



UTO/UTC 572 Series
Thin-Film Cascadable Amplifier
50 to 500 MHz

T-74-09-01

FEATURES

- Frequency Range: 50 to 500 MHz
- High Reverse Isolation: 50 dB
- Low VSWR
- Temperature Compensated

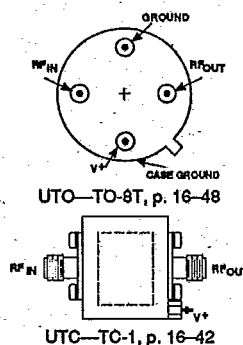
APPLICATIONS

- IF/RF Amplification
- Pre-Mixer RF Stage
- Post LO Amplifier Stage

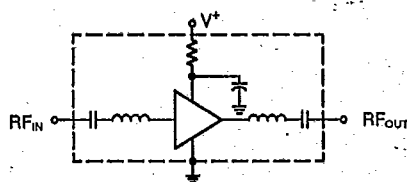
DESCRIPTION

The 572 Series is a medium-gain bipolar RF amplifier that uses resistive feedback and active bias for temperature compensation and increased immunity to bias voltage variations. Built on a thin-film substrate, this

cascode amplifier is specially designed for high isolation applications. The 572 Series amplifiers are available in either the TO-8 hermetic case or connected TC-1 package.

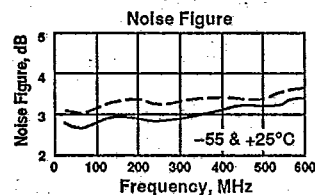
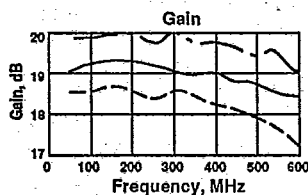
**ELECTRICAL SPECIFICATIONS** (Measured in a 50-ohm system @ +15 VDC nominal unless otherwise noted)

Symbol	Characteristic	Typical T _c = 25°C	Guaranteed Specifications		Unit
			T _c = 0° to 50°C	T _c = -55° to +85°C	
BW	Frequency Range	50-500	50-500	50-500	MHz
GP	Small Signal Gain (Min.)	18.5	18.0	17.0	dB
—	Gain Flatness (Max.)	±0.3	±0.5	±1.0	dB
NF	Noise Figure (Max.)	3.0	3.5	3.7	dB
—	Reverse Isolation	50	45	45	dB
P _{1dB}	Power Output @ +1 dB Compression (Min.)	+12.0	+11.0	+10.0	dBm
—	Input VSWR (Max.)	<1.5:1	2.0:1	2.0:1	—
—	Output VSWR (Max.)	<1.5:1	2.0:1	2.0:1	—
IP ₃	Two Tone 3rd Order Intercept Point	+24.0	—	—	dBm
IP ₂	Two Tone 2nd Order Intercept Point	+34.0	—	—	dBm
HP ₂	One Tone 2nd Harmonic Intercept Point	+42.0	—	—	dBm
I _b	DC Current	32	—	—	mA

SCHEMATIC**TYPICAL PERFORMANCE OVER TEMPERATURE**

(@ +15 VDC unless otherwise noted)

KEY: +25°C ———
+85°C - - - - -
-55°C ·····

**MAXIMUM RATINGS**

DC Voltage	17 Volts
Continuous RF Input Power	+13 dBm
Operating Case Temperature	-55°C to +125°C
Storage Temperature	-62°C to +150°C
"R" Series Burn-In Temperature	+125°C

THERMAL CHARACTERISTICS*

θ _{JA}	105/105°C/W
Active Transistor Power Dissipation	150/180 mW
Junction Temperature Above Case Temperature	16/19°C
MTBF (MIL-HDBK-217E, A _{UP} @ 90°C)	539,400 Hrs.

*For further information, see High Reliability section, p. 17-2.

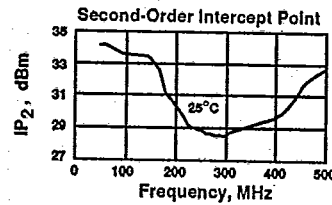
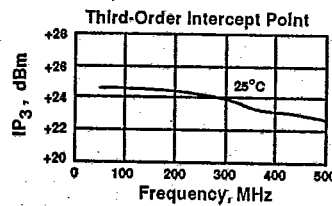
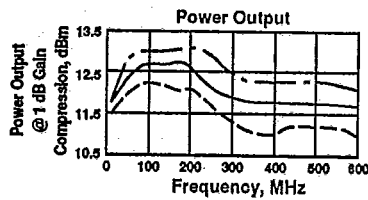
WEIGHT: (typical) UTO—2.1 grams; UTC—21.5 grams

Avantek, Inc. • 481 Cottonwood Drive, Milpitas, CA 95035 • Contact your local representative, distributor or field sales office for further information. Listings are in the back of this DataBook.

UTO/UTC 572 Series
Thin-Film Cascadable Amplifier

TYPICAL PERFORMANCE OVER TEMPERATURE (continued)

T-74-09-01



AUTOMATIC NETWORK ANALYZER MEASUREMENTS (Typical production unit @ +25°C ambient)

NUMERICAL READINGS

BIAS = 15.00 VOLTS

FREQ MHz	VSWR IN	GAIN dB	PHASE DEG	PHASE DEV	GPDEL ns	VSWR OUT	ISOL dB
100.0	1.15	19.1	132.7	-.30	—	1.10	58.6
150.0	1.18	19.1	105.8	-.45	1.48	1.06	55.5
200.0	1.21	19.1	79.6	.10	1.47	1.08	53.0
250.0	1.23	19.0	52.9	.14	1.48	1.12	52.3
300.0	1.25	18.9	26.2	.19	1.47	1.17	51.3
350.0	1.25	18.8	-.1	.64	1.47	1.22	50.4
400.0	1.24	18.8	-26.7	.68	1.50	1.29	50.2
450.0	1.24	18.7	-54.0	.23	1.54	1.37	50.0
500.0	1.29	18.6	-82.2	-1.22	1.57	1.45	49.8

S-PARAMETERS

BIAS = 15.00 VOLTS

FREQ MHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	Mag	Ang	dB	Ang	dB	Ang	Mag	Ang
100.00	.077	-62.6	19.4	141.9	-58.3	51.3	.044	31.3
200.00	.101	-109.4	19.3	95.6	-53.9	35.7	.047	-99.7
300.00	.112	-150.2	19.0	49.5	-51.0	12.0	.089	-159.3
400.00	.100	-157.4	18.9	3.0	-49.7	-11.8	.136	155.1
500.00	.109	72.9	18.8	-46.4	-49.4	-40.1	.191	113.4
600.00	.235	-4.9	18.3	-100.8	-49.6	-75.8	.254	70.4
700.00	.455	-58.6	16.6	-158.6	-48.7	-73.8	.282	25.3
800.00	.662	-103.2	13.5	148.1	-47.2	-23.9	.263	-10.4
900.00	.811	-140.0	10.2	98.4	-46.3	-67.4	.269	-33.3
1000.00	.870	-171.7	6.2	53.8	-46.4	-96.6	.309	-56.7
1100.00	.892	162.7	2.3	13.2	-47.0	-113.2	.351	-82.3
1200.00	.891	140.4	-1.2	-23.4	-48.4	-123.8	.389	-108.5
1300.00	.893	120.8	-4.9	-56.9	-50.5	-135.8	.423	-133.6
1400.00	.883	102.3	-8.4	-89.3	-53.9	-147.4	.450	-158.3
1500.00	.883	84.5	-11.6	-119.7	-57.1	-160.2	.479	178.7