

Surface Mount

High IP3 Monolithic Amplifier

HELA-10+

Broadband, 50&75 ohms 5 to 1000 MHz



Maximum Ratings

Heat Slug Temperature	110°C
Storage Temperature	-40°C to +125°C
DC Voltage	+13V
DC Power	7.15W

Pin Connections

RF IN 1,2	3,6
RF OUT 1,2	14,11
DC	10,15
GROUND	1,4,5,8,9,12,13,16
NO CONNECTION	2,7*

*Adding bias resistors may improve IP3, IP2.

See Application Notes:

Enhanced linearity in the HELA-10 Power Amplifier (AN60-009)

High IP3, wideband, balanced linear amplifier
HELA-10 (AN60-0033)

Features

- excellent flatness, ± 0.4 dB typ.
- very high IP3, 49 dBm typ. at 150 MHz & 45 dBm typ. at 800 MHz
- very high IP2, 88 dBm typ.
- low noise figure, 3.5 dB typ.
- aqueous washable

CASE STYLE: CM624

Model	Price	Qty.
HELA-10+	\$15.95	(1-24)
HELA Kit (see table below)	\$19.95	(1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Applications

- Cellular
- Catv
- Instrumentation

Electrical Specifications at 25°C

KIT ¹ NO.	FREQ. (MHz)	OHMS	GAIN ² (dB)			MAXIMUM POWER (dBm)			DYNAMIC RANGE			VSWR ⁴ (:1)		DC POWER	THERMAL RESISTANCE ⁵		
			f _L -f _U	Min.	Typ.	Max.	Typ.	Output (1 dB Compr.)	Input ³ (no damage)	IN	OUT	Typ.	Typ.	Nom.	Max.		
HELA-10A+	50-1000	75		9.5	12	13	± 0.4	30	26	20	3.5	47	1.22	1.22	12	525	6
HELA-10B+	50-1000	50		9.5	12	13	± 0.4	30	26	20	3.5	47	1.22	1.22	12	525	6
HELA-10C+	5-450	75		9.3	11.4	12.5	± 0.4	30	26	20	3.5	48	1.3	1.22	12	525	6
HELA-10D+	8-300	50		9.3	11	12.5	± 0.4	30	26	20	3.5	48	1.2	1.2	12	525	6

1. Kit consists of HELA-10 plus transformers, see table below.

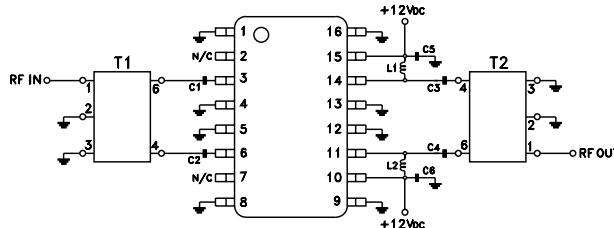
2. Includes transformer losses at input & output.

3. Open load is not recommended, potentially can cause damage. With no load, derate max. input power by 20 dB.

4. For 75 ohm. For 50 ohm, VSWR increases from 1.2:1 at 1 GHz to 2.0:1 at 50MHz.

5. Thermal resistance is from junction to heat slug (mounting paddle).

Application Schematic Diagram

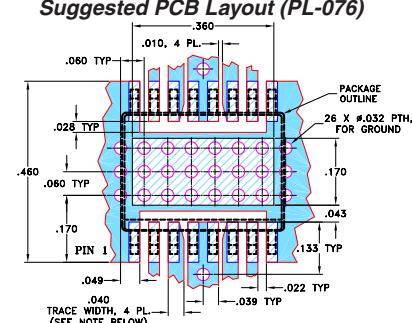


APPLICATION CIRCUIT	T1	T2	C1 TO C6	L1, L2	PCB LAYOUT	EVALUATION BOARD
A	ADTL1-18-75	ADTL1-18-75	0.01 μ F	0.75 μ H	B14-TB-30	TB-16
B	ADTL1-12	ADTL1-12	0.01 μ F	0.75 μ H	B14-TB-17	TB-17
C	ADTL1-1WT	ADTL1-4-75	0.039 μ F	3.3 μ H	B14-TB-16	TB-30
D	ADT1.5-1	ADT1.5-1	0.039 μ F	3.3 μ H	B14-TB-17	TB-45

Assembly Guideline

Reflow solder the slug to the ground plane; PC board layouts for 75 ohm (B14-TB-16), (B14-TB-30), and for 50 ohm (B14-TB-17) are available upon request. Please contact Applications Department or consult our web site.

Demo Board MCL P/N: TB-16,-17,-30,-45 Suggested PCB Layout (PL-076)



NOTE: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS 0.057" \pm .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

3. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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IF/RF MICROWAVE COMPONENTS

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REV. M
M131858
HELA-10+
A ED-6636T
B ED-6636T
C ED-7157/1
D ED-7491/12
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