



Mini-Circuits

SURFACE MOUNT

Power Splitter/Combiner

AMT-52+

50 Ω (2 Way-0°/ 180°) 50 to 500 MHz

KEY FEATURES

- Low Insertion Loss, 0.9 dB Typ.
- Low Amplitude Unbalance, 0.5 dB Typ.
- Good Power Handling
- High Isolation, 40 dB Typ.

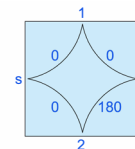


Generic photo used for illustration purposes only

APPLICATIONS

- Communication System
- IF Receiver
- FM Broadcast

FUNCTIONAL DIAGRAM



- S-J ports, isolation 40 typical
- Amplitude unbalance defined by input S or J ports to output 1 and 2

PRODUCT OVERVIEW

Mini-Circuits' AMT-52+ is a wideband 50 Ω 2 Way 0°/180° surface mount magic T splitter/combiner. It provides very low amplitude and phase unbalance with good isolation over the full frequency range. It handles up to 0.5W of input power and comes in a small case with excellent thermal performance (-40°C to 85°C operating).

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		50	—	500	MHz
Insertion Loss (above 3 dB)	S-1, S-2	50 - 500	—	0.9	dB
	J-1, J-2	50 - 500	—	1.6	
Isolation	J-S	50 - 250	30	40	dB
		250 - 500	20	30	
	1-2	50 - 250	23	34	
		250 - 500	18	28	
Phase Unbalance ($\pm$)	50 - 100	—	1	3	Degree
	100 - 500	—	2	5	
Amplitude Unbalance ($\pm$)	50 - 500	—	0.5	1.2	dB
Return Loss (Port S) (Port J)	50 - 500	—	17.7	—	dB
Return Loss (Port 1-2)	50 - 500	—	16.5	—	dB

ABSOLUTE MAXIMUM RATINGS¹

Operating Case Temperature		-40°C to +85°C
Storage Temperature		-55°C to +100°C
Input Power	as splitter	0.5 W
	as combiner per port	0.125 W

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





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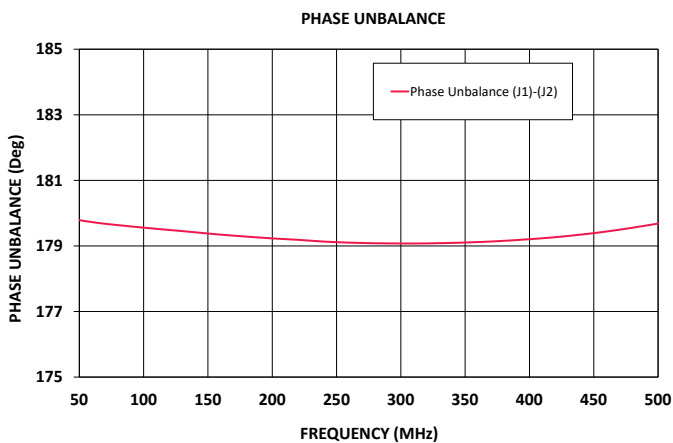
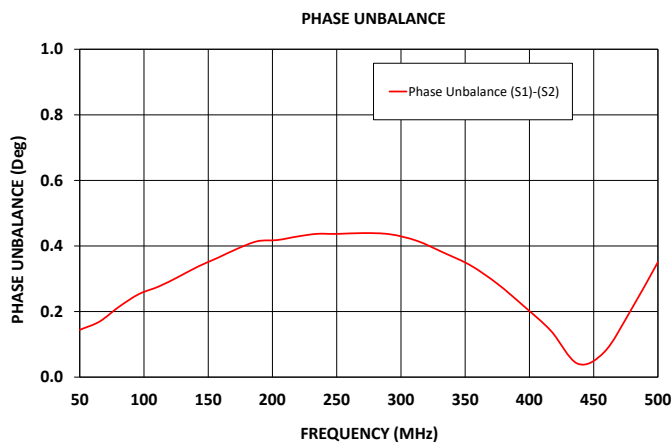
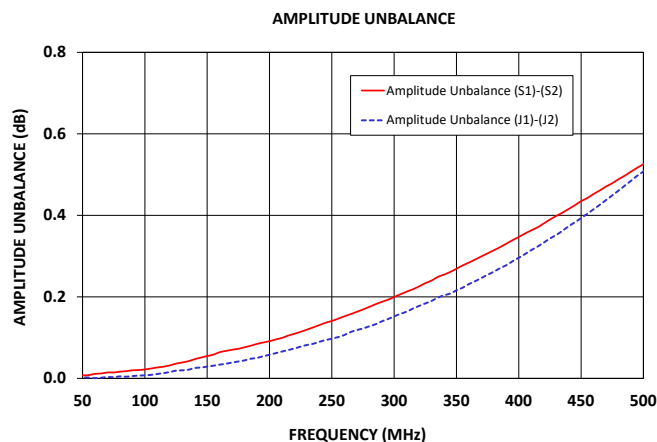
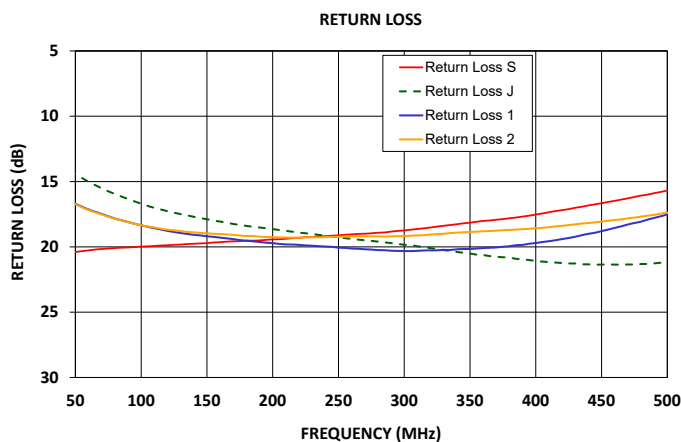
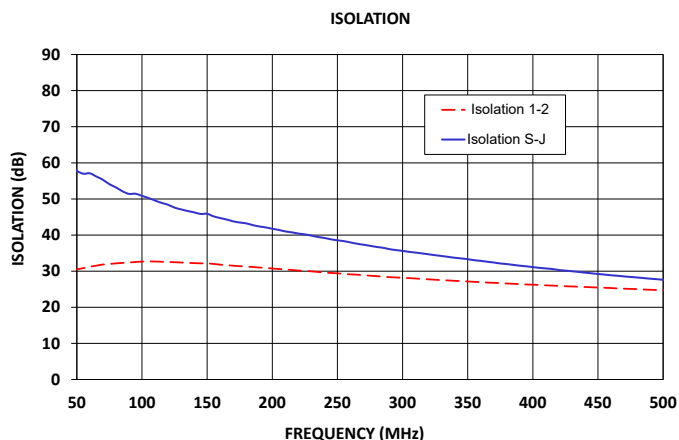
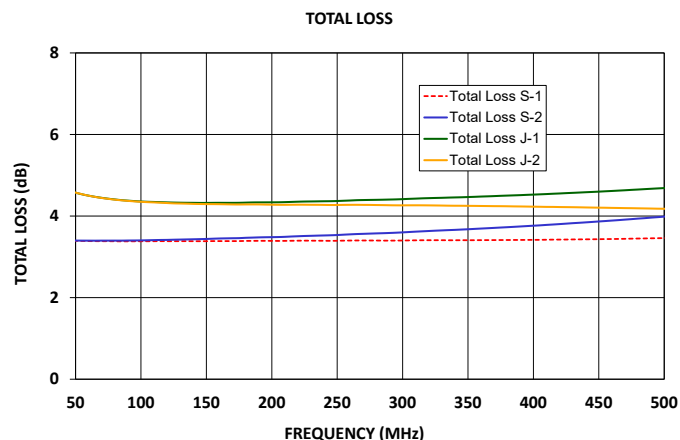
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TYPICAL PERFORMANCE GRAPHS





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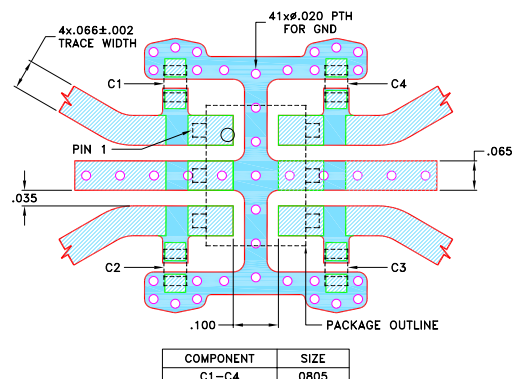
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- ### Figure 1. AMT-52+ Functional Diagram

Function	Pad Number	Description
Sum Port	3	Connects to Sum Port
Port 1	6	Connects to 1 Port
Port 2	4	Connects to 2 Port
Port J	1	Connects to J Port
Ground	2,5	Connects to Ground
Ext. Capacitor C1 - 2.7 pF	—	Pad 1 to Ground
Ext. Capacitor C2 - 1.8 pF	—	Pad 3 to Ground
Ext. Capacitor C3 - 1.2 pF	—	Pad 4 to Ground
Ext. Capacitor C4 - 2.2 pF	—	Pad 6 to Ground

**SUGGESTED MOUNTING CONFIGURATION
FOR CD636 CASE STYLE**



 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

 DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout PL-854

PCB LAND PATTERN

.310

.055

.220

.100 TYP

.030 TYP

.162 MAX

.272 ± .01

.026 REF

.100 TYP

.065 TYP

.100 TYP

.265 REF

.300

SUGGESTED LAYOUT,
TOLERANCE TO BE WITHIN ±.002

Dimensions are in inches (mm). Tolerances: 2Pl ± .01 [0.25]; 3Pl ± .005 [.127]

*Marking may contain other features or characters for internal lot control.



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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data Graphs S-Parameter (S4P Files) Data Set (.zip file) De-embedded to device pads
Case Style	CD636 Lead Finish: Tin over Nickel Plate
RoHS Status	Compliant
Tape and Reel	F34
Suggested Layout for PCB Design	PL-854
Evaluation Board	TB-AMT-52+ Gerber File
Environmental Rating	ENV02T1

NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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/terms/viewterm.html

