



**UDL-502**  
Thin-Film Limiting Amplifier  
5 to 500 MHz

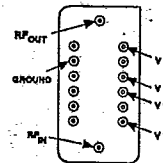
T-74-09-01

**FEATURES**

- Frequency Range: 5 to 500 MHz
- Output Power Flatness:  $\pm 0.5$  dB (Max.)
- Input Power Range: 30.0 dB
- Low Phase Shift Variation
- High Even-Harmonic Suppression

**APPLICATIONS**

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



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**DESCRIPTION**

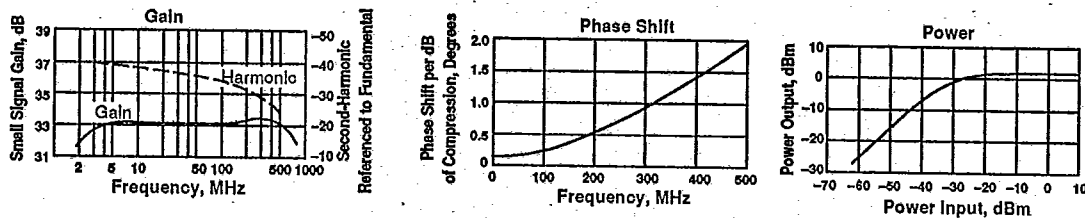
The UDL-502 is a three-stage bipolar RF limiting amplifier with 32 dB (typ) of small signal gain. Emitter-coupled pair design provides for even-harmonic suppression and low AM-to-PM

conversion. The RF signal is coupled through the amplifier by means of internal blocking capacitors.

**ELECTRICAL SPECIFICATIONS** (Measured in a 50-ohm system @  $\pm 15$  VDC and  $-15$  VDC nominal)

Symbol	Characteristic	Typical $T_c = 25^\circ\text{C}$	Guaranteed Specifications		Unit
			$T_c = 0^\circ$ to $50^\circ\text{C}$	$T_c = -55^\circ$ to $+85^\circ\text{C}$	
BW	Frequency Range	5-500	5-500	5-500	MHz
GP	Small Signal Gain (Min.)	32.0	30.0	—	dB
—	Saturated Output Power (Min.)	-2.0	-4.0	—	dBm
—	Saturated Flatness (Max.)	—	$\pm 0.5$	—	dB
—	VSWR Input/Output (Max.)	—	2.0:1	—	—
—	Even-Harmonic Suppression @ $P_{IN} = -50$ to $+7$ dBm	—	15.0	—	dBc
NF	Noise Figure (Max.)	—	11.0	—	dB
$I_b$	Bias Current	—	—	—	mA
	+15 VDC	60	—	—	mA
	-15 VDC	60	—	—	mA

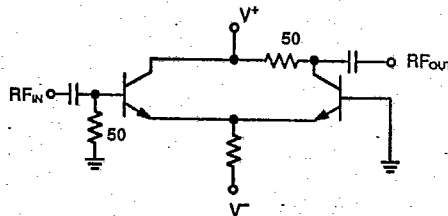
**TYPICAL PERFORMANCE AT 25°C TEMPERATURE** (@  $\pm 15$  VDC unless otherwise noted)



**MAXIMUM RATINGS**

DC Voltage	+17 Volts
Continuous RF Input Power	+15 dBm
Operating Case Temperature	$-55^\circ\text{C}$ to $+85^\circ\text{C}$
Storage Temperature	$-62^\circ\text{C}$ to $+150^\circ\text{C}$
"R" Series Burn-In Temperature	$+85^\circ\text{C}$

**SCHEMATIC** (1 of 3 identical stages shown)



**WEIGHT:** (typical) 5.7 grams