COAXIAL

Wideband Amplifier

ZVA-203GX+

50Ω 2 to 20 GHz

FEATURES

- Low noise figure, 2 dB at 8 GHz
- High IP3, 27.5 dBm typ. at 8 GHz
- Excellent gain flatness, ± 1.0 dB typ. from 2 to 20 GHz
- Wide input voltage range +5V to +15V

Generic photo used for illustration purposes only

Model No.	ZVA-203GX+
Case Style	AV2554-1
Connectors	2.92mm Female

+RoHS Compliant

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

APPLICATIONS

- Radar
- Very wideband test instrumentation
- Lab use
- Wideband isolation, directivity 50 dB typ.
- EW

ELECTRICAL SPECIFICATIONS AT 25°C, V_{DD}=+5.0V TYP.

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range[1]		2		20	GHz
Noise Figure	2.0 8.0 20.0		4.8 2 4	6.4 3.7 6.4	dB
Gain	2.0 8.0 14.0 20.0	26 26 25 27	29.5 29.5 28.5 30	32.0 32.0 31.0 33.0	dB
Input Return Loss	2.0 4.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0		17 25 20 25 27 22 15 15 10 15		dB
Output Return Loss	2.0 4.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0		27 30 22 22 14 10 14 14 14 10		dB
Output Power @ 1 dB compression	2.0 8.0 12.0 16.0 18.0 20.0		16 16 15 15 14 14		dBm
Output IP3	2.0 8.0 12.0 16.0 18.0 20.0		27.5 27.5 27 26.5 26 25		dBm
I_{DD}, Device Operating Current at V_{DD}=5V[2]	—		400	500	mA
Device Operating Voltage	—	+5	+9	+15	V

1. Usable 1 GHz to 22 GHz.
2. Increasing VDD, reduces IDD.

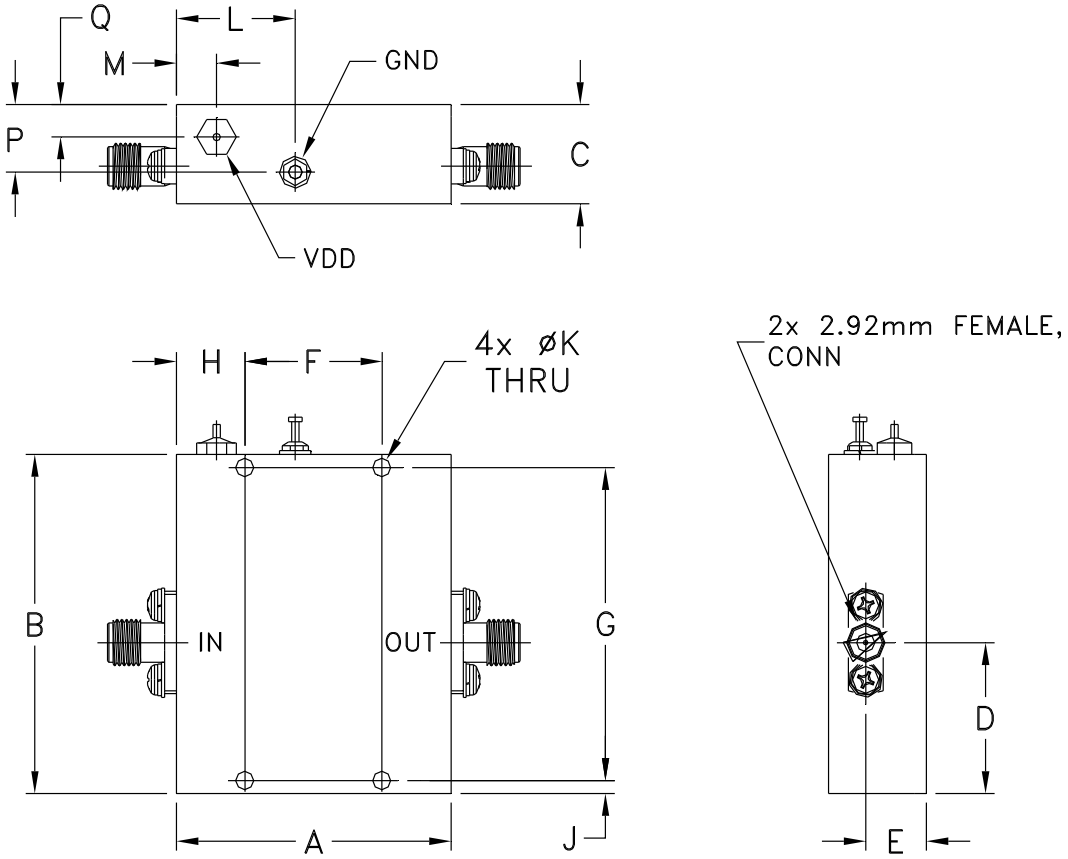
REV. B
ECO-010115
ZVA-203GX+
SP/CP/AM
211014

Wideband Amplifier ZVA-203GX+

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature (ground lead)	0°C to 85°C
Storage Temperature	-55°C to 100°C
Total Power Dissipation	2W
Input Power (CW), Vd=12	0 dBm
DC Voltage	+15V

OUTLINE DRAWING



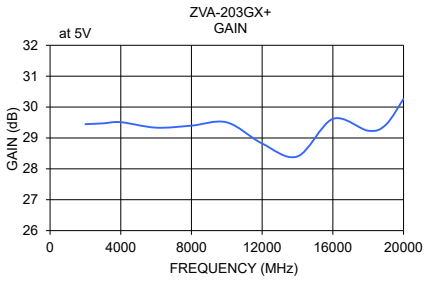
OUTLINE DIMENSIONS (Inches / mm)

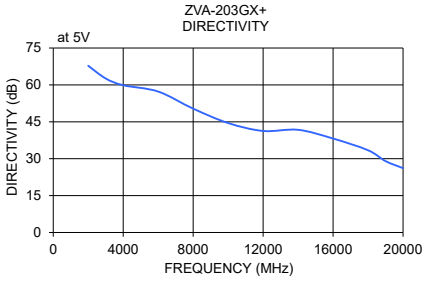
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	wt
1.5	1.82	0.53	0.81	0.33	0.75	1.680	0.380	0.070	0.098	0.65	0.22	-	0.36	0.17	grams
38.10	46.23	13.46	20.57	8.38	19.05	42.67	9.65	1.78	2.49	16.51	5.59	-	9.14	4.32	140

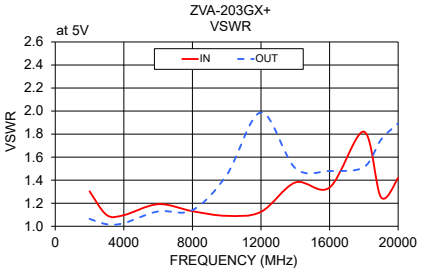
Wideband Amplifier ZVA-203GX+

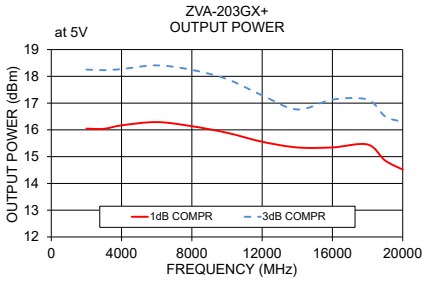
TYPICAL PERFORMANCE DATA/CURVES

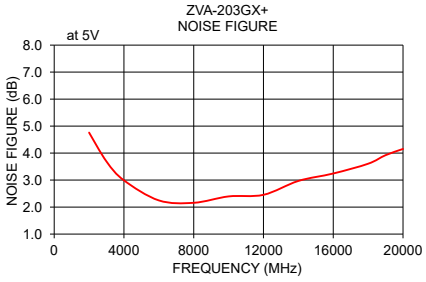
Frequency (MHz)	Gain (dB)	Directivity (dB)	VSWR (:1)		Noise Figure (dB)	Pout at 1 dB Compr. (dBm)		OIP3 (dBm)
			IN	OUT		1dB	3dB	
2000	29.45	67.79	1.30	1.06	4.76	16.05	18.25	28.72
3000	29.47	62.60	1.10	1.02	3.69	16.04	18.23	28.84
4000	29.51	59.87	1.10	1.03	2.99	16.17	18.27	29.02
6000	29.33	57.30	1.19	1.13	2.25	16.29	18.41	29.41
8000	29.40	50.34	1.13	1.14	2.16	16.14	18.24	28.68
10000	29.50	44.50	1.09	1.45	2.40	15.89	17.90	28.16
12000	28.82	41.28	1.13	1.99	2.45	15.56	17.29	28.47
14000	28.40	41.74	1.38	1.50	2.97	15.34	16.76	28.10
16000	29.62	38.19	1.34	1.48	3.24	15.34	17.13	27.39
18000	29.23	33.43	1.82	1.51	3.61	15.45	17.13	28.02
19000	29.43	29.01	1.25	1.75	3.92	14.86	16.50	27.28
20000	30.27	26.16	1.42	1.89	4.15	14.52	16.30	26.21

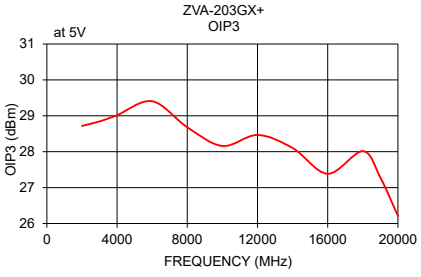












NOTES

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.

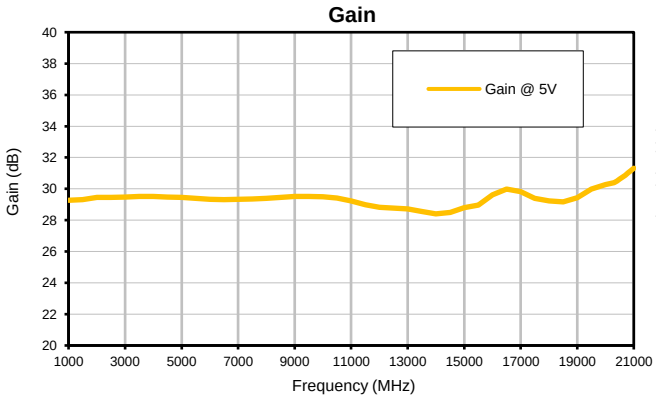
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained there in. For a full statement of the standard. Terms and the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

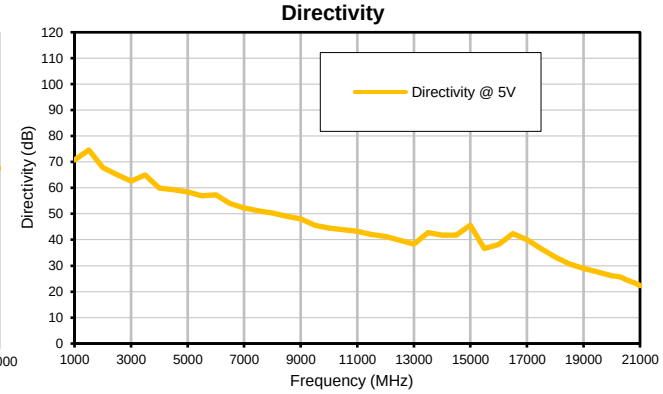
Wideband Amplifier ZVA-203GX+

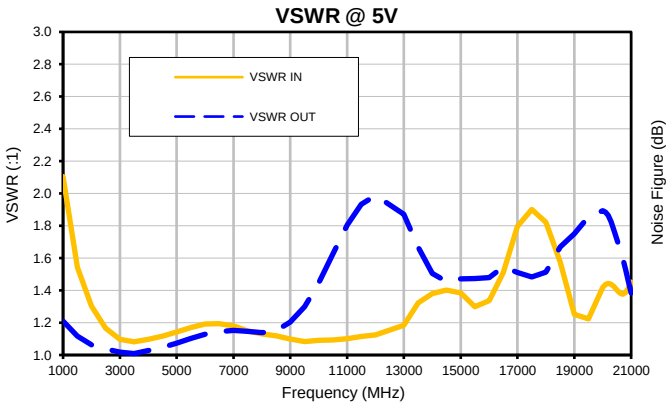
Typical Performance Data

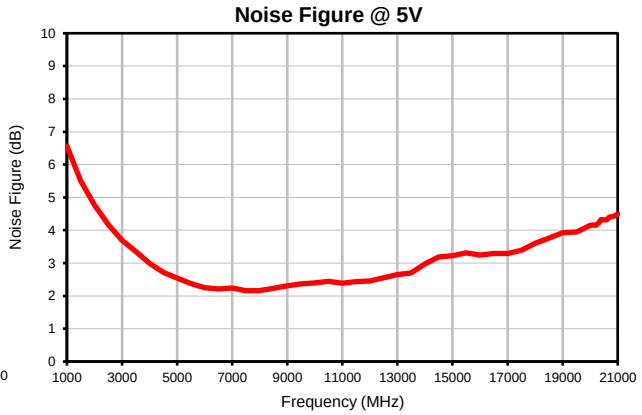
FREQUENCY (MHz)	GAIN (dB) 5V	DIRECTIVITY (dB) 5V	VSWR (:1) IN 5V	VSWR (:1) OUT 5V	NOISE FIGURE (dB) 5V	POUT @ 1 dB COMPRESSION (dBm) 5V	POUT @ 3 dB COMPRESSION (dBm) 5V	OUTPUT IP3 (dBm) 5V
1000	29.28	70.83	2.10	1.21	6.56	16.38	18.69	28.82
1500	29.31	74.62	1.54	1.12	5.50	16.02	18.25	28.68
2000	29.45	67.79	1.30	1.06	4.76	16.05	18.25	28.72
2500	29.45	65.09	1.17	1.04	4.17	16.03	18.21	28.74
3000	29.47	62.60	1.10	1.02	3.69	16.04	18.23	28.84
3500	29.51	65.00	1.08	1.01	3.35	16.16	18.24	28.97
4000	29.51	59.87	1.10	1.03	2.99	16.17	18.27	29.02
4500	29.48	59.36	1.12	1.05	2.72	16.22	18.31	29.18
5000	29.44	58.38	1.14	1.07	2.54	16.31	18.39	29.27
5500	29.39	57.01	1.17	1.10	2.37	16.31	18.43	29.34
6000	29.33	57.30	1.19	1.13	2.25	16.29	18.41	29.41
6500	29.31	54.02	1.19	1.15	2.21	16.26	18.43	29.14
7000	29.33	52.31	1.18	1.15	2.24	16.27	18.34	29.05
7500	29.36	51.11	1.15	1.15	2.16	16.22	18.27	28.87
8000	29.40	50.34	1.13	1.14	2.16	16.14	18.24	28.68
8500	29.45	49.05	1.12	1.15	2.23	16.20	18.29	28.60
9000	29.51	48.05	1.10	1.20	2.31	16.03	18.10	28.50
9500	29.51	45.63	1.08	1.30	2.37	15.95	18.00	28.37
10000	29.50	44.50	1.09	1.45	2.40	15.89	17.90	28.16
10500	29.41	43.90	1.09	1.62	2.44	15.74	17.71	27.84
11000	29.23	43.29	1.10	1.80	2.38	15.74	17.60	28.13
11500	28.99	41.97	1.12	1.93	2.43	15.58	17.31	28.53
12000	28.82	41.28	1.13	1.99	2.45	15.56	17.29	28.47
13000	28.71	38.30	1.18	1.87	2.64	15.65	17.28	29.27
13500	28.56	42.79	1.32	1.67	2.70	15.46	16.90	28.60
14000	28.40	41.74	1.38	1.50	2.97	15.34	16.76	28.10
14500	28.50	41.81	1.40	1.46	3.19	15.26	16.81	27.73
15000	28.79	45.55	1.38	1.47	3.23	15.21	16.94	27.31
15500	28.97	36.63	1.30	1.47	3.32	15.36	17.16	27.35
16000	29.62	38.19	1.34	1.48	3.24	15.34	17.13	27.39
16500	29.98	42.46	1.51	1.55	3.29	15.48	17.18	27.42
17000	29.81	40.04	1.80	1.51	3.30	15.38	17.10	27.66
17500	29.40	36.59	1.90	1.48	3.39	15.51	17.17	27.94
18000	29.23	33.43	1.82	1.51	3.61	15.45	17.13	28.02
18500	29.17	30.73	1.58	1.67	3.76	15.00	16.64	27.62
19000	29.43	29.01	1.25	1.75	3.92	14.86	16.50	27.28
19500	29.99	27.64	1.22	1.86	3.94	14.69	16.43	26.66
20000	30.27	26.16	1.42	1.89	4.15	14.52	16.30	26.21
20100	30.30	26.01	1.44	1.88	4.16	14.44	16.26	26.31
20200	30.35	25.89	1.44	1.86	4.15	14.35	16.23	26.17
20300	30.40	25.67	1.44	1.82	4.22	14.20	16.18	25.88
20400	30.49	25.29	1.42	1.77	4.32	14.11	16.12	25.62
20500	30.61	24.67	1.40	1.71	4.32	14.05	16.18	25.46
20600	30.74	24.23	1.38	1.66	4.31	13.82	16.05	24.90
20700	30.87	23.76	1.38	1.60	4.41	13.78	16.06	25.00
20800	31.03	23.43	1.39	1.53	4.42	13.97	16.19	25.02
20900	31.18	22.95	1.42	1.45	4.44	13.63	16.02	24.52
21000	31.32	22.34	1.45	1.38	4.49	13.62	15.97	24.39

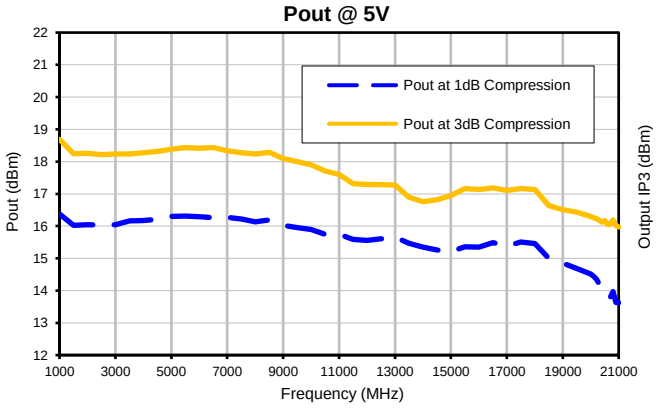
Typical Performance Curves

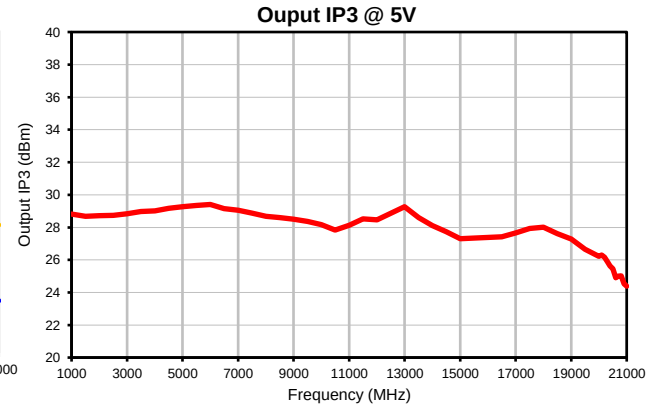








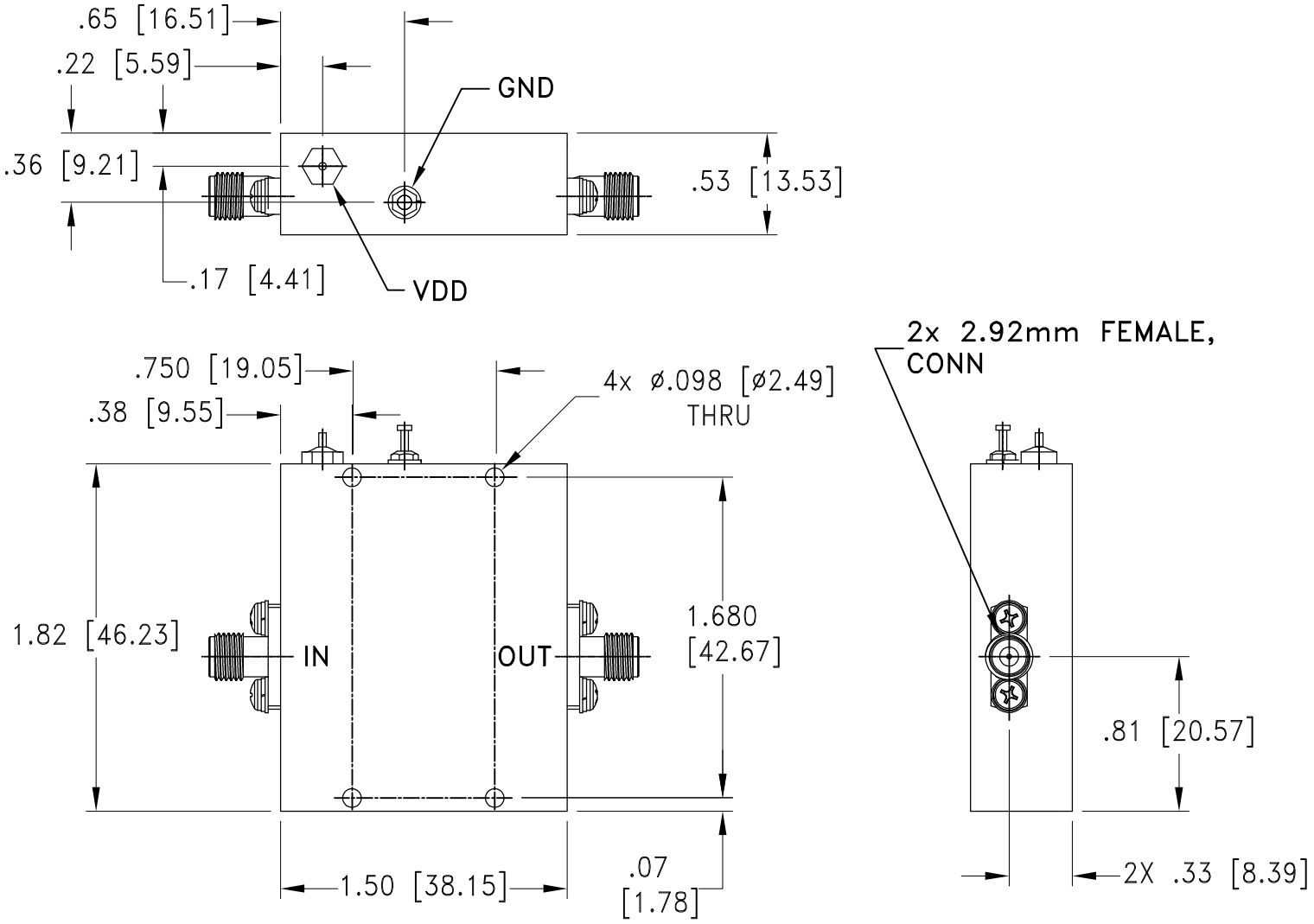




Case Style AV

Outline Dimensions

AV2554-1



Weight: 140 grams

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

Notes:

1. Case material: Brass alloy
2. Case finish: Gold plating 20 µinches, over Nickel plating 100 µinches.

Mini-Circuits

Environmental Specifications ENV23T10

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 Case Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C