

# Fixed Attenuator

### **VAT-A-SERIES**

 $50\Omega$  Up to 1W

DC to 6000 MHz

#### THE BIG DEAL

- · Wideband coverage, DC to 6000 MHz
- Up to 1 watt rating
- Rugged unibody construction
- Excellent VSWR
- Excellent flatness



Generic photo used for illustration purposes only

Model No.	VAT-A-SERIES
Case Style	FF704
Connectors	SMA

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

#### **APPLICATIONS**

- Signal level adjustment
- · Impedance matching

#### **PRODUCT OVERVIEW**

Mini-Circuits' VAT-A series are fixed attenuators from DC to 6000 MHz frequency range with excellent flatness in attenuation. VAT-A series is available with nominal attenuation of 1 to 30 dB. This attenuator series support testing and measurement application. Precise performance, excellent VSWR and rugged unibody construction makes the model ideal solution for systems requiring precise attenuation across very wide frequency range.

#### **KEY FEATURES**

KETT LATOKES		
Feature	Advantages	
Rugged construction	Excellent durability for a long lifetime of use	
Up to 1 Watt rating	Good power handling	
Excellent VSWR	Well-matched for 50 $\Omega$ systems	
Flat attenuation	Good performance over the band.	

## Fixed Attenuator

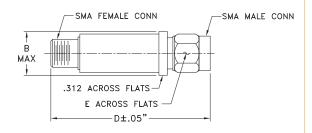
**VAT-30A+** 

#### **MAXIMUM RATINGS**

Operating Temperature	-45°C to 100°C		
Storage Temperature	-55°C to 100°C		

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

#### **OUTLINE DRAWING**

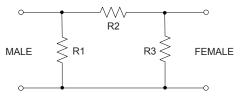


#### OUTLINE DIMENSIONS (Inch)

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

Note: Please refer to case style drawing for details

#### **ELECTRICAL SCHEMATIC**



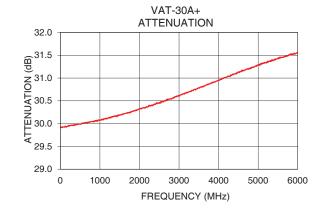
#### **ELECTRICAL SPECIFICATIONS AT 25°C**

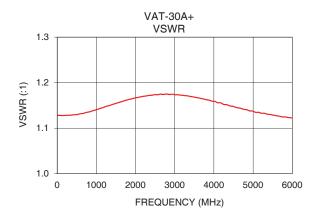
Parameter	Condition (MHz)	Min.	Тур.	Max.	Unit	
Frequency Range		DC	-	6000	MHz	
Attenuation <sup>1</sup> nominal <sup>3</sup>	10	-	30 ± 0.3	-	dB	
Attenuation Flatness <sup>2</sup>	DC-3000	-	0.7	-		
	3000-5000	-	0.7	-	JD.	
	5000-6000	-	0.3	-	dB	
	DC-6000	-	1.3	-		
	DC-3000	-	1.2	1.6		
VSWR	3000-5000	-	1.2	1.6	:1	
	5000-6000	-	1.3	-		
Input Power		-	-	0.4	W	

- 1. Attenuation varies by 0.3 dB max. over temperature.
- 2. Flatness = variation over band divided by 2.
- 3. Nominal attenuation at 10 MHz

#### TYPICAL PERFORMANCE DATA

I I PICAL PERFORMANCE DATA				
Frequency (MHz)	Attenuation (dB)	VSWR (:1)		
10	29.92	1.13		
100	29.92	1.13		
500	29.99	1.13		
900	30.07	1.14		
1000	30.08	1.14		
1400	30.17	1.15		
1500	30.19	1.15		
2000	30.33	1.17		
2500	30.46	1.17		
2800	30.54	1.17		
3000	30.61	1.17		
4000	30.94	1.16		
4500	31.13	1.15		
5000	31.29	1.14		
6000	31.55	1.12		





#### NOTES

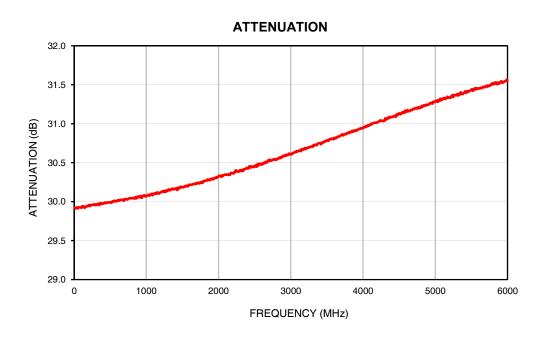
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

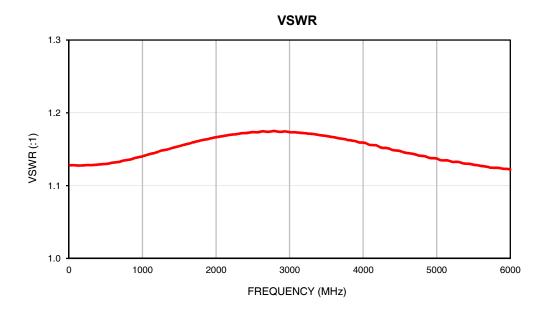
## Typical Performance Data

(MHz)         (dB)         (:1)           10         29.92         1.13           20         29.92         1.13           50         29.91         1.13           100         29.92         1.13           200         29.96         1.13           300         29.95         1.13           400         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1800         30.29         1.16     <	FREQ.	ATTENUATION	VSWR
10         29.92         1.13           20         29.91         1.13           50         29.91         1.13           100         29.92         1.13           200         29.96         1.13           300         29.95         1.13           400         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           2000         30.37         1.17           2100         30.34         1.17     <	(MHz)	(dB)	(:1)
20         29.92         1.13           50         29.91         1.13           100         29.92         1.13           200         29.96         1.13           300         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17	10	` ′	
50         29.91         1.13           100         29.92         1.13           200         29.96         1.13           300         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           2000         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17			
200         29.96         1.13           300         29.95         1.13           400         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           2000         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17 <td></td> <td></td> <td></td>			
300         29.95         1.13           400         29.97         1.13           500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.12         1.15           1400         30.17         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           2000         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2400         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17 <td>100</td> <td>29.92</td> <td>1.13</td>	100	29.92	1.13
400       29.97       1.13         500       29.99       1.13         600       30.02       1.13         700       30.03       1.13         800       30.05       1.14         900       30.07       1.14         1000       30.08       1.14         1100       30.10       1.14         1200       30.12       1.15         1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         3000       30.61       1.17         3100       3			
500         29.99         1.13           600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           1900         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17           2600         30.47         1.17           2800         30.52         1.17           3000         30.51         1.17<			
600         30.02         1.13           700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.14         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1900         30.29         1.16           1900         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17           2600         30.47         1.17           2800         30.52         1.17           3000         30.51         1.17           3000         30.65         1.17			
700         30.03         1.13           800         30.05         1.14           900         30.07         1.14           1000         30.08         1.14           1100         30.10         1.14           1200         30.12         1.15           1300         30.12         1.15           1300         30.12         1.15           1400         30.17         1.15           1500         30.19         1.15           1600         30.22         1.16           1700         30.24         1.16           1800         30.26         1.16           1800         30.29         1.16           1900         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17           2700         30.52         1.17           2800         30.47         1.17           3000         30.59         1.17           3000         30.61         1.1			
800       30.05       1.14         900       30.07       1.14         1000       30.08       1.14         1100       30.10       1.14         1200       30.12       1.15         1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2800       30.52       1.17         3000       30.52       1.17         3000       30.61       1.17         3000       30.61       1.17         3200       30.69       1.17         3400       30.75       1.17         3600       <			
1000       30.08       1.14         1100       30.10       1.14         1200       30.12       1.15         1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2800       30.52       1.17         3000       30.52       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3400       30.79       1.17         3600       30.82       1.17         3700			
1100       30.10       1.14         1200       30.12       1.15         1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         3000       30.65       1.17         3100       30.65       1.17         3200       30.69       1.17         3400       30.70       1.17         3400       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800	900	30.07	1.14
1200       30.12       1.15         1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3000       30.61       1.17         3400       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.16         3800       30.89       1.16         4000			
1300       30.14       1.15         1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3000       30.61       1.17         3400       30.70       1.17         3400       30.70       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.91       1.16         4000       30.94       1.16         4100			
1400       30.17       1.15         1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         4000       30.94       1.16         4100			
1500       30.19       1.15         1600       30.22       1.16         1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3400       30.70       1.17         3500       30.79       1.17         3600       30.79       1.17         3600       30.82       1.16         3800       30.89       1.16         4000       30.94       1.16         4000       31.02       1.15         4300			_
1600       30.22       1.16         1700       30.24       1.16         1800       30.29       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3400       30.70       1.17         3400       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         3900       30.91       1.16         4000       31.02       1.15         4300       31.02       1.15         4500			_
1700       30.24       1.16         1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         3000       30.59       1.17         3000       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.16         3800       30.85       1.16         3900       30.91       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.13       1.15         4500			
1800       30.26       1.16         1900       30.29       1.16         2000       30.33       1.17         2100       30.34       1.17         2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         3000       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3400       30.70       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         3900       30.91       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4500       31.13       1.15         4600			*****
2000         30.33         1.17           2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17           2600         30.47         1.17           2700         30.52         1.17           2800         30.54         1.17           2900         30.59         1.17           3000         30.61         1.17           3100         30.65         1.17           3200         30.69         1.17           3300         30.70         1.17           3400         30.75         1.17           3500         30.79         1.17           3600         30.82         1.17           3700         30.85         1.16           3800         30.89         1.16           3900         30.91         1.16           4000         30.94         1.16           4100         30.99         1.16           4200         31.02         1.15           4500         31.13	1800	30.26	
2100         30.34         1.17           2200         30.37         1.17           2300         30.40         1.17           2400         30.43         1.17           2500         30.46         1.17           2600         30.47         1.17           2700         30.52         1.17           2800         30.54         1.17           2900         30.59         1.17           3000         30.61         1.17           3100         30.65         1.17           3200         30.69         1.17           3400         30.75         1.17           3500         30.79         1.17           3600         30.82         1.17           3700         30.85         1.16           3800         30.89         1.16           3900         30.91         1.16           4000         30.94         1.16           4100         30.99         1.16           4200         31.02         1.15           4300         31.04         1.15           4400         31.09         1.15           4500         31.13	1900	30.29	1.16
2200       30.37       1.17         2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         3900       30.91       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700			
2300       30.40       1.17         2400       30.43       1.17         2500       30.46       1.17         2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.16         3800       30.85       1.16         3800       30.89       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700       31.19       1.14         4800       31.21       1.14         4900			
2400         30.43         1.17           2500         30.46         1.17           2600         30.47         1.17           2700         30.52         1.17           2800         30.54         1.17           2900         30.59         1.17           3000         30.61         1.17           3100         30.65         1.17           3200         30.69         1.17           3300         30.70         1.17           3400         30.75         1.17           3500         30.79         1.17           3600         30.82         1.17           3700         30.85         1.16           3800         30.89         1.16           3900         30.91         1.16           4000         30.94         1.16           4100         30.99         1.16           4200         31.02         1.15           4300         31.04         1.15           4500         31.13         1.15           4600         31.15         1.14           4700         31.19         1.14           4800         31.21			
2500         30.46         1.17           2600         30.47         1.17           2700         30.52         1.17           2800         30.54         1.17           2900         30.59         1.17           3000         30.61         1.17           3100         30.65         1.17           3200         30.69         1.17           3300         30.70         1.17           3400         30.75         1.17           3500         30.79         1.17           3600         30.82         1.17           3700         30.85         1.16           3800         30.89         1.16           3900         30.91         1.16           4000         30.94         1.16           4100         30.99         1.16           4200         31.02         1.15           4300         31.04         1.15           4500         31.13         1.15           4600         31.15         1.14           4700         31.19         1.14           4800         31.21         1.14           4900         31.24			****
2600       30.47       1.17         2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700       31.19       1.14         4800       31.21       1.14         4900       31.24       1.14         5000       31.29       1.14			
2700       30.52       1.17         2800       30.54       1.17         2900       30.59       1.17         3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700       31.19       1.14         4800       31.21       1.14         4900       31.24       1.14         5000       31.29       1.14			
2900         30.59         1.17           3000         30.61         1.17           3100         30.65         1.17           3200         30.69         1.17           3300         30.70         1.17           3400         30.75         1.17           3500         30.79         1.17           3600         30.82         1.17           3700         30.85         1.16           3800         30.89         1.16           4000         30.94         1.16           4000         30.99         1.16           4200         31.02         1.15           4300         31.04         1.15           4500         31.13         1.15           4600         31.15         1.14           4700         31.19         1.14           4800         31.21         1.14           4900         31.24         1.14           5000         31.29         1.14			
3000       30.61       1.17         3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         3900       30.91       1.16         4000       30.94       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700       31.19       1.14         4800       31.21       1.14         4900       31.24       1.14         5000       31.29       1.14	2800	30.54	
3100       30.65       1.17         3200       30.69       1.17         3300       30.70       1.17         3400       30.75       1.17         3500       30.79       1.17         3600       30.82       1.17         3700       30.85       1.16         3800       30.89       1.16         4000       30.91       1.16         4100       30.99       1.16         4200       31.02       1.15         4300       31.04       1.15         4400       31.09       1.15         4500       31.13       1.15         4600       31.15       1.14         4700       31.19       1.14         4800       31.21       1.14         4900       31.24       1.14         5000       31.29       1.14	2900	30.59	1.17
3200     30.69     1.17       3300     30.70     1.17       3400     30.75     1.17       3500     30.79     1.17       3600     30.82     1.17       3700     30.85     1.16       3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3300     30.70     1.17       3400     30.75     1.17       3500     30.79     1.17       3600     30.82     1.17       3700     30.85     1.16       3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3400     30.75     1.17       3500     30.79     1.17       3600     30.82     1.17       3700     30.85     1.16       3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3500     30.79     1.17       3600     30.82     1.17       3700     30.85     1.16       3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3600     30.82     1.17       3700     30.85     1.16       3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3800     30.89     1.16       3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
3900     30.91     1.16       4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14	3700	30.85	
4000     30.94     1.16       4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14	3800	30.89	1.16
4100     30.99     1.16       4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4200     31.02     1.15       4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4300     31.04     1.15       4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4400     31.09     1.15       4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4500     31.13     1.15       4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4600     31.15     1.14       4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4700     31.19     1.14       4800     31.21     1.14       4900     31.24     1.14       5000     31.29     1.14			
4900 31.24 1.14 5000 31.29 1.14	4700	31.19	
5000 31.29 1.14			
5100 31.32 1.13 5200 31.33 1.13	5100 5200	31.32 31.33	1.13 1.13
5300 31.38 1.13			
5400 31.40 1.13			
5500 31.44 1.13			
5800 31.51 1.12		-	
6000 31.55 1.12	6000	31.55	1.12



## Typical Performance Curves



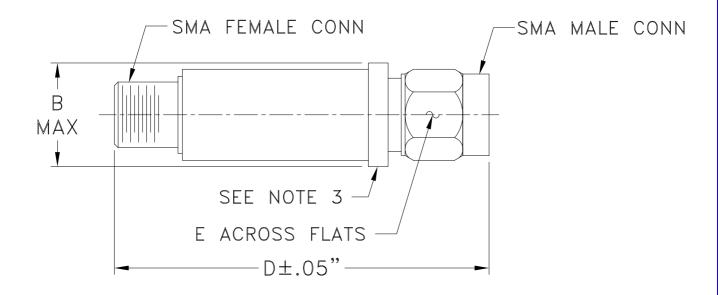


## Case Style

FF

**FF704** 

### **Outline Dimensions**



CASE #.	A	В	C	D	Е	WT GRAMS
FF704		.410		1.43	.312	10.0
11704		(10.41)		(36.32)	(7.92)	10.0

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

#### **Notes:**

Case material: Stainless steel.
 Case finish: Gold plated.

3. Round Flange may have .312 Across Flats in some models.





P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

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**ENV28T6** 



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.

Test/Inspection Condition	Reference/Spec	
-45° to 100° C Ambient Environment	Individual Model Data Sheet	
-55° to 100° C Ambient Environment	Individual Model Data Sheet	
100,000 Feet	MIL-STD-202, Method 105, Condition D	
90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103	
-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B	
20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D	
100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I	
	-45° to 100° C Ambient Environment  -55° to 100° C Ambient Environment  100,000 Feet  90% RH, 65°C Units may require bake-out after humidity to restore full performance.  -65° to 125°C, 5 cycles  20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	

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