



**PPL-504**  
Surface-Mount Limiting Amplifier  
10 to 1000 MHz

T-74-09-01

**FEATURES**

- Frequency Range: 10 to 1000 MHz
- Up to 55 dB Compression Range
- Low Phase Shift
- Surface Mount Package

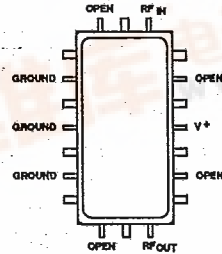
**APPLICATIONS**

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

**DESCRIPTION**

The PPL-504 is a four-stage bipolar RF limiting amplifier in a PlanarPak surface mount package using a single polarity supply with a compression range of up to 55 dB. 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.



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

Symbol	Characteristic	Typical T <sub>c</sub> = 25°C	Guaranteed Specifications		Unit
			T <sub>c</sub> = 0° to 50°C	T <sub>c</sub> = -55° to +85°C	
BW	Frequency Range	10-1000	10-1000	10-1000	MHz
—	Compression Range @ P <sub>OUT</sub> = ±0.5 dB				
	10-250 MHz	-52 to +10	-45 to +10	-45 to +10	dBm
	250-500 MHz	-48 to +10	-40 to +10	-40 to +10	
	500-1000 MHz	-32 to +10	-25 to +10	-25 to +10	
—	Saturated Power @ P <sub>IN</sub> = 0 dBm				
	10-1000 MHz (Min.)	0	-4	-4	dBm
—	Saturated Flatness @ P <sub>IN</sub> = 0 dBm				
	10-500 MHz (Max.)	±0.2	±0.4	±0.5	dB
	10-1000 MHz (Max.)	±0.6	±0.8	±1.0	
—	VSWR Input/Output				
	10-500 MHz (Max.)	1.3/1.3:1	1.5/1.5:1	2.0/2.0:1	—
	500-1000 MHz (Max.)	1.6/2.0:1	2.0/2.2:1	2.0/2.5:1	
—	Output Noise Power, 1 MHz BW				
	10-250 MHz (Max.)	-43	-41	-38	dBm
	250-500 MHz (Max.)	-48	-44	-42	
	500-1000 MHz (Max.)	-57	-46	-48	
—	Phase Shift per dB of Compression per MHz, deg.				
	10-1000 MHz	0.0035	—	—	
—	Even Harmonic Suppression @ P <sub>IN</sub> = 0 dBm				
	250 MHz (Min.)	-26	-20	-20	dBc
	500 MHz (Min.)	-18	-13	-13	
	1000 MHz (Min.)	-10	-7	-6	
—	Odd Harmonic Suppression, @ P <sub>IN</sub> = 0 dBm				
	250 MHz (Min.)	-10	-8	-7	dBc
	500 MHz (Min.)	-12	-10	-8	
NF	Noise Figure				
	250 MHz	8	—	—	dB
	500 MHz	9	—	—	
	1000 MHz	10	—	—	
I <sub>b</sub>	DC Current (@ Rated Voltage)	+80	—	—	mA

**MAXIMUM RATINGS**

DC Voltage	+17 Volts	"R" Series Burn-In Temperature	+125°C
Continuous RF Input Power	+15 dBm	Temperature Rise (Junction Above Case)	20°C
Operating Case Temperature	-55°C to +125°C	Thermal Resistance (Junction-Case)	225°C/W
Storage Temperature	-62°C to +125°C	Transistor Power Dissipation	90 mW

**WEIGHT: (typical) 1.1 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.



TYPICAL PERFORMANCE OVER TEMPERATURE (@+15 VDC unless otherwise noted)

