



UTL-1001/1002
Voltage Controlled Signal Limiter
5 to 1000 MHz

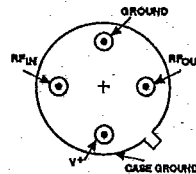
T-74-13-01

FEATURES

- AM to PM Conversion Less Than 0.2 degrees/dB
- 0 to -13 dBm Programmable Output
- VSWR less than 2.0:1

APPLICATIONS

- Protection for Detectors, Mixers, and Amplifiers
- Cascadable Gain Control
- EW Receiver Circuits
- Wideband System Protection



TO-8U, p. 16-48

DESCRIPTION

The UTL Series consists of two voltage controlled signal limiters which cover the 5 to 1000 MHz frequency range. These thin-film limiters feature voltage programmable output levels with input levels as high as +26 dBm. They have low VSWR, low insertion loss, excellent second- and third-har-

monic suppression, and very low AM-to-PM conversion. Recovery from fully saturated input levels is less than 50 nanoseconds. The UTL models are provided in the TO-8 package.

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

Symbol	Characteristic	Typical T ₀ = 25°C	Guaranteed Specifications		Unit
			T ₀ = 0° to 50°C	T ₀ = -55° to +85°C	
BW	Frequency Range				
	UTL-1001	50-1000	50-1000	50-1000	MHz
	UTL-1002	5-1000	5-1000	5-1000	MHz
—	Output Level at Limiting Threshold (1 dB Compression)				
	+20 volts bias	0	+2	—	dBm
	+15 volts bias	-2	0	—	dBm
	+10 volts bias	-6	-4	—	dBm
	+5 volts bias	-13	—	—	dBm
—	Maximum Output Limiting Level (+20 dBm Input)				
	+20 volts bias	0	+2	—	dBm
	+15 volts bias	-1	+1	—	dBm
	+10 volts bias	-4	-2	—	dBm
	+5 volts bias	-9	—	—	dBm
—	Maximum Insertion Loss at 500 MHz @ -20 dBm input				
	+20 volts bias	1.6	2.0	—	dB
	+15 volts bias	1.9	2.4	—	dB
	+10 volts bias	2.5	3.0	—	dB
	+5 volts bias	4.3	—	—	dB
—	Maximum Insertion Loss at 1000 MHz				
	+20 volts bias	2.0	2.5	—	dB
	+15 volts bias	2.5	3.0	—	dB
	+10 volts bias	3.1	3.7	—	dB
	+5 volts bias	5.2	—	—	dB
—	Input VSWR				
	P _{IN} < +20 dBm	—	—	2.0:1	
—	Output VSWR				
	P _{IN} < -10 dBm	—	—	2.0:1	
—	Output Level Variation vs. Temperature	—	—	±1.0	dB
—	Bias Current				
	At +20 VDC	10	—	—	mA
	At +25 VDC	7	—	—	mA

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.

UTL-1001/1002

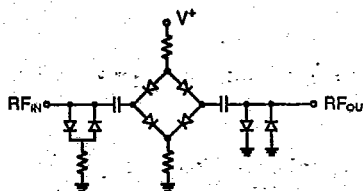
Voltage Controlled Signal Limiter

T-74-13-01

MAXIMUM RATINGS

DC Voltage	+25.0 Volts
Continuous RF Input Power	+26.0 dBm
Peak Input Power (3 μ sec Max.)	+30 dBm
Operating Case Temperature	-54°C to +125°C
Storage Temperature	-62°C to +150°C
"R" Series Burn-In Temperature	+125°C

SCHEMATIC



TYPICAL PERFORMANCE AT 25°C TEMPERATURE (at +15 VDC unless otherwise noted)

Bias Voltage: 5V ————
 10V - - - - -
 15V
 20V ————

