25 dB DC Pass

High Power Signal Tap ZARC-25-551-S+

50Ω 100W 100 to 550 MHz

CASE STYLE: AW1564

The Big Deal

- High Power Handling, 100 W
- Excellent Mainline Loss, 0.15 dB typ.
- Very good VSWR, 1.2:1 typ.

Product Overview

The ZARC-25-551-S+ high power signal tap is ideal for monitoring up to 100W signals in VHF and UHF applications. Overall dimensions are 3.00” x 2.81” x 2.03” high. The rugged aluminum alloy case features stainless steel SMA connectors and an anodized aluminum heat sink, enclosing a welded module for reliable, long-term performance.

Feature	Advantages
0.15 dB typ. mainline loss	Extremely low internal power dissipation, reducing mainline loss and internal temperature for high reliability
VSWR 1.2:1 typ	Very good 50Ω impedance matching minimizes interference with signal integrity
±0.5 dB coupling flatness	Provides highly accurate sampling of signal power
DC Pass up to 3A	Suitable for applications using remote antenna control or other remote motorized requirements
100 W input maximum	High power capacity, combined with excellent insertion loss and VSWR, supports operation in transmitters and base stations for amateur radio, PMR, TV, maritime, aviation, and military applications

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

25 dB DC Pass

High Power Signal Tap

ZARC-25-551-S+

50Ω 100W 100 to 550 MHz

Generic photo used for illustration purposes only

CASE STYLE: AW1564

Connectors	Model
SMA	ZARC-25-551-S+

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input	100W max.
DC Current (IN-OUT)	3A

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

Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

Features

- excellent mainline loss, 0.15 dB typ.
- good VSWR, 1.2 typ.

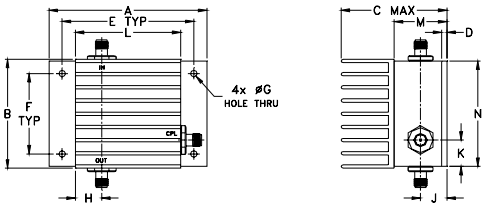
Applications

- instrumentation
- amateur radio

+RoHS Compliant

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

Outline Drawing

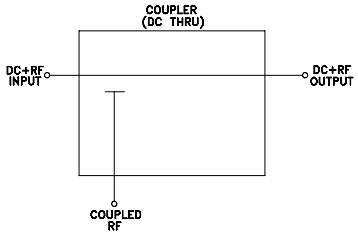


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
3.00	2.06	2.03	.10	2.500	1.525	.125
76.20	52.32	51.56	2.54	63.50	38.74	3.18

H	J	K	L	M	N	wt
.50	.50	.50	2.00	1.00	2.00	grams
12.70	12.70	12.70	50.80	25.40	50.80	230

Electrical Schematic



Electrical Specifications at 25°C

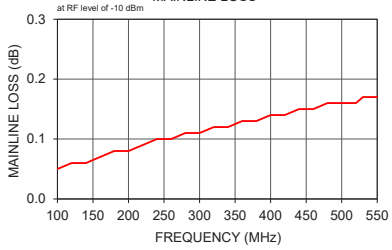
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		100		550	MHz
Mainline Loss (above theoretical 0.014 dB)	100	—	0.06	0.20	dB
	300	—	0.12	0.25	
	550	—	0.18	0.30	
Coupling* (IN-CPL, OUT-CPL)	100-550		25.5		dB
	100	24.7	26.3	27.8	
	300	24.0	25.8	27.6	
	550	22.7	24.9	27.0	
Coupling Flatness(±)	100-300	—	0.3	0.6	dB
	300-550	—	0.5	0.8	
Return Loss (Input)	100	24	32	—	dB
	300	18	23	—	
	550	16	20	—	
Return Loss (Output)	100	24	33	—	dB
	300	18	23	—	
	550	16	20	—	
Return Loss (Coupling)	100	12	13	—	dB
	300	20	24	—	
	550	12	14	—	
Input Power	100-550	—	—	100	W

* Coupling can be used for both forward and reversed direction.

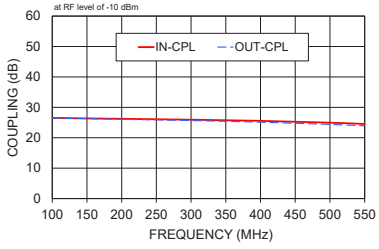
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Coupling (dB) Out-Cpl	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
100.00	0.05	26.50	26.47	34.80	35.47	14.51
200.00	0.08	26.21	26.07	28.80	29.55	24.20
300.00	0.11	25.94	25.66	25.41	26.27	24.68
400.00	0.14	25.56	25.11	23.63	24.72	19.64
500.00	0.16	24.96	24.38	22.91	24.21	16.31
512.00	0.16	24.86	24.28	22.87	24.21	15.98
520.00	0.16	24.80	24.20	22.85	24.24	15.76
530.00	0.17	24.71	24.11	22.84	24.27	15.50
540.00	0.17	24.62	24.01	22.86	24.31	15.24
550.00	0.17	24.53	23.90	22.86	24.37	14.98

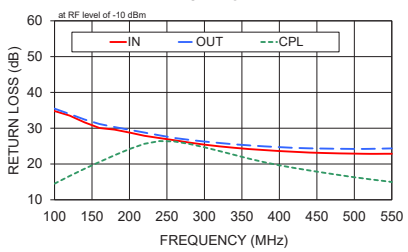
ZARC-25-551-S+
MAINLINE LOSS



ZARC-25-551-S+
COUPLING



ZARC-25-551-S+
RETURN 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.
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

Coaxial High Power Signal Tap ZARC-25-551-S+

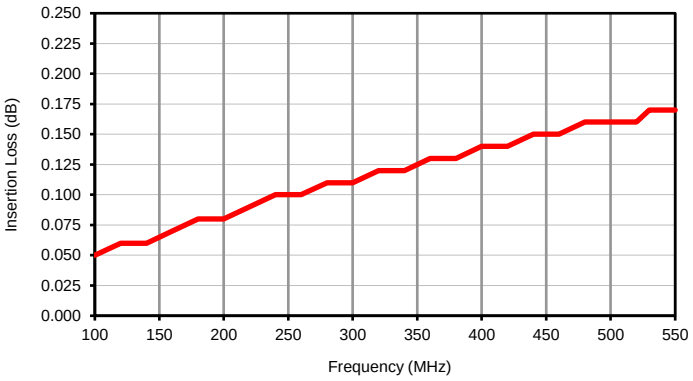
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)		RETURN LOSS (dB)		
		IN-CPL	OUT-CPL	IN	OUT	CPL
100	0.05	26.50	26.47	34.80	35.47	14.51
120	0.06	26.42	26.37	33.53	33.98	16.64
140	0.06	26.36	26.30	31.64	32.45	18.66
160	0.07	26.30	26.22	30.06	31.18	20.58
180	0.08	26.25	26.14	29.62	30.33	22.43
200	0.08	26.21	26.07	28.80	29.55	24.20
220	0.09	26.16	26.01	27.89	28.80	25.65
240	0.10	26.11	25.92	27.25	28.02	26.41
260	0.10	26.06	25.84	26.63	27.27	26.30
280	0.11	26.00	25.75	25.99	26.74	25.61
300	0.11	25.94	25.66	25.41	26.27	24.68
320	0.12	25.88	25.56	24.94	25.87	23.63
340	0.12	25.81	25.45	24.52	25.49	22.54
360	0.13	25.73	25.35	24.18	25.21	21.47
380	0.13	25.65	25.23	23.89	24.94	20.50
400	0.14	25.56	25.11	23.63	24.72	19.64
420	0.14	25.46	24.98	23.41	24.50	18.89
440	0.15	25.35	24.84	23.20	24.38	18.20
460	0.15	25.23	24.70	23.08	24.32	17.55
480	0.16	25.10	24.55	22.96	24.25	16.91
500	0.16	24.96	24.38	22.91	24.21	16.31
512	0.16	24.86	24.28	22.87	24.21	15.98
520	0.16	24.80	24.20	22.85	24.24	15.76
530	0.17	24.71	24.11	22.84	24.27	15.50
540	0.17	24.62	24.01	22.86	24.31	15.24
550	0.17	24.53	23.90	22.86	24.37	14.98

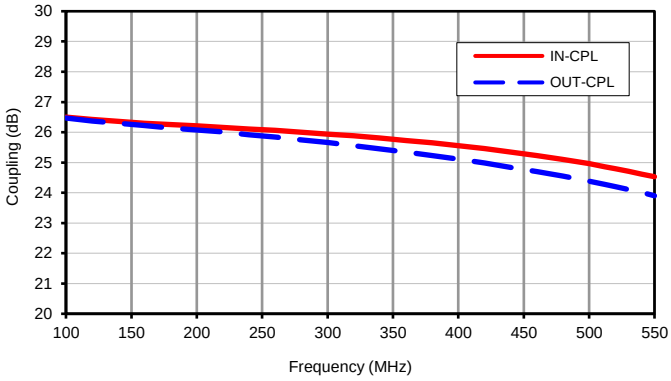
Coaxial High Power Signal Tap ZARC-25-551-S+

Typical Performance Curves

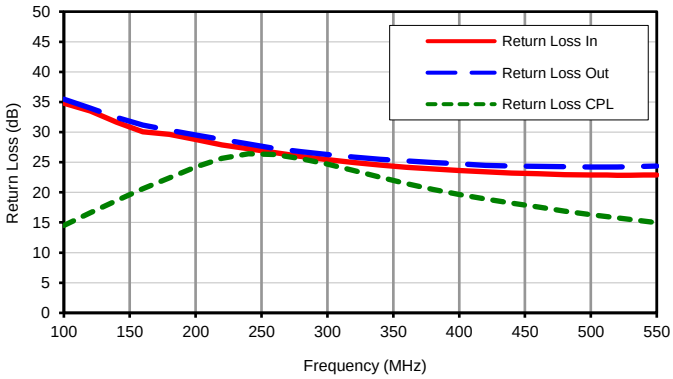
Insertion Loss



Coupling



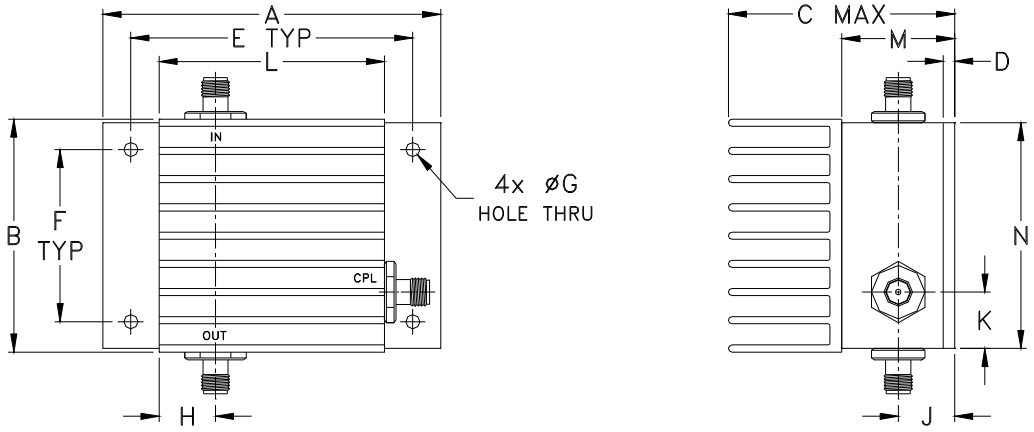
Return Loss



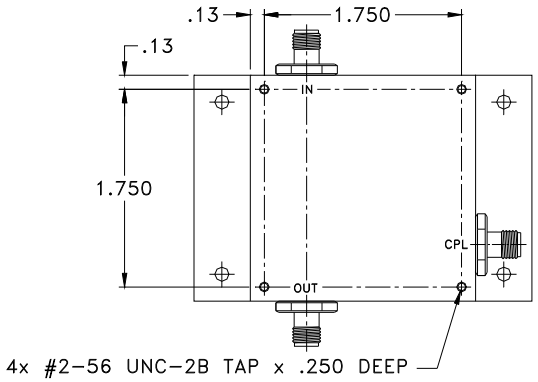
Case Style AW

AW1564

Outline Dimensions



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



CASE #	A	B	C	D	E	F	G	H	J	K	L
AW1564	3.00 (76.20)	2.06 (52.32)	2.03 (51.56)	.10 (2.54)	2.500 (63.50)	1.525 (38.74)	.125 (3.18)	.50 (12.70)	.50 (12.70)	.50 (12.70)	2.00 (50.80)

CASE #	M	N	WT, GRAMS	WT WITHOUT HEATSINK, GRAMS
AW1564	1.00 (25.40)	2.00 (50.80)	230	165

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

Notes:

1. Case material: Aluminum alloy.
2. Finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. Heat sink finish: Black anodize.

This document and its contents are the property of Mini-Circuits.

Mini-Circuits

Environmental Specifications **ENV28T5**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

This document and its contents are the property of Mini-Circuits.