

+10 to +20dBm Limiter

VLM-52-S+

50Ω Broadband 10 to 500 MHz



Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Input Power	100mW

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

Features

- wideband, 10 to 500 MHz

Applications

- military, hi-rel applications
- stabilizing generator outputs
- reducing amplitude variations

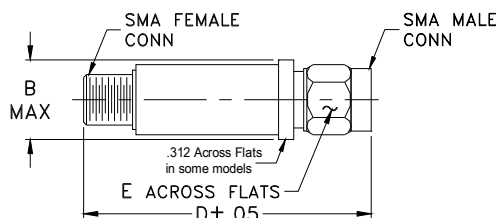
CASE STYLE: FF704

Connectors	Model
SMA	VLM-52-S+

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch/mm)

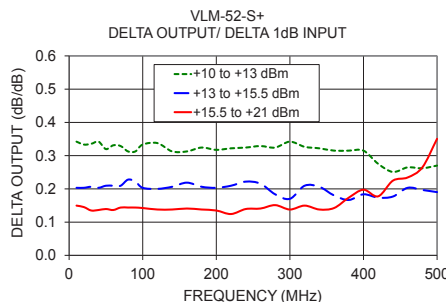
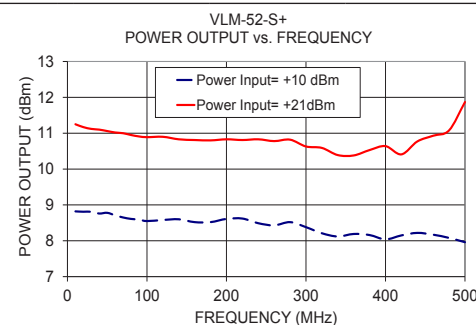
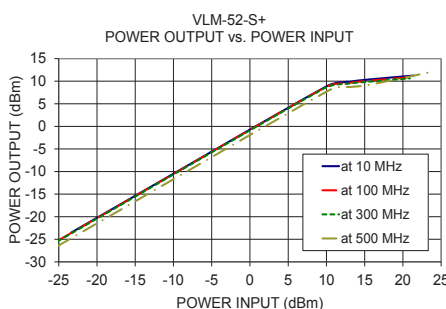
B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

Electrical Specifications

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		10		500	MHz
Low Input Power Insertion Loss			0.5	1.9	dB
Input Power Limiting Range		+10		+20	dBm
Output Power			+9.5		dBm
Limiting Δ Output/1dB Δ Input	Input Power Range (dBm)				
	9.5 to 12.5		0.30		dB/dB
	12.5 to 15		0.20		
	15 to 20		0.14		

Typical Performance Data

Freq. (MHz)	Low drive Ins. Loss (dB)	Power Output (dBm)				Δ Output 1dB Δ Input		
		+10 dBm Input	+13 dBm Input	+15.5 dBm Input	+21.3 dBm Input	+10 to +13 dBm Input	+13 to +15.5 dBm Input	+15.5 to +21 dBm Input
10.00	-0.15	8.82	9.86	10.37	11.25	0.34	0.20	0.15
30.00	-0.17	8.81	9.82	10.34	11.12	0.34	0.21	0.13
60.00	-0.15	8.71	9.70	10.23	11.02	0.33	0.21	0.14
70.00	-0.15	8.65	9.63	10.16	11.00	0.33	0.21	0.14
90.00	-0.16	8.59	9.50	10.07	10.91	0.31	0.22	0.14
100.00	-0.19	8.55	9.55	10.06	10.89	0.33	0.20	0.14
120.00	-0.25	8.58	9.60	10.10	10.90	0.34	0.20	0.14
180.00	-0.51	8.52	9.48	10.00	10.80	0.32	0.21	0.14
200.00	-0.57	8.61	9.54	10.05	10.83	0.32	0.20	0.13
220.00	-0.58	8.62	9.57	10.10	10.81	0.32	0.21	0.12
240.00	-0.55	8.49	9.45	10.02	10.83	0.32	0.22	0.14
260.00	-0.46	8.43	9.41	9.96	10.78	0.33	0.22	0.14
300.00	-0.30	8.38	9.42	9.83	10.63	0.34	0.17	0.14
360.00	-0.54	8.19	9.11	9.55	10.38	0.32	0.18	0.14
380.00	-0.77	8.16	9.08	9.48	10.53	0.32	0.17	0.17
400.00	-1.01	8.04	8.96	9.41	10.64	0.32	0.18	0.20
440.00	-1.42	8.22	8.89	9.32	10.77	0.25	0.18	0.22
480.00	-1.48	8.08	8.79	9.28	11.08	0.26	0.20	0.26
500.00	-1.35	7.96	8.70	9.17	11.87	0.27	0.19	0.35



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/MCLStore/terms.jsp



Typical Performance Data

FREQUENCY (MHz)	LOW DRIVE INSERTION LOSS (dB)	POWER OUTPUT (dBm)				DELTA OUTPUT/1dB DELTA INPUT (dB/dB)		
		+10 dBm INPUT	+13 dBm INPUT	+15.5 dBm INPUT	+21 dBm INPUT	+10 to +13 dBm INPUT	+13 to +15.5 dBm INPUT	+15.5 to +21 dBm INPUT
10	-0.15	8.82	9.86	10.37	11.25	0.34	0.20	0.15
20	-0.16	8.81	9.81	10.32	11.17	0.33	0.20	0.15
30	-0.17	8.81	9.82	10.34	11.12	0.34	0.21	0.13
40	-0.16	8.76	9.80	10.31	11.10	0.34	0.20	0.14
50	-0.16	8.78	9.72	10.25	11.06	0.32	0.21	0.14
60	-0.15	8.71	9.70	10.23	11.02	0.33	0.21	0.14
70	-0.15	8.65	9.63	10.16	11.00	0.33	0.21	0.14
80	-0.16	8.61	9.52	10.11	10.95	0.31	0.23	0.14
90	-0.16	8.59	9.50	10.07	10.91	0.31	0.22	0.14
100	-0.19	8.55	9.55	10.06	10.89	0.33	0.20	0.14
120	-0.25	8.58	9.60	10.10	10.90	0.34	0.20	0.14
140	-0.34	8.60	9.51	10.03	10.83	0.31	0.21	0.14
160	-0.42	8.52	9.43	9.99	10.81	0.31	0.22	0.14
180	-0.51	8.52	9.48	10.00	10.80	0.32	0.21	0.14
200	-0.57	8.61	9.54	10.05	10.83	0.32	0.20	0.13
220	-0.58	8.62	9.57	10.10	10.81	0.32	0.21	0.12
240	-0.55	8.49	9.45	10.02	10.83	0.32	0.22	0.14
260	-0.46	8.43	9.41	9.96	10.78	0.33	0.22	0.14
280	-0.37	8.52	9.48	9.93	10.82	0.32	0.18	0.15
300	-0.30	8.38	9.42	9.83	10.63	0.34	0.17	0.14
320	-0.29	8.21	9.18	9.71	10.59	0.33	0.21	0.15
340	-0.37	8.12	9.07	9.59	10.39	0.32	0.21	0.14
360	-0.54	8.19	9.11	9.55	10.38	0.32	0.18	0.14
380	-0.77	8.16	9.08	9.48	10.53	0.32	0.17	0.17
400	-1.01	8.04	8.96	9.41	10.64	0.32	0.18	0.20
420	-1.25	8.15	8.91	9.33	10.41	0.28	0.17	0.18
440	-1.42	8.22	8.89	9.32	10.77	0.25	0.18	0.22
460	-1.51	8.17	8.89	9.40	10.93	0.26	0.20	0.23
480	-1.48	8.08	8.79	9.28	11.08	0.26	0.20	0.26
500	-1.35	7.96	8.70	9.17	11.87	0.27	0.19	0.35


LIMITER

VLM-52-S+

Typical Performance Data

POWER INPUT	POWER OUTPUT	POWER INPUT	POWER OUTPUT	POWER INPUT	POWER OUTPUT	POWER INPUT	POWER OUTPUT
@ 10 MHz		@ 100 MHz		@ 300 MHz		@ 500 MHz	
(dBm)		(dBm)		(dBm)		(dBm)	
-23.40	-23.55	-24.82	-25.01	-25.11	-25.41	-25.20	-26.55
9.97	8.82	9.73	8.55	9.67	8.38	10.31	7.96
13.01	9.86	12.73	9.55	12.71	9.42	13.05	8.70
15.52	10.37	15.24	10.06	15.12	9.83	15.52	9.17
21.40	11.25	21.07	10.89	20.92	10.63	23.22	11.87



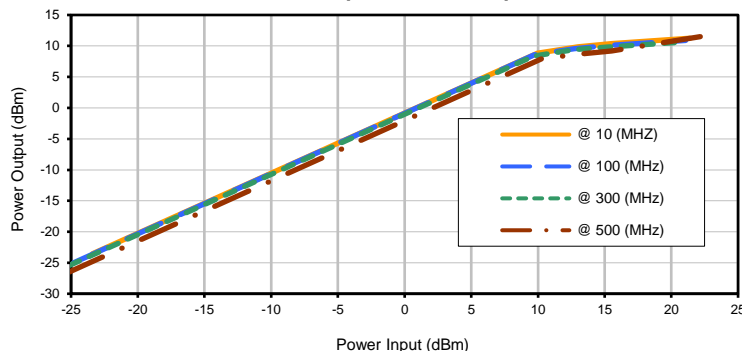
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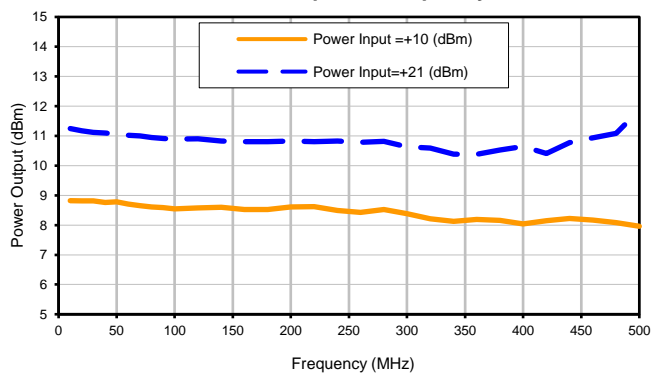
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Typical Performance Curves

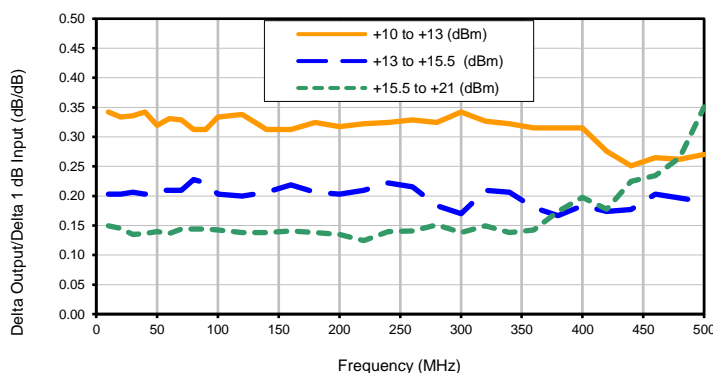
Power Output vs Power Input



Power Output vs Frequency



Delta Output / Delta 1dB Input

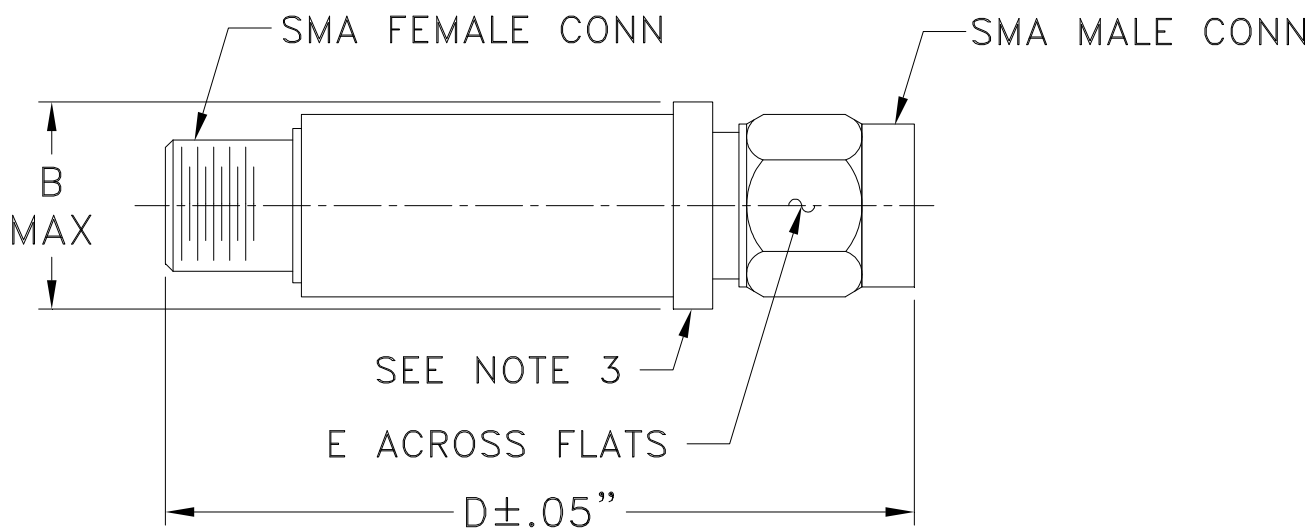


Case Style

FF

FF704

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF704	--	.410 (10.41)	--	1.43 (36.32)	.312 (7.92)	10.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.

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RF/IF MICROWAVE COMPONENTS



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	-55° to 100°C Ambient Environment	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