



UTL-503
Thin-Film Limiting Amplifier
5 to 500 MHz

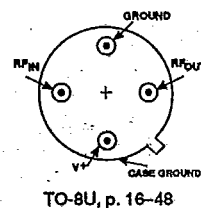
T-74-09-01

FEATURES

- Frequency Range: 5 to 500 MHz
- Output Power Flatness:
±0.3 dB (Typ)
- Input Power Range: 13.0 dB
- Low Phase Shift Variation
- High Even-Harmonic Suppression

APPLICATIONS

- All FM Systems
- Communications
- Telemetry
- Radar Warning
- Measurement Systems

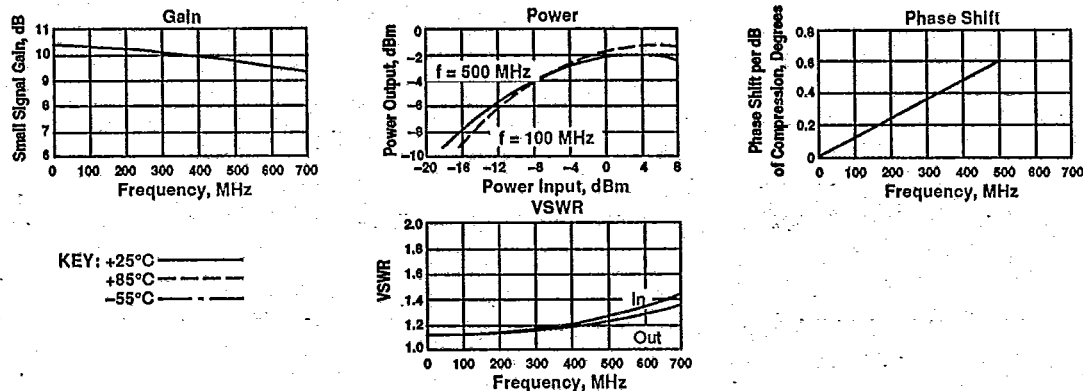
**DESCRIPTION**

The UTL-503 is a single-stage bipolar RF limiting amplifier using a single polarity supply with 9.5 dB (typ) of small signal gain. Emitter-coupled pair design provides even-harmonic

suppression and low AM-to-PM conversion. The RF signal is coupled through the amplifier by means of internal blocking capacitors.

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

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	5-500	5-500	5-500	MHz
GP	Small Signal Gain (Min.)	9.5	8.0	7.0	dB
—	Saturated Output Power (Min.) P _{IN} = 0 dBm	-2.0	-4.0	-4.0	dBm
—	Saturated Flatness (Max.) P _{IN} = 0 dBm	±0.3	±1.0	±1.0	dB
—	VSWR Input (Max.)	1.3:1	1.5:1	1.5:1	—
—	VSWR Output (Max.)	1.2:1	1.5:1	1.5:1	—
—	Even Harmonic Suppression (Min.) @ P _{IN} = 7 dBm	30.0	20.0	20.0	dBc
NF	Noise Figure (Max.)	8.6	10.0	10.5	dB
I _b	Bias Current @ +15 VDC	20	—	—	mA

TYPICAL PERFORMANCE AT 25°C TEMPERATURE (@+15 VDC unless otherwise noted)**MAXIMUM RATINGS**

DC Voltage	+17 Volts
Continuous RF Input Power	+15 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}	240°C/W
Active Transistor Power Dissipation	100 mW
Junction Temperature Above Case Temperature	24°C

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

WEIGHT: (typical) 2.1 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 Data Book.