DC Pass, High Power

Power Splitter/Combiner ZC6PD-K1844+

6 Way-0° 50Ω 18000 to 40000 MHz

The Big Deal

- Super wideband, 18 to 40 GHz
- Low insertion loss, 1.6 dB typ.
- High Isolation, 25 dB typ.
- 20W power handling
- Low amplitude unbalance, 0.35 dB typ.

CASE STYLE: UU2414-1

Product Overview

Mini-Circuits' ZC6PD-K1844+ is a super wideband 6-way 0˚ splitter/combiner providing coverage from 18 to 40 GHz, supporting a wide range of applications including 5G, K-Band, Ka-Band, instrumentation and many more. This model provides 20W power handling as a splitter and very low insertion loss across the entire operating frequency range, minimizing power dissipation and delivering excellent signal power transmission from input to output. The ZC6PD-K1844+ comes housed in a case measuring 1.8 x 3.5 x 0.5".

Key Features

Feature	Advantages
Ultra-wideband, 18 to 40 GHz	Extremely wide frequency range supports many broadband applications in a single model. Ideal for use in widebnad instrumentation
Low insertion loss, 1.6 dB typ. at 22 GHz	The combination of 20W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
High isolation, 25 dB typ. at 22 GHz	Minimizes interference between ports.
High power handling: • 20W as a splitter at 25°C • 0.67W as a combiner	The ZC6PD-K1844+ is suitable for systems with a wide range of power requirements.
Low amplitude unbalance, 0.35 dB at 22 GHz	Produces nearly equal output signals, ideal for parallel path and multichannel systems.
DC Passing, 464mA	Supports applications where DC power is needed to pass through the RF line.

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Generic photo used for illustration purposes only

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Connectors	Model
2.92mm-Fem	ZC6PD-K1844+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	20W* max.
Internal Dissipation	0.67W max.
DC Current	464 mA

Permanent damage may occur if any of these limits are exceeded.
* Derate linearly to 10.8W at 100°C

Coaxial Connections

SUM PORT	S
PORT 1,2,3,4,5,6	1,2,3,4,5,6

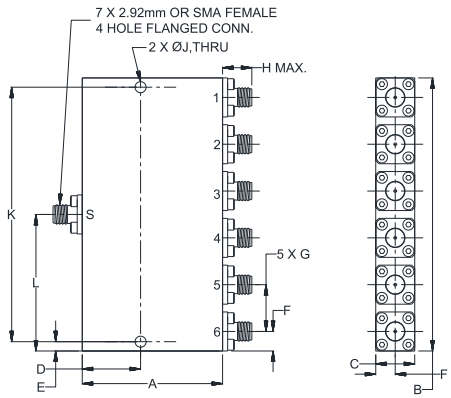
Features

- wideband, 18000 to 40000 MHz
- low insertion loss, 1.6 dB typ.
- low amplitude unbalance, 0.35 dB typ.
- low phase unbalance, 6.2 deg. typ.
- high isolation, 25 dB typ.
- DC Pass from sum port to all output ports

Applications

- 5G
- fixed satellite
- space research
- mobile

Outline Drawing

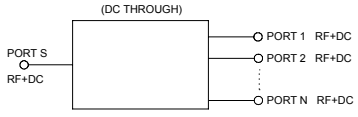


Outline Dimensions (inch / mm)

A	B	C	D	E	F
1.80	3.50	.50	.748	.119	.25
45.72	88.90	12.70	19.00	3.02	6.35

G	H	J	K	L	wt
.60	.43	.142	3.262	1.75	grams
15.24	11	3.6	82.85	44.45	180

Electrical Schematic



Electrical Specifications at 25°C

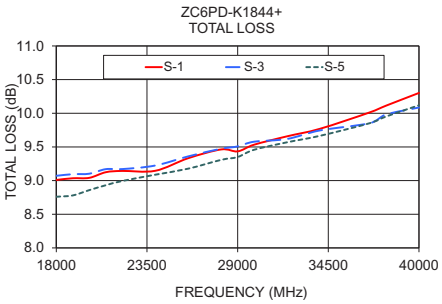
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		18000		40000	MHz
Insertion Loss (above theoretical 7.8 dB)	18000-26500	—	1.6	1.9	dB
	26500-40000	—	2.2	2.9	
Isolation	18000-26500	17	25	—	dB
	26500-40000	17	28	—	
Phase Unbalance (±)[1]	18000-26500		6.2	10	Degree
	26500-40000		7.3	12	
Amplitude Unbalance (±)[1]	18000-26500		0.35	0.5	dB
	26500-40000		0.29	0.8	
VSWR (Port S)	18000-26500		1.20	1.7	:1
	26500-40000		1.24	1.6	
VSWR Output (Port 1-6)	18000-26500		1.27	1.6	:1
	26500-40000		1.24	1.7	

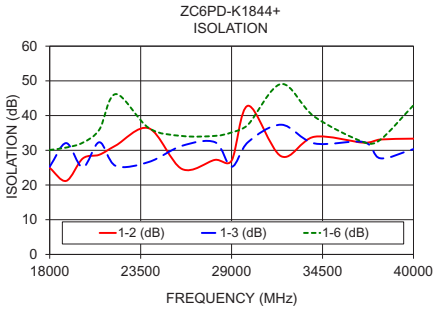
1. With reference to average.

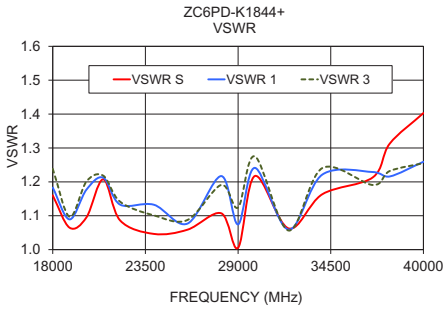
Typical Performance Data

Frequency (MHz)	Total Loss[1] (dB)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 3
	S-1	S-3	S-5		1-2	1-3	1-6				
18000	9.01	9.07	8.76	0.35	24.93	25.27	30.10	4.83	1.16	1.18	1.24
19000	9.03	9.10	8.78	0.35	21.19	32.07	30.79	5.08	1.06	1.09	1.10
20000	9.04	9.10	8.86	0.39	27.64	25.10	32.20	5.11	1.10	1.18	1.20
21000	9.12	9.17	8.93	0.35	28.72	32.32	35.94	5.41	1.21	1.21	1.22
22000	9.14	9.17	8.99	0.39	31.39	25.49	46.19	5.47	1.09	1.13	1.14
24000	9.15	9.22	9.09	0.30	36.32	26.65	36.40	5.86	1.05	1.13	1.10
26000	9.33	9.36	9.18	0.31	24.61	31.29	34.13	5.94	1.06	1.08	1.09
28000	9.46	9.47	9.31	0.25	27.25	32.32	34.15	5.93	1.11	1.22	1.19
29000	9.43	9.51	9.35	0.28	27.03	25.26	35.16	5.83	1.01	1.07	1.12
30000	9.53	9.58	9.46	0.28	42.84	32.38	37.43	5.94	1.22	1.24	1.28
32000	9.66	9.62	9.57	0.25	28.28	37.37	49.10	5.00	1.06	1.06	1.06
34000	9.77	9.75	9.67	0.23	33.89	31.99	39.71	5.79	1.16	1.22	1.24
37000	10.01	9.85	9.85	0.21	32.19	32.37	32.32	5.83	1.21	1.23	1.19
38000	10.11	9.98	9.95	0.21	33.11	27.69	33.06	6.21	1.31	1.22	1.23
40000	10.30	10.09	10.12	0.27	33.35	30.34	42.98	7.10	1.40	1.26	1.25

1. Total Loss = Insertion Loss + 7.8dB splitter loss.







Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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