

GaAs FET THIN-FILM LIMITING AMPLIFIERS

The AvanteK LMT/LWT series Limiting Wideband Amplifiers combine the proven circuit design and thin-film gold construction of the AvanteK AMT/AWT series of Low Noise Amplifiers with a GaAs FET output limiting stage. Available in the 0.5-2.0 through 6-18 GHz frequency bands, LMT/LWT series amplifiers offer nominal 35 dB and 70 dB of small signal gain combined with saturated power outputs that remain within a very narrow window for an extremely wide range of input signal levels. Other important features

include excellent full-band saturated power flatness, low small signal noise figure, VSWR and harmonics, and an integral voltage regulator for reliable operation from a +12 to +15 VDC unregulated power source.

To complement its performance features, the LMT/LWT series amplifier is packaged in a compact, hermetically welded aluminum case. This makes the LMT/LWT series amplifier the ideal choice for incorporation into the latest generation of compact, lightweight ECM/EW systems.

"30" Series; 35 dB Small Signal Gain

Guaranteed Specifications @ 25°C Case Temperature

PC4

Model	Frequency Response (GHz) Minimum	Small Signal Gain (dB)		Gain Flatness (±dB) Maximum	Saturated Output Power (dBm)		Noise Figure (dB) Maximum	VSWR		Input Power		Case Type
		Minimum	Maximum		Min.	Max.		Maximum In	Maximum Out	Voltage (VDC)	Current (mA) Maximum	
(I) LWT-2034	0.5-2	35	40	1.5	+3	+7	3.5	2.0	2.0	+12	250	IS4
(U) LMT-4035	2-4	35	40	1.5	+7	+11	3.0	2.0	2.0	+12	300	IS6
(I) LWT-6034	2-6	35	40	1.5	+14	+18	4.0	2.0	2.0	+12	300	IC4
(U) LWT-8035	2-8	35	40	1.5	+16	+20	4.0	2.0	2.0	+12	450	IC6
(U) LMT-8033	4-8	35	40	1.5	+14	+17	4.5	2.0	2.0	+12	300	IC4
(U) LMT-12436	7-12.4	35	40	1.5	+14	+19	5.5	2.0	2.0	+12	400	IX6
(U) LMT-18036	12-18	35	40	1.5	+14	+19	6.0	2.0	2.0	+12	400	IX6
(U) LWT-18036	8-18	35	40	1.5	+14	+19	6.0	2.0	2.0	+12	400	IX6
(N) LWT-18636	6-18	35	40	1.5	+14	+19	6.0	2.0	2.0	+12	400	IX6

"40" Series; Nominal 70 dB Small Signal Gain

Guaranteed Specifications -54°C to +100°C Case Temperature

Model	Frequency Response (GHz) Maximum	Input Signal Range (dBm) Maximum	Saturated Output Power Range (dBm)		VSWR		Input Power		Case Type
			Min.	Max.	Maximum In	Maximum Out	Voltage (VDC)	Current (mA) Maximum	
(U) LWT-2046	0.5-2	-61 to +20	+3	+7	2.0	2.0	+12	600	LS12
(I) LMT-4046	2-4	-57 to +20	+7	+11	2.0	2.0	+12	700	LS12
(U) LWT-6045	2-6	-50 to +20	+14	+18	2.0	2.0	+12	600	IC6
(U) LWT-8046	2-8	-55 to +20	+16	+20	2.0	2.0	+12	900	LC12
(U) LMT-8045	4-8	-50 to +20	+14	+17	2.0	2.0	+12	625	IC6
(U) LMT-12448	7-12.4	-50 to +20	+14	+19	2.0	2.0	+12	900	LX16
(U) LMT-18048	12-18	-50 to +20	+14	+19	2.0	2.0	+12	900	LX16
(U) LWT-18048	8-18	-50 to +20	+14	+19	2.0	2.0	+12	900	LX16
(N) LWT-18648	6-18	-50 to +20	+14	+19	2.0	2.0	+12	900	LX16

(I)—Improved Specifications (no change to existing model number)—Fall 1987

(N)—New Product Offering—Fall 1987

(U)—Updated Model Number With Improved Specifications—Fall 1987

Other Specifications—Both "30" and "40" Series

- Power output for 1 dB gain compression is a maximum of 4 dB below Saturated Power Output at any frequency.
- Saturated Power Flatness is 2.0 dB p-p, maximum.
- Saturated Power variation over temperature is 1.5 dB p-p, maximum.
- Maximum Input Power without damage: +20 dBm (CW).
- Harmonics: -9 dBc maximum (-6 dBc 2nd Harmonic, -8 dBc 3rd Harmonic—LWT-2034, LWT-2046)
- Pulse Response: Overshoot, 0.25 dB maximum.
Settling time, 25 ns maximum.
Recovery time, 100 ns maximum.
- Small Signal Suppression: 3 dB minimum.
- AM/PM Conversion: 5°/dB maximum.
- Output Noise Power will be less than P_{SAT}(Min) -6 dB for the "40" series.
- "30" and "40" series amplifiers contain an integral voltage regulator. The input voltage can be +12 to +15 VDC with 3% maximum ripple. All units also contain overvoltage and reverse polarity protection to ±25 VDC. Contact your AvanteK representative for operation outside these parameters.