LTCC COAXIAL

Low Pass Filter

VLFG-3700+

50Ω DC to 3700 MHz SMA Male/Female

KEY FEATURES

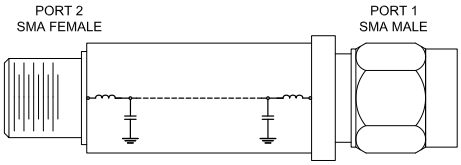
- Low Insertion Loss, 1.3 dB Typ.
- Return Loss, 15 dB Typ.
- Stopband Rejection, 44 dB Typ.
- Rugged Unibody Construction
- Power Handling: 4.5 Watts

Generic photo used for illustration purposes only

APPLICATIONS

- 5G Sub 6 GHz
- Satcom Modems

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

VLFG-3700+ is a Low Pass filter with DC to 3700 MHz passband supporting a variety of applications. This model provides 1.3 dB typical insertion loss over a wide band due to its rugged unibody construction. VLFG-3700+ offers low insertion loss, and excellent power handling capability. It handles up to 4.5 W RF input power and provides a wide operating temperature range from -55°C to 125°C.

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	DC-F1	DC- 3700	—	1.3	2.1	dB
	Freq. Cut-Off[2]	Fc	4360	—	3	—	dB
	Return Loss	DC-F1	DC - 3700	—	15	—	dB
Stopband	Rejection	F2-F3	5500 - 6100	20	43	—	dB
		F3-F4	6100 - 8200	35	44	—	
		F4-F5	8200 - 10000	25	36	—	
		F5-F6	10000 - 18000	—	20	—	

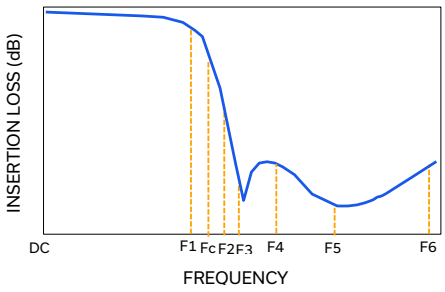
1. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.
2. Typical variation ± 5%

ABSOLUTE MAXIMUM RATINGS[3]

Parameter	Ratings
Operating Temperature	-55°C to +125°C
Storage Temperature	-55°C to +125°C
Input Power[4]	4.5 W @+25°C

3. Permanent damage may occur if any of these limits are exceeded.
4. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 1 W at +125°C.

TYPICAL FREQUENCY RESPONSE AT +25°C



REV. OR
ECO-026903
VLFG-3700+
EDU5165
URJ
250910

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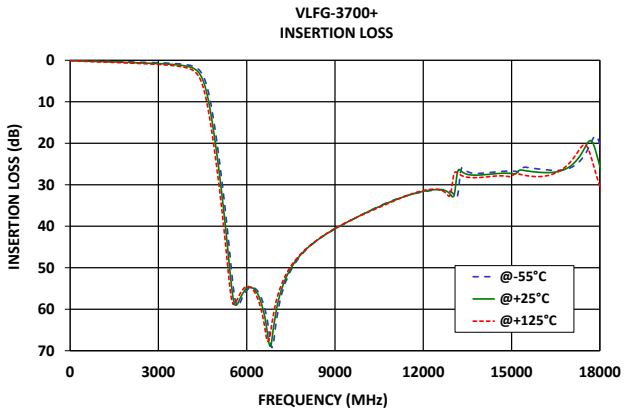
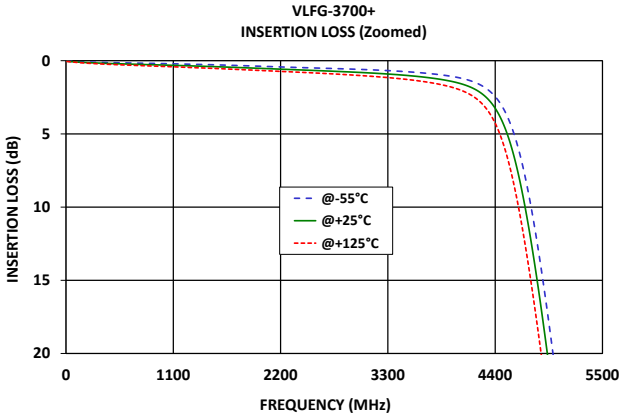
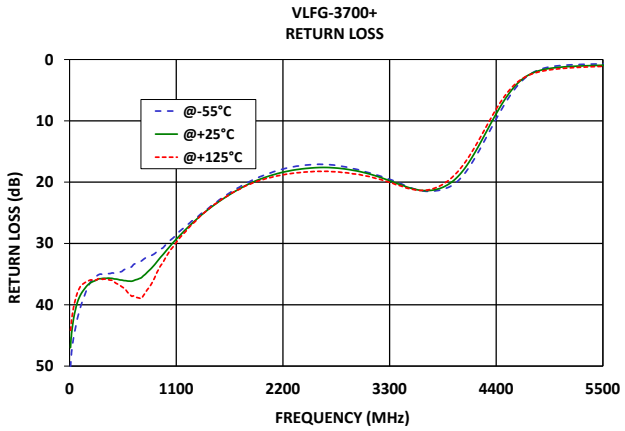
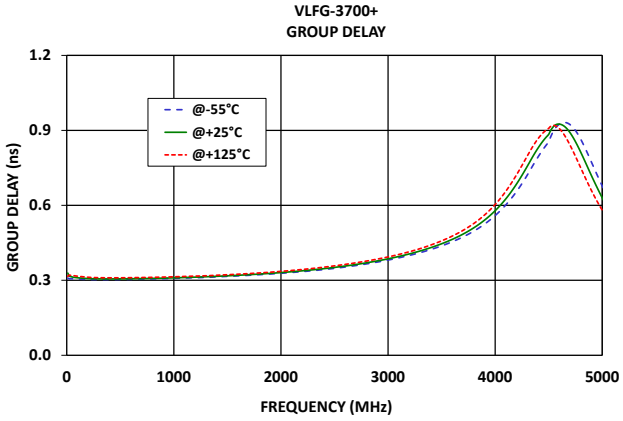
TYPICAL PERFORMANCE GRAPHS AT +25°C









Low Pass Filter

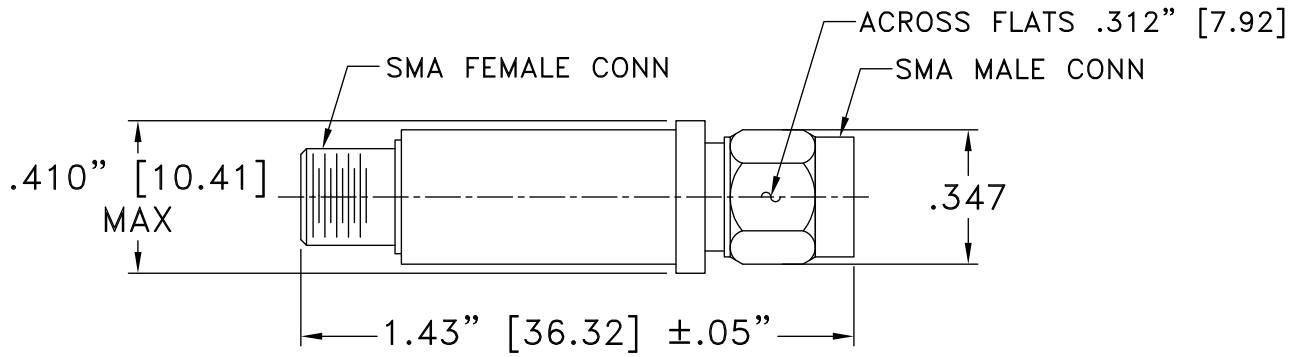
VLFG-3700+

50Ω DC to 3700 MHz SMA Male/Female

CONNECTOR DESCRIPTION

Function	Functionality	Connector
RF1	Port-1	SMA MALE
RF2	Port-2	SMA FEMALE

CASE STYLE DRAWING



Unit weight: 10.0grams

Dimensions are in inches (mm). Tolerances: 2 Pl. ±.04"; 3 Pl. ±.30"

PRODUCT MARKING*: VLFG-3700+

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

Low Pass Filter

VLFG-3700+

50Ω DC to 3700 MHz SMA Male/Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	FF704
RoHS Status	Compliant
Environmental Ratings	ENV113

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-Circuits' 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/terms/viewterm.html

Ceramic Low Pass Filter VLFG-3700+

Typical Performance Data

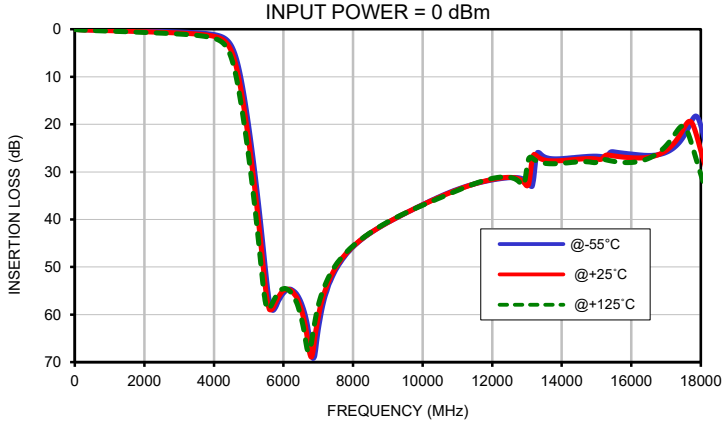
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10	0.03	0.04	0.05	50.14	46.98	44.16	50.72	46.44	44.22
100	0.06	0.09	0.11	41.12	38.82	37.35	40.73	38.19	36.66
200	0.08	0.12	0.16	36.78	36.60	36.05	35.09	34.66	34.12
300	0.10	0.15	0.20	35.09	35.77	35.72	32.38	32.53	32.52
400	0.12	0.18	0.24	34.92	35.65	35.91	30.81	30.87	30.86
500	0.14	0.20	0.27	34.76	35.86	36.65	29.47	29.54	29.40
600	0.15	0.22	0.29	34.12	36.13	38.01	28.29	28.37	28.21
700	0.16	0.24	0.32	33.08	35.85	38.83	27.19	27.31	27.17
800	0.18	0.26	0.34	32.21	34.71	37.57	26.35	26.32	26.15
900	0.19	0.28	0.37	31.34	33.01	34.76	25.70	25.42	25.16
1000	0.20	0.30	0.39	30.08	31.12	32.06	24.99	24.58	24.23
1200	0.23	0.34	0.44	27.21	27.68	28.00	23.50	23.01	22.56
1400	0.26	0.38	0.50	24.63	24.83	24.82	22.16	21.59	21.08
1600	0.30	0.43	0.55	22.26	22.55	22.48	20.83	20.41	19.92
1800	0.34	0.47	0.61	20.34	20.68	20.73	19.74	19.44	19.12
2000	0.38	0.53	0.67	18.90	19.32	19.55	18.88	18.76	18.68
2200	0.43	0.58	0.73	17.86	18.37	18.80	18.19	18.32	18.48
2400	0.47	0.63	0.79	17.28	17.83	18.39	17.84	18.08	18.46
2600	0.51	0.68	0.85	17.10	17.61	18.25	17.79	18.08	18.59
2800	0.55	0.74	0.93	17.38	17.78	18.39	18.07	18.37	18.88
3000	0.59	0.80	1.01	18.08	18.30	18.80	18.66	18.88	19.36
3200	0.64	0.87	1.10	18.99	19.20	19.53	19.37	19.66	20.21
3500	0.76	1.01	1.28	20.82	20.90	21.05	20.72	21.18	22.05
3700	0.86	1.15	1.46	21.50	21.37	21.26	21.68	22.30	23.20
3800	0.93	1.23	1.57	21.36	21.11	20.76	22.12	22.80	23.53
4000	1.13	1.49	1.90	19.87	19.16	18.35	21.80	21.91	21.47
4360	2.18	2.88	3.77	10.87	9.98	9.17	11.97	11.18	10.54
4400	2.45	3.25	4.27	9.69	8.84	8.07	10.82	10.08	9.53
4600	5.15	6.71	8.71	4.64	4.22	3.94	6.17	5.94	5.95
4800	11.21	13.69	16.60	1.95	2.04	2.19	3.74	3.94	4.19
5000	20.39	23.41	26.83	1.09	1.35	1.59	2.59	2.84	3.05
5200	31.61	35.06	38.95	0.84	1.10	1.32	1.87	2.07	2.24
5400	44.73	48.71	52.93	0.74	0.98	1.17	1.36	1.55	1.70
5500	51.80	55.37	57.97	0.70	0.93	1.12	1.18	1.36	1.51
5800	58.06	57.06	55.92	0.58	0.82	1.02	0.80	0.97	1.14
6000	55.48	54.89	54.57	0.51	0.77	1.01	0.64	0.82	1.00
6100	54.75	54.73	54.67	0.48	0.74	1.02	0.58	0.76	0.95
6300	55.10	55.61	56.30	0.42	0.72	1.05	0.50	0.68	0.89
6600	59.47	61.39	63.79	0.35	0.68	1.09	0.41	0.60	0.83
6800	67.41	68.94	66.11	0.30	0.65	1.09	0.37	0.57	0.82
7000	63.15	60.60	58.11	0.27	0.63	1.08	0.35	0.56	0.82
7200	56.03	54.92	53.72	0.25	0.61	1.04	0.34	0.55	0.83
7400	52.12	51.45	50.75	0.24	0.59	1.00	0.33	0.55	0.84
7600	49.42	49.02	48.64	0.25	0.57	0.95	0.33	0.55	0.86
7800	47.39	47.16	46.95	0.26	0.57	0.91	0.33	0.56	0.87
8000	45.80	45.65	45.56	0.27	0.55	0.87	0.34	0.57	0.88
8200	44.49	44.41	44.33	0.27	0.54	0.84	0.34	0.58	0.89
8400	43.37	43.33	43.27	0.25	0.52	0.82	0.35	0.59	0.90
8600	42.37	42.36	42.27	0.22	0.49	0.81	0.36	0.60	0.90
8800	41.50	41.46	41.36	0.19	0.48	0.82	0.37	0.60	0.90
9000	40.65	40.62	40.51	0.16	0.46	0.84	0.37	0.61	0.89
9200	39.86	39.84	39.74	0.12	0.44	0.85	0.38	0.61	0.87
9400	39.10	39.07	39.01	0.09	0.42	0.86	0.39	0.61	0.85
9600	38.35	38.34	38.32	0.06	0.40	0.85	0.40	0.61	0.84
9800	37.61	37.62	37.65	0.04	0.38	0.83	0.40	0.61	0.81
10000	36.89	36.92	37.01	0.03	0.37	0.79	0.40	0.60	0.79
10200	36.16	36.25	36.38	0.04	0.36	0.74	0.40	0.59	0.76
10400	35.49	35.59	35.76	0.05	0.35	0.69	0.39	0.58	0.73
5800	58.06	57.06	55.92	0.58	0.82	1.02	0.80	0.97	1.14
18000	20.29	25.56	30.53	4.05	2.04	2.00	0.32	0.48	0.65

Typical Performance Data

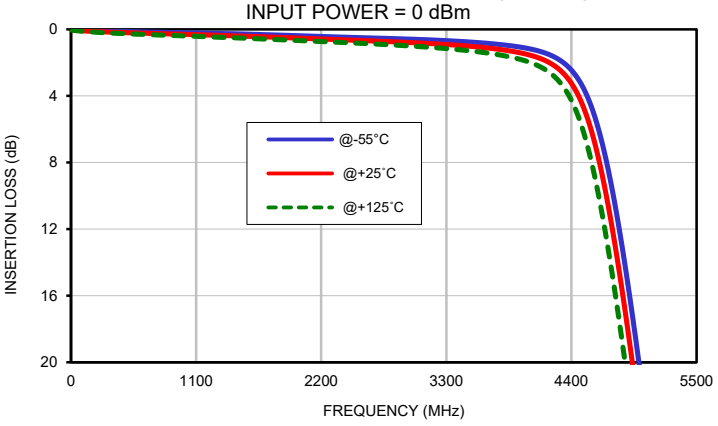
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-55°C	@+25°C	@+125°C
10	0.31	0.33	0.32
20	0.31	0.32	0.32
40	0.31	0.31	0.32
60	0.31	0.31	0.32
100	0.31	0.31	0.32
200	0.30	0.31	0.31
300	0.30	0.31	0.31
400	0.30	0.31	0.31
500	0.30	0.31	0.31
600	0.30	0.31	0.31
700	0.30	0.31	0.31
800	0.31	0.31	0.31
900	0.31	0.31	0.31
1000	0.31	0.31	0.31
1100	0.31	0.31	0.32
1200	0.31	0.31	0.32
1300	0.31	0.31	0.32
1400	0.31	0.32	0.32
1500	0.32	0.32	0.32
1600	0.32	0.32	0.32
1700	0.32	0.32	0.33
1800	0.32	0.33	0.33
1900	0.33	0.33	0.33
2000	0.33	0.33	0.34
2100	0.33	0.33	0.34
2200	0.33	0.34	0.34
2300	0.34	0.34	0.35
2400	0.34	0.35	0.35
2500	0.35	0.35	0.36
2600	0.35	0.36	0.36
2700	0.36	0.36	0.37
2800	0.37	0.37	0.38
2900	0.37	0.38	0.38
3000	0.38	0.39	0.39
3100	0.39	0.40	0.40
3200	0.40	0.41	0.41
3300	0.41	0.42	0.43
3400	0.42	0.43	0.44
3500	0.44	0.45	0.46
3600	0.45	0.46	0.48
3700	0.47	0.48	0.50

Typical Performance Curves

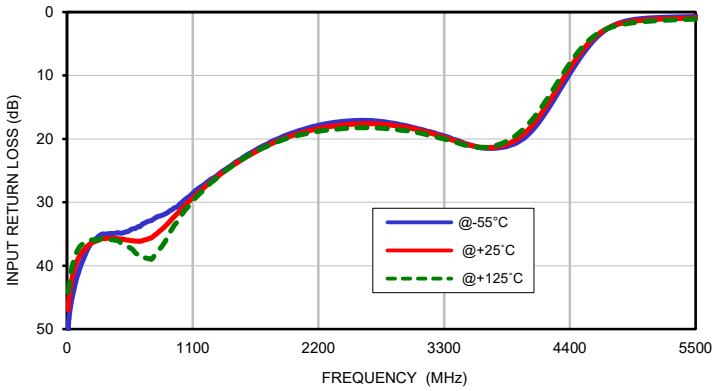
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



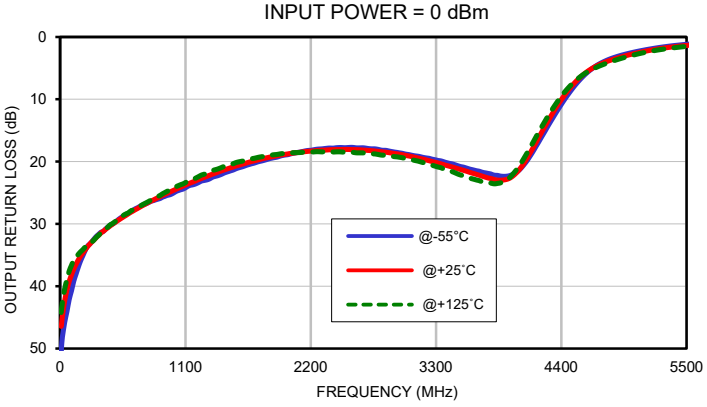
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



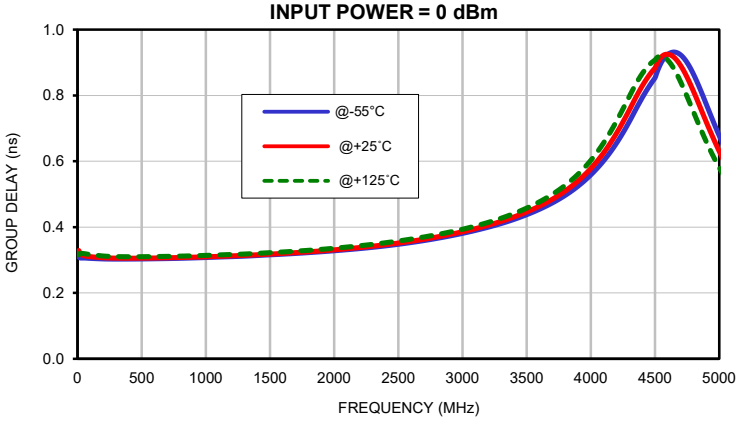
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



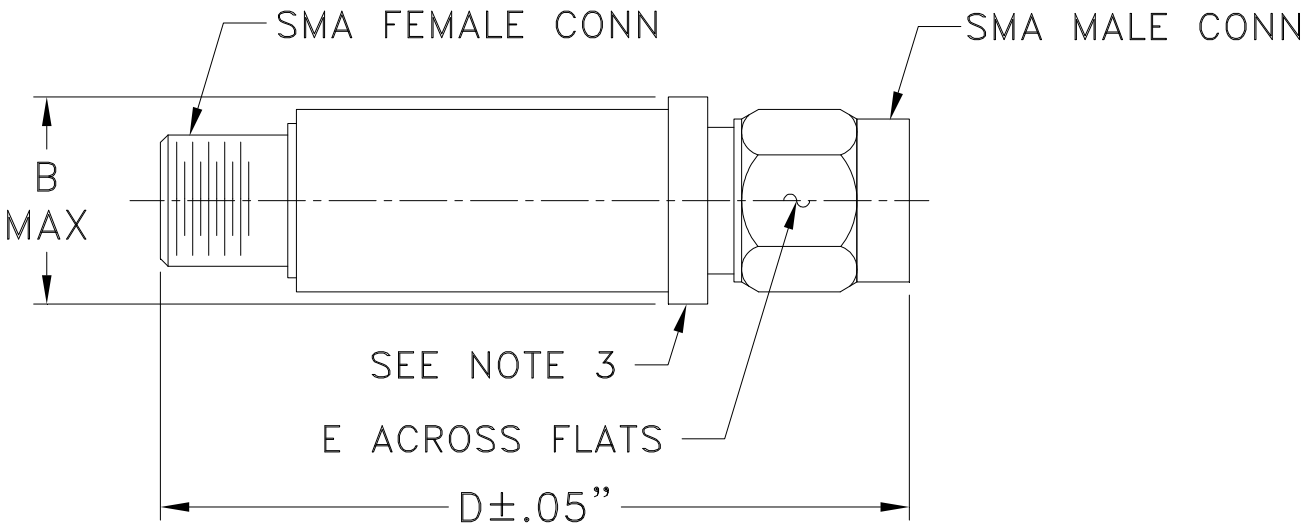
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



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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Mini-Circuits

Environmental Specifications ENV113

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
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
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	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, Except +100°C

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