

# RF AMPLIFIER

## MODEL *TM5109*

Available as: TM5109, 4 Pin TO-8 (T4)  
 TN5109, 4 Pin Surface Mount (SM3)  
 FP5109, 4 Pin Flatpack (FP4)  
 BX5109, Connectorized Housing (H1)

### Features

- Medium Gain: 10.5 dB Typical
- Medium Output Power: +13.0 dBm Typical
- Operating Temp. - 55 °C to +85 °C
- Environmental Screening Available

### Specifications

CHARACTERISTIC	TYPICAL Ta= 25 °C	MIN/MAX Ta = -55 °C to +85 °C
Frequency	10-500 MHz	10-500 MHz
Gain (dB)	10.5	9.5 Min.
Power @ 1 dB Comp. (dBm)	+13	+12.0 Min
Reverse Isolation (dB)	-24	-23 Max
VSWR In	<1.5:1	2.0:1 Max.
Out	<1.5:1	2.0:1 Max.
Noise Figure (dB)	<4.0	5.0 Max.
Power Vdc	+15	+15
mA	35	38 Max.

Note: Care should always be taken to effectively ground the case of each unit.

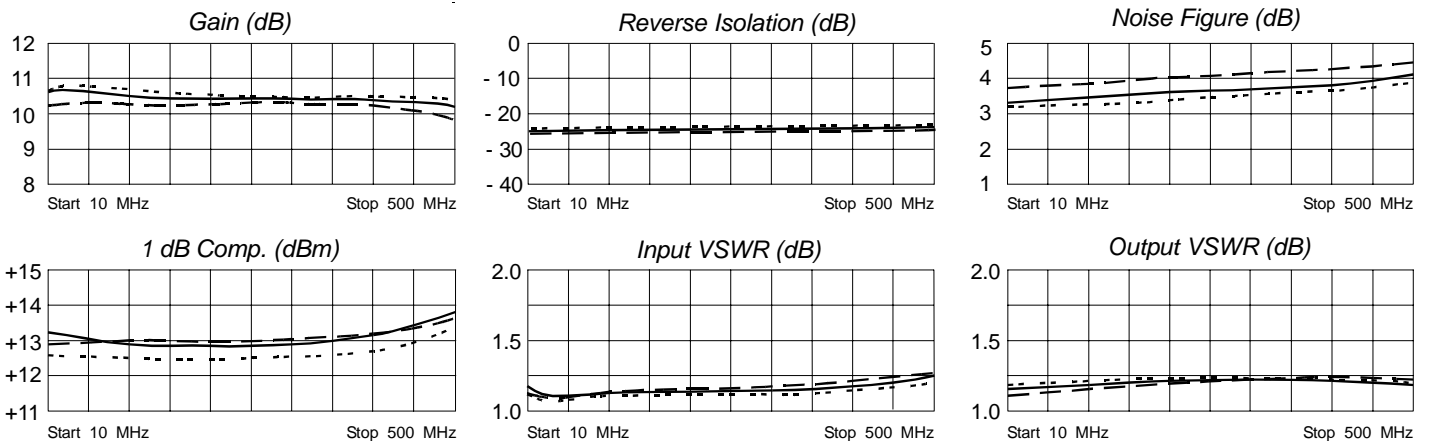
### Typical Intermodulation Performance at 25 ° C

Second Order Harmonic Intercept Point..... +45 dBm (Typ.)  
 Second Order Two Tone Intercept Point..... +40 dBm (Typ.)  
 Third Order Two Tone Intercept Point..... +28 dBm (Typ.)

### Maximum Ratings

Ambient Operating Temperature ..... -55°C to + 100 °C  
 Storage Temperature ..... -62°C to + 125 °C  
 Case Temperature ..... + 125 °C  
 DC Voltage ..... + 18Volts  
 Continuous RF Input Power ..... + 13 dBm  
 Short Term RF Input Power.... 100 Milliwatts (1 Minute Max.)  
 Maximum Peak Power..... 0.2 Watt (3 µsec Max.)

### Typical Performance Data



Legend ——— + 25 °C - - - - + 85 °C ······ -55 °C

### Linear S-Parameters

FREQ. MHz	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
5	.11	- 61	3.35	-168	.05	-167	.09	- 22
10	.06	- 54	3.42	-176	.05	-176	.08	- 13
50	.04	- 30	3.39	165	.05	163	.08	- 22
100	.03	- 35	3.39	148	.05	145	.08	- 42
200	.04	- 54	3.40	116	.06	109	.08	- 73
300	.06	- 98	3.49	82	.06	77	.09	-101
400	.08	-146	3.51	44	.06	45	.07	-122
500	.13	162	3.34	3	.06	11	.06	-115
600	.18	104	2.89	- 41	.06	- 25	.08	- 88

