

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

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.

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

+56 dBm (Typ.)

Second Order Two Tone Intercept Point

+50 dBm (Typ.)

Third Order Two Tone Intercept Point

+36 dBm (Typ.)

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 μ sec Max.)

Transistor Junction Temp (TM6509) Thermal rise 31 °C

Theta jc (TM6509) 54 °C

**MTBF Caluclation for Ground Benign
Environement @ 25°C**

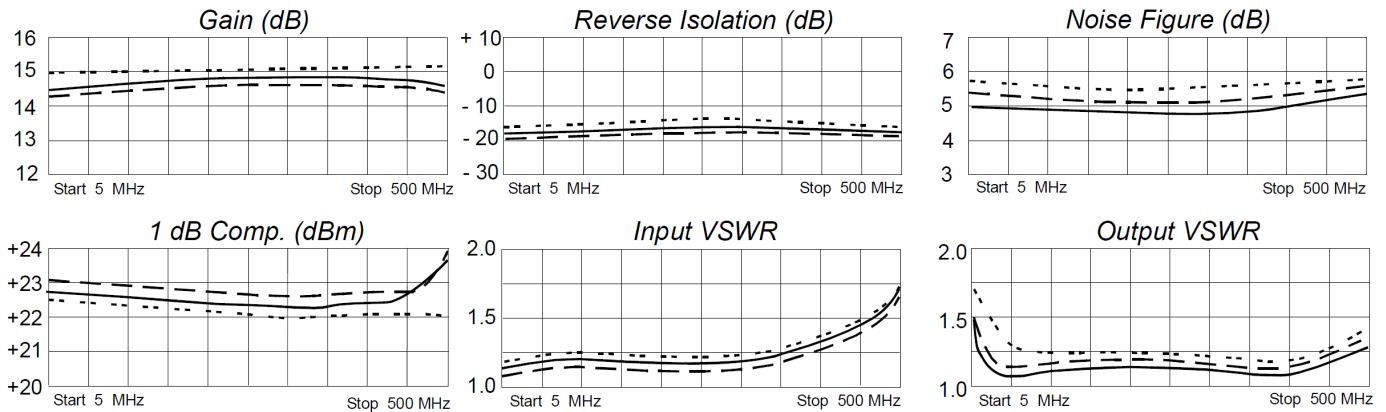
9,248,445 Hrs

* 50 Ohm Output Load

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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