

RF AMPLIFIER

MODEL *TM6509*

Available as: TM6509, 4 Pin TO-8 (T4)
 TN6509, 4 Pin 0.450" Sq. Surface Mount (SM3)
 PN6509, 4 Pin 0.375" Sq. Surface Mount (SM14)
 FP6509, 4 Pin 0.500" Sq. Flatpack (FP4)
 BX6509, SMA Connectorized Housing (H1)

Features

- High Output Power: +23 dBm Typical
- High IP3: +36 dBm Typical
- Operating Temp. -55 °C to +85 °C
- Environmental Screening Available

Typical Intermodulation Performance at 25 °C

Second Order Harmonic Intercept Point +56 dBm (Typ.)
 Second Order Two Tone Intercept Point +50 dBm (Typ.)
 Third Order Two Tone Intercept Point +36 dBm (Typ.)

Specifications

CHARACTERISTIC	TYPICAL Ta= 25 °C	MIN/MAX Ta = -55 °C to +85 °C
Frequency	5 MHz - 500 MHz	5 MHz - 500 MHz
Gain (dB)	14.5	13.0 Min.
Power @ 1 dB Comp. (dBm)	+23	+20 Min.
Reverse Isolation (dB)	-18	-15 Max.
VSWR In	<1.4:1	2.0:1 Max.
Out	<1.2:1	2.0:1 Max.
Noise Figure (dB)	4.6	6.0 Max.
Power Vdc	+15	+15
mA	88	95 Max.

Maximum (No Damage) Ratings

Ambient Operating Temperature -55°C to +100 °C
 Storage Temperature -62°C to +125 °C
 Case Temperature +125 °C
 DC Voltage +18 Volts
 Continuous RF Input Power +18 dBm*
 Short Term RF Input Power 100 mW (1 Minute Max.)
 Maximum Peak Power 0.5 Watt (3 µsec Max.)

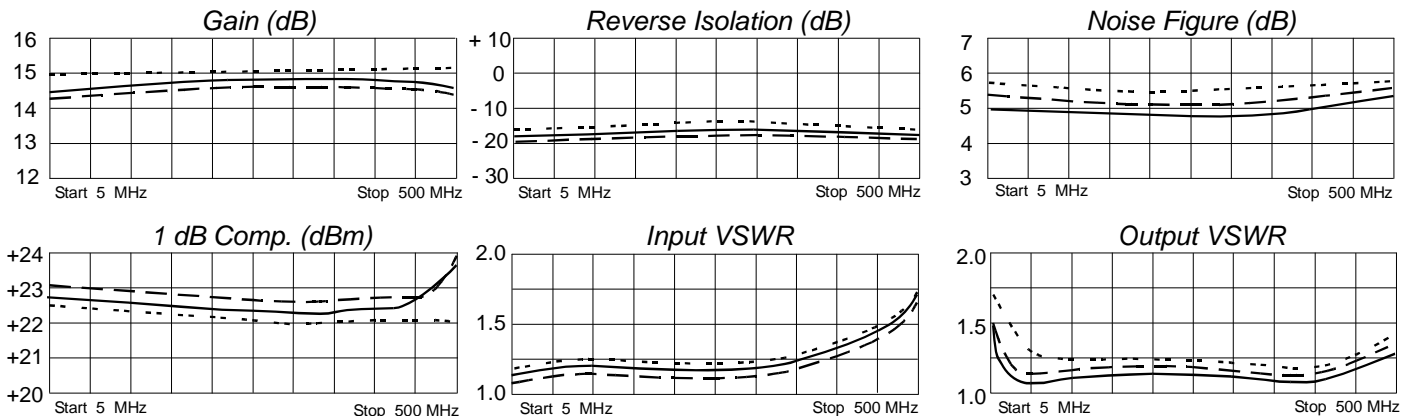
Transistor Junction Temp (TM6509)..... Thermal rise 31 °C
 Theta jc (TM6509)..... 54 °C

MTBF Calculation for Ground Benign Environment
 @ 25 °C 9,248,445 Hrs

* 50 Ohm Output Load

Note: Care should always be taken to effectively ground the case of each unit.
 Revision 6/3/2013

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	.23	-41	5.86	-163	.08	19	.27	86
100	.13	80	5.46	159	.11	3	.05	23
200	.40	24	5.51	137	.12	3	.04	23
300	.58	-31	5.50	114	.14	2	.04	45
400	.10	-91	5.53	90	.15	-1	.08	71
500	.20	-137	5.45	64	.17	-9	.17	66



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