

# Microwave amplifiers

Labtech Microwave has many years of proven technical experience in producing a wide range of high quality microwave amplifiers. Core products include low-noise multioctave broadband designs with gains up to 70dB; we also have proven capability in producing circuits for high frequency applications up to Ka band as well as medium power and limiting amplifiers. Foremost amongst Labtech microwave capabilities is for the provision of amplifiers to fill obsolescent, specialist and custom requirements. Typical customisation will include integral limiters, equalizers, detectors, adjustable attenuation and temperature compensation. Designs can also be customised to provide wave guide input, low phase noise and gain matching of units. Devices can be packaged in a hermetic or non-hermetic metal box or can be mounted on carriers suitable for inclusion directly in the customer's application circuitry.

Our amplifier product range:

- Broadband microwave amplifiers 2–6 GHz, 2– 8GHz and 6–18GHz
- Narrowband low noise amplifiers
- Narrowband TWT driver amplifiers
- 2–18 GHz gain modules

All amplifier modules are built in a purpose built class 10,000 clean room which houses thin film processing, automatic chip & wire assembly; alignment, test and laser welding for hermetic sealing. All components can be environmentally tested and in accordance with mil-std 883.

Part number	Frequency range (GHz)	Gain dB (min)	Gain ripple (max)	Noise figure (max)	P1dBm (min)	DC current (max)
<b>LMB series limiting amplifiers</b>						
LMB003	8 - 18	27.5	+/-2.0dB	+6.0dB	+27.5 sat	1200mA
LMB004	13.75 - 14.25	22	N/A	+6.0dB	+22 sat	550mA
LMB005	15.75 - 16.25	22	N/A	-	+22 sat	550mA
LMB006	15.7 - 17.7	23	N/A	-	+18 sat	333mA
<b>LMA series linear amplifiers with temperature compensation</b>						
LMA006	2 - 18	28	+/-1.25dB	+4.25dB	+17	325mA
LMA007	6 - 18	30	+/-1.25dB	+4.0dB	+20	350mA
LMA008	2 - 6	30	+/-1.25dB	+4.0dB	+20	325mA
LMA009	2 - 18	12.5	+/-1.0dB	+6.0dB	+8.5	125mA
<b>LME series linear amplifiers without temperature compensation</b>						
LME262	2 - 18	18	+/-1.0dB	+4.5dB	+14	75mA
LME263	2 - 18	28	+/-1.15dB	+4.5dB	+14	125mA
LME264	2 - 18	38	+/-1.25dB	+5.0dB	+14	170mA
<b>LMF series linear amplifiers with temperature compensation</b>						
LMF202	0.5 - 2	15	+/-1.0dB	+4.5dB	+14	90mA
LMF212	2 - 4	15	+/-1.0dB	+4.5dB	+14	90mA
LMF222	4 - 8	15	+/-1.0dB	+4.5dB	+14	90mA
LMF232	8 - 12	15	+/-1.0dB	+4.5dB	+14	90mA
LMF242	12 - 18	15	+/-1.0dB	+4.5dB	+14	90mA
LMF262	2 - 18	15	+/-1.0dB	+4.5dB	+14	90mA
LMF272	6 - 18	15	+/-1.0dB	+4.5dB	+14	90mA
LMF303	0.5 - 2	23	+/-1.0dB	+4.5dB	+13	140mA
LMF313	2 - 4	23	+/-1.0dB	+4.5dB	+13	140mA
LMF323	4 - 8	23	+/-1.0dB	+4.5dB	+13	140mA

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design  
assembly  
manufacturing  
testing

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continued

Part number	Frequency range (GHz)	Gain dB (min)	Gain ripple (max)	Noise figure (max)	P1dBm (min)	DC current (max)
<b>LMF series linear amplifiers with temperature compensation</b>						
LMF333	8 - 12	23	+/-1.0dB	+4.5dB	+13	140mA
LMF343	12 - 18	23	+/-1.0dB	+4.5dB	+13	140mA
LMF363	2 -18	23	+/-1.0dB	+4.5dB	+13	140mA
LMF373	6 - 18	23	+/-1.0dB	+4.5dB	+13	140mA
LMF304	0.5 - 2	32	+/-1.3dB	+4.5dB	+13	170mA
LMF314	2 - 4	32	+/-1.3dB	+4.5dB	+13	170mA
LMF324	4 - 8	32	+/-1.3dB	+4.5dB	+13	170mA
LMF334	8 - 12	32	+/-1.3dB	+4.5dB	+13	170mA
LMF344	12 - 18	32	+/-1.3dB	+4.5dB	+13	170mA
LMF364	2 -18	32	+/-1.3dB	+4.5dB	+13	170mA
LMF374	6 - 18	32	+/-1.3dB	+4.5dB	+13	170mA
LMF405	0.5 - 2	42	+/-1.5dB	+4.5dB	+14	190mA
LMF415	2 - 4	42	+/-1.5dB	+4.5dB	+14	190mA
LMF425	4 - 8	42	+/-1.5dB	+4.5dB	+14	190mA
LMF435	8 - 12	42	+/-1.5dB	+4.5dB	+14	190mA
LMF445	12 - 18	42	+/-1.5dB	+4.5dB	+14	190mA
LMF465	2 -18	42	+/-1.5dB	+4.5dB	+14	190mA
LMF475	6 - 18	42	+/-1.5dB	+4.5dB	+14	190mA
LMF406	0.5 - 2	51	+/-1.5dB	+4.5dB	+14	220mA
LMF416	2 - 4	51	+/-1.5dB	+4.5dB	+14	220mA
LMF426	4 - 8	51	+/-1.5dB	+4.5dB	+14	220mA
LMF436	8 - 12	51	+/-1.5dB	+4.5dB	+14	220mA
LMF446	12 - 18	51	+/-1.5dB	+4.5dB	+14	220mA
LMF466	2 -18	51	+/-1.5dB	+4.5dB	+14	220mA
LMF474	6 - 18	51	+/-1.5dB	+4.5dB	+14	220mA

**Common specifications**

Input VSWR	<2:1	
Output VSWR	<2:1	
LME series Gain level varies by	0.015dB/°C per gain stage	
Absolute maximum input power	+19dBm	
Operating Temperature Range	-40°C to +85°C	Temperature compensated devices
Functional Temperature Range	-40°C to +85°C	Performance not guaranteed over temperature



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