

Surface Mount Directional Coupler

TCD-17-282X+

50Ω

5 to 2850 MHz

The Big Deal

- Wideband, 5 to 2850 MHz
- Low mainline loss, 0.7–1.9 dB
- Flat coupling, ±1.2 dB
- RF power handling up to 1W



CASE STYLE: DB1627

Product Overview

Mini-Circuits' TCD-17-282X+ surface mount directional coupler provides 17 dB nominal coupling with excellent flatness from 5 to 2850 MHz, supporting a wide variety of applications including VHF/UHF, CATV, cellular, SatCom and more. This model provides low mainline loss, high directivity and excellent return loss. The coupler is built with core and wire construction mounted on a 6-lead plastic base (0.16 x 0.15 x 0.16") and includes Mini-Circuits' TopHat® feature for faster, more accurate pick-and-place assembly.

Key Features

Feature	Advantages
Low mainline loss <ul style="list-style-type: none">• 0.7 dB to 950 MHz• 1.9 dB to 2850 MHz	Provides good through-path signal power transmission.
High directivity, 10 – 25 dB	High directivity allows accurate signal sampling through the coupled port with minimal measurement error.
Excellent return loss, 14 – 22 dB (input/output/coupling)	Provides excellent matching for 50Ω systems and minimal signal reflection.
Good power handling <ul style="list-style-type: none">• 1W, 100 to 2850 MHz• 0.5W, 5 to 100 MHz	Usable in systems with a variety of high-power requirements.
Top Hat® feature	Improves speed and accuracy of pick and place assembly and provides clear device marking for visual inspection.

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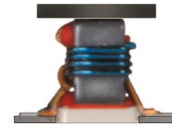
TCD-17-282X+

Features

- wideband, 5 to 2850 MHz
- low mainline loss, 1.9 dB typ. up to 2850 MHz
- aqueous washable
- leads for excellent solderability
- protected by US Patent 6,140,887

Applications

- VHF/UHF
- ISM
- cellular
- GPS
- PCS
- PCN
- UMTS



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+RoHS Compliant

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

Available Tape and Reel at no extra cost	
Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500
13"	1000, 2000

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		2850	MHz
Mainline Loss ¹ (above theoretical 0.1 dB)	5	—	0.7	1.3	dB
	950	—	0.7	1.1	
	2850	—	1.9	2.4	
Nominal Coupling	5-2850	—	17 ±1	—	dB
Coupling Flatness(±)	5-950	—	0.3	0.6	dB
	950-2850	—	1.2	1.5	
Directivity	5-100	18	25	—	dB
	100-950	13	20	—	
	950-2850	6	10	—	
Return Loss (Input)	5	—	20	—	dB
	950	—	17	—	
	2850	—	14	—	
Return Loss (Output)	5	—	22	—	dB
	950	—	18	—	
	2850	—	14	—	
Return Loss (Coupling)	5	—	20	—	dB
	950	—	16	—	
	2850	—	15	—	
Input Power	5-100	—	—	0.5	W
	100-2850	—	—	1.0	

1. Mainline loss includes theoretical power loss 0.1dB at coupled port.

Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 85°C*
Storage Temperature	-55°C to 100°C

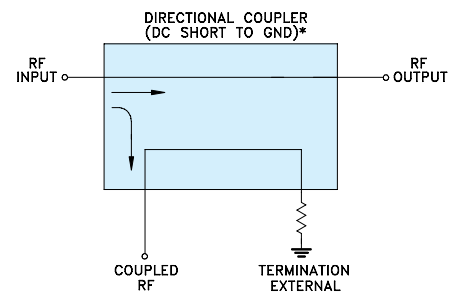
Permanent damage may occur if any of these limits are exceeded.

* Case temperature is defined as temperature on ground leads.

Pin Connections

Function	Pin Number
INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
50Ω TERM EXTERNAL	6
NOT USED	5

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) AND EXTERNAL TERMINATION.



