

Surface Mount  **Power Splitter/Combiner**

TCP-2-152-75X+

2 Way-0° 75Ω 5 to 1500 MHz

The Big Deal

- Wideband, 5 to 1500 MHz
- Good power handling, 0.5W as a splitter
- Low insertion loss, 0.8 dB
- Low unbalance, 0.25 dB, 1.5°



CASE STYLE: DB1627

Product Overview

Mini-Circuits' TCP-2-152-75X+ is a 75Ω 2-way 0° surface-mount power splitter/combiner covering the 5 to 1500 MHz frequency range, supporting bandwidth requirements for DOCSIS® 3.1 systems and equipment, as well as other broadband applications. This model can handle up to 0.5W RF input power as a splitter, and provides low insertion loss and low phase and amplitude unbalance. It features core and wire construction mounted on a 6-lead plastic base (0.16 x 0.15 x 0.16") with Mini-Circuits' TopHat® feature to improve speed and accuracy of pick and place assembly. This design requires external capacitors and resistors for impedance matching and cycling isolation between the output signals (refer to electrical schematic).

Key Features

Feature	Advantages
Wideband, 5 to 1500 MHz	Suitable for many broadband applications including DOCSIS® 3.1 systems and equipment, VHF/UHF, CATV, cellular, and more.
Low insertion loss, 0.8 dB	The combination of 0.5W power handling and low insertion loss makes it a suitable candidate for distributing signals while maintaining signal power.
Good isolation, 28 dB	Minimizes interference between ports
Low unbalance: • 0.25 dB amplitude unbalance • 1.5° phase unbalance	This model produces nearly equal output signals, making it ideal for use in parallel path /multichannel systems.
Top Hat® Feature	Improves speed and accuracy of pick and place assembly and provides clear device marking for visual inspection.

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Features

- low insertion, 0.8 dB typ.
- excellent amplitude unbalance, 0.2 dB typ.
- very good phase unbalance, 1.5 deg. typ.
- external resistor & capacitor required
- aqueous washable
- leads for excellent solderability
- low cost

Applications

- DOCSIS® 3.1 Systems
- VHF/UHF
- CATV
- cellular



Generic photo used for illustration purposes only

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+RoHS Compliant

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

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500
13"	1000, 2000

Available Tape and Reel at no extra cost

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1500	MHz
Insertion Loss Above 3.0 dB	5-50	—	0.4	0.7	dB
	50-1000	—	0.7	1.2	
	1000-1250	—	1.0	1.7	
	1250-1500	—	1.3	2.7	
Isolation	5-50	22	28	—	dB
	50-1000	21	28	—	
	1000-1250	20	28	—	
	1250-1500	16	25	—	
Phase Unbalance	5-50	—	1.0	3.0	Degree
	50-1000	—	1.5	4.0	
	1000-1250	—	2.0	5.0	
	1250-1500	—	2.0	6.0	
Amplitude Unbalance	5-50	—	0.2	0.4	dB
	50-1000	—	0.2	0.5	
	1000-1250	—	0.25	0.6	
	1250-1500	—	0.30	0.7	
VSWR (Port S)	5-50	—	1.08	1.15	:1
	50-1000	—	1.15	1.3	
	1000-1250	—	1.25	1.45	
	1250-1500	—	1.3	1.75	
VSWR (Port 1-2)	5-50	—	1.3	1.5	:1
	50-1000	—	1.2	1.35	
	1000-1250	—	1.3	1.6	
	1250-1500	—	1.55	1.95	

Maximum Ratings

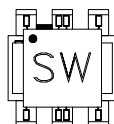
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

Function	Pin Number	Function	Pin Number
Sum port	6	Ext. capacitor 1.0pF	2 to Gnd
Port 1	3	Ext. capacitor 1.2pF	5 to Gnd
Port 2	4	Ext. Components (Inductor 2.7 nH, Resistor 150Ω, Inductor 2.7nH in Series)	3,4
Ground	1		

Product Marking



Electrical Schematic

