

DC Pass, High Power

Power Splitter/Combiner

ZC4PD-E40653+

4 Way-0° 50Ω 40000 to 65000 MHz

The Big Deal

- Super wideband, 40 to 65 GHz
- Low insertion loss, 2.1 dB typ.
- High Isolation, 28 dB typ.
- 12W power handling
- Low amplitude unbalance, 0.2 dB typ.



CASE STYLE: UU2413-5

Product Overview

Mini-Circuits' ZC4PD-E40653+ is a super wideband 4-way 0° splitter/combiner providing coverage from 40 to 65 GHz, supporting a wide range of applications including 5G, V-Band, instrumentation and many more. This model provides 12W 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 ZC4PD-E40653+ comes housed in a case measuring 2.04 x 1 x 0.5”.

Key Features

Feature	Advantages
Ultra-wideband, 40 to 65 GHz	Extremely wide frequency range supports many broadband applications in a single model.
Low insertion loss, 2.1 dB typ. at 50 GHz	The combination of 12W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
High isolation, 28 dB typ. at 50 GHz	Minimizes interference between ports.
High power handling: <ul style="list-style-type: none">• 12W as a splitter at 25°C• 1.2W as a combiner	The ZC4PD-E40653+ is suitable for systems with a wide range of power requirements.
Low amplitude unbalance, 0.2 dB typ.	Produces nearly equal output signals, ideal for parallel path and multichannel systems.
DC Passing, 334 mA	Supports applications where DC power is needed through the RF line.

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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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ZC4PD-E40653+

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Maximum Ratings

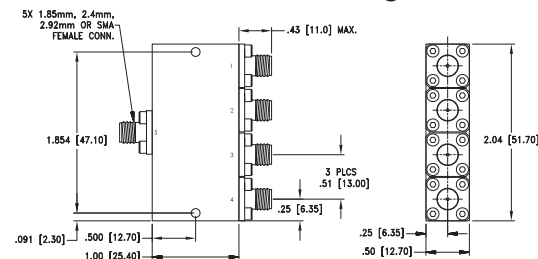
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	12W* max.
Internal Dissipation	1.2W max.
DC Pass	334mA

Permanent damage may occur if any of these limits are exceeded.
*Derates linearly to 5.6W at 100°C

Coaxial Connections

Sum Port	S
Port 1	1
Port 2	2
Port 3	3
Port 4	4

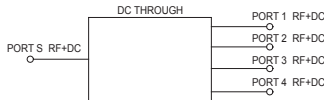
Outline Drawing



Weight: 70 grams;

Dimensions are in inches (mm). Tolerances: 2 PL±.03; 3 PL ±.015

Electrical Schematic



Features

- Super wideband, 40000 to 65000 MHz
- Low insertion loss, 2.1 dB typ.
- Low amplitude unbalance, 0.2 dB typ.
- Excellent VSWR, 1.16:1 typ.
- High isolation, 28 dB typ.

Applications

- 5G
- Fixed satellite
- Space research
- Mobile



Generic photo used for illustration purposes only

CASE STYLE: UU2413-5

Connectors Model
1.85mm Fem ZC4PD-E40653+

+RoHS Compliant

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

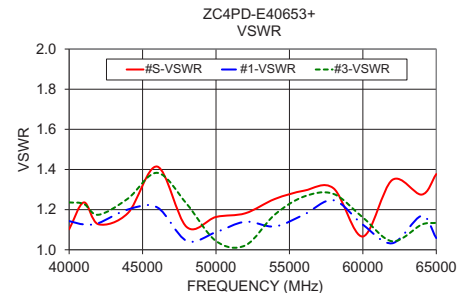
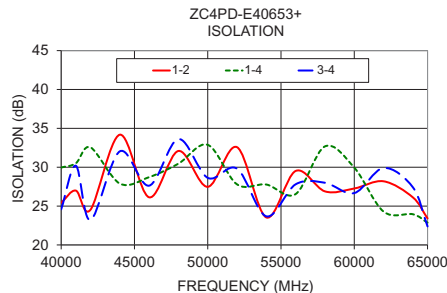
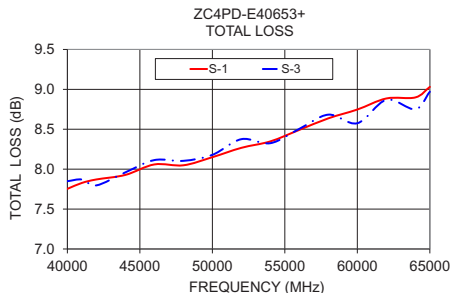
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		40000		65000	MHz
Insertion Loss Above 6.0 dB	40000-50000		2.1	2.8	dB
	50000-65000		2.6	3.7	
Isolation	40000-50000	16	28		dB
	50000-65000	16	26		
Phase Unbalance	40000-50000		±3.5	±8	Degree
	50000-65000		±4.9	±10	
Amplitude Unbalance	40000-50000		±0.20	±0.6	dB
	50000-65000		±0.26	±0.8	
VSWR (Port S)	40000-50000		1.15	1.8	:1
	50000-65000		1.16	1.9	
VSWR (Port 1-4)	40000-50000		1.16	1.8	:1
	50000-65000		1.13	1.9	

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)				Amp. Unb. (dB)	Isolation (dB)			Phase Unb. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	1-4	3-4						
40000	7.75	7.82	7.85	7.84	0.10	25.43	29.96	24.58	1.28	1.10	1.14	1.09	1.24	1.32
41000	7.83	7.90	7.87	8.00	0.18	26.99	30.51	30.19	1.24	1.24	1.13	1.07	1.23	1.31
42000	7.87	7.95	7.80	7.97	0.17	24.53	32.55	23.19	1.23	1.13	1.13	1.16	1.17	1.21
44000	7.93	8.03	7.96	8.01	0.10	34.18	27.89	32.04	0.83	1.18	1.20	1.27	1.25	1.22
46000	8.06	8.17	8.11	8.14	0.12	26.13	28.72	27.63	1.45	1.41	1.21	1.28	1.38	1.32
48000	8.05	8.16	8.10	8.15	0.11	32.09	30.46	33.62	1.48	1.11	1.04	1.05	1.23	1.23
50000	8.15	8.24	8.18	8.26	0.11	27.48	32.88	28.63	1.88	1.16	1.09	1.10	1.04	1.12
52000	8.27	8.35	8.38	8.36	0.11	32.58	27.79	29.81	2.19	1.18	1.14	1.13	1.02	1.12
54000	8.35	8.43	8.33	8.44	0.11	23.53	27.77	23.68	2.37	1.25	1.12	1.11	1.18	1.05
56000	8.49	8.61	8.51	8.59	0.12	29.52	26.55	27.80	2.00	1.29	1.18	1.14	1.27	1.23
58000	8.64	8.75	8.68	8.76	0.13	26.89	32.68	28.00	2.58	1.31	1.25	1.19	1.28	1.30
60000	8.75	8.83	8.58	8.89	0.32	27.26	29.94	26.67	2.95	1.07	1.12	1.11	1.16	1.23
62000	8.89	9.02	8.87	8.90	0.15	28.19	24.29	29.91	1.78	1.35	1.03	1.09	1.04	1.11
64000	8.90	9.04	8.75	9.15	0.40	26.12	23.95	27.41	3.70	1.27	1.17	1.26	1.13	1.03
65000	9.03	9.19	8.97	9.10	0.22	23.41	22.87	22.38	3.08	1.38	1.06	1.15	1.13	1.13

1. Total Loss = Insertion Loss + 6dB splitter theoretical loss.



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