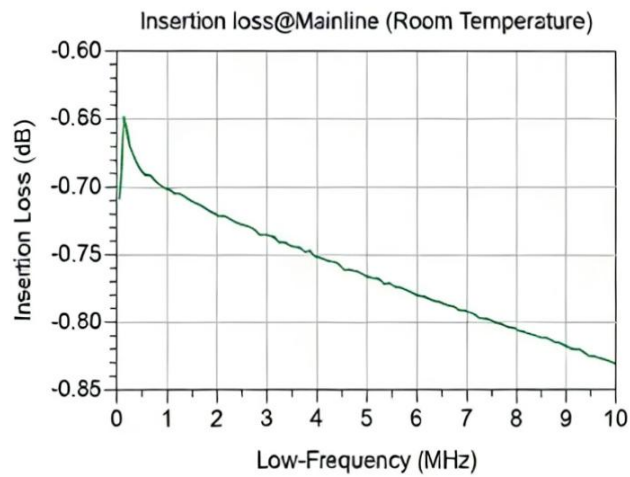
* Note: Please refer to the physical dimensions of the corresponding ports.

TYPICAL PERFORMANCE DATA

Freq. (MHz)	VSWR (:1)		Insertion Loss (dB) (with current)	Isolation (dB) (with current)	Group Delay (ps) (with current)
	RF	RF&DC	RF to RF&DC	RF to DC	RF to RF&DC
0.05	1.22	1.05	-0.71	32.15	-
0.1	1.15	1.08	-0.64	43.51	-
0.2	1.14	1.12	-0.66	51.57	-
0.5	1.13	1.13	-0.69	60.25	-
1	1.13	1.13	-0.70	63.77	-
2	1.12	1.13	-0.72	73.01	-
5	1.12	1.12	-0.77	73.45	-
10	1.15	1.15	-0.65	60.63	-
20	1.15	1.15	-0.66	61.14	128.00
50	1.16	1.16	-0.68	62.90	128.00
100	1.16	1.16	-0.70	66.14	164.42
200	1.10	1.10	-0.53	63.42	197.90
500	1.12	1.14	-0.77	55.65	164.95

1000	1.15	1.19	-0.95	54.60	167.55
2000	1.15	1.21	-0.71	54.31	174.27
5000	1.09	1.08	-0.36	72.73	175.34
10000	1.13	1.15	-0.46	49.71	174.63
15000	1.24	1.12	-0.91	49.72	172.06
20000	1.26	1.09	-1.06	32.04	175.78
25000	1.09	1.08	-0.83	63.65	174.76
30000	1.12	1.17	-0.96	44.49	174.23
35000	1.20	1.61	-1.64	44.29	164.16
40000	1.47	1.22	-1.39	61.41	171.92
45000	1.26	1.29	-1.39	46.49	173.55
50000	1.22	1.27	-1.63	38.95	173.00
55000	1.25	1.10	-1.35	46.78	176.28
60000	1.39	1.46	-1.55	43.80	178.00
65000	1.26	1.07	-1.59	47.35	174.56
67000	1.44	1.17	-1.58	47.33	175.26





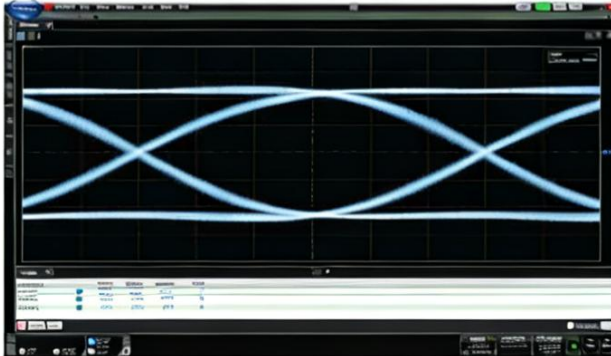
* Note: The above is typical data and is not used as an acceptance reference.

TYPICAL WAVEFORMS

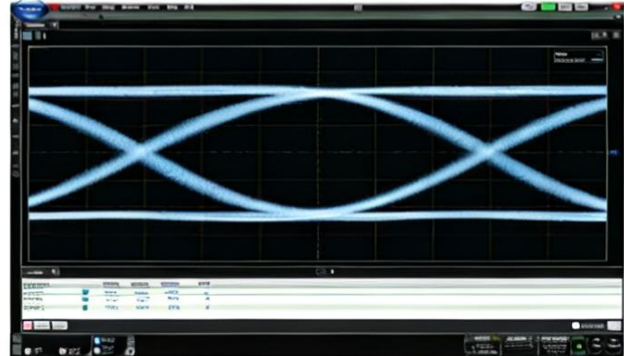
Test condition: Input Eye Amplitude ~400mV

Test equipment:

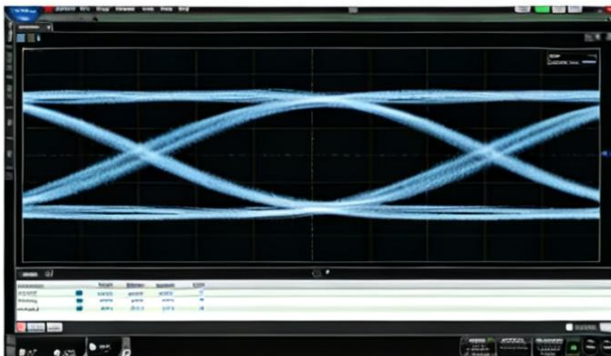
- ◆ Keysight M8196A
- ◆ Keysight 86100D with 80GHz Sampling Head (Keysight86116C-040)



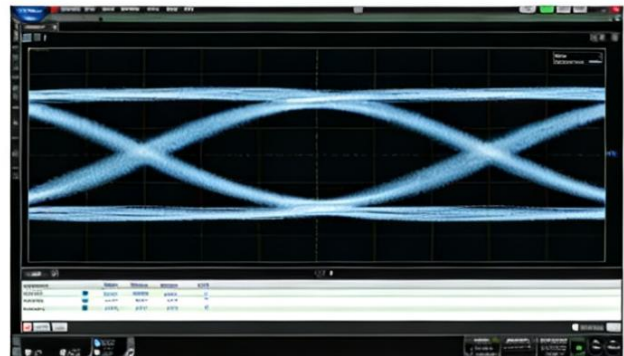
Input Signal @28Gbps



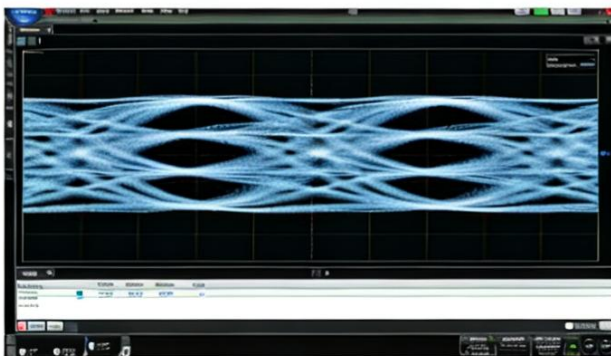
Output Signal @28Gbps



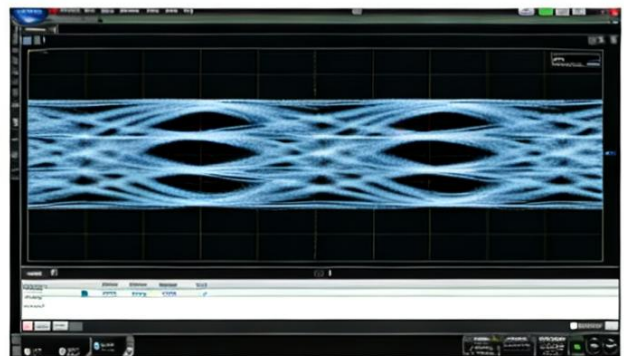
Input Signal @56Gbps



Output Signal @56Gbps



Input Signal @56Gbaud



Output Signal @56Gbaud