Environmental Specifications

MODEL NO.	OPERATING TEMP.	AMBIENT	CASE	STORAGE TEMP.	STABILIZATION BAKE [NON-OPER.] 125°C 24 HR.	TEMPERATURE CYCLING [NON-OPER.] -55°C TO 100°C	CONSTANT ACCELERATION (Y1 PLANE) ONLY	BURN-IN (DC. ON) 85°C* 160 HR	SEAL TEST FINE	SEAL TEST GROSS
AMP	-54°C - 85°C		✔	-55°C - 100°C	✔	✔	✔	✔	✔	✔
ERA	-45°C - 85°C		✔	-65°C - 150°C	✔	✔	N.A.	✔	N.A.	N.A.
HELA	-40°C - 110°C		✔	-40°C - 150°C	✔	✔	N.A.	✔	N.A.	N.A.
LZY	-10°C - 50°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
MAN	-54°C - 85°C		✔	-55°C - 100°C	✔	✔	✔	✔	✔	✔
MAR	-20°C - 85°C		✔	-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
MAV	-20°C - 85°C		✔	-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
RAM	-54°C - 125°C		✔	-65°C - 150°C	✔	✔	✔	✔	✔	✔
TO	-54°C - 85°C		✔	-55°C - 100°C	✔	✔	✔	✔	✔	✔
VAM	-20°C - 85°C		✔	-55°C-100°C	✔	✔	N.A.	✔	N.A.	N.A.
VNA	-40°C - 70°C		✔	-55 °C - 150°C	✔	✔	N.A.	✔	N.A.	N.A.
ZEL	-54°C - 85°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZFL	-20°C - 71°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZFL-2500	-20°C - 65°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZHL	-20°C - 65°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZHL-HLN	-54°C - 65°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZHL-03-5WF	-10°C - 65°C	✔		-55 °C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZJL	-40°C - 75°C	✔		-55 °C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZKL	-40°C - 75°C	✔		-55°C - 100°C	✔	✔	N.A.	✔	N.A.	N.A.
ZQL	-40°C - 70°C	✔		-55°C - 100°C	100°C	-55°C - 85°C	N.A.	✔	N.A.	N.A.
ZRON	0°C - 60°C		✔	-55 °C - 125°C	✔	✔	✔	✔	N.A.	✔
ZVE-8G	-55°C - 90°C		✔	-65 °C - 150°C	✔	✔	N.A.	✔	N.A.	N.A.

NOTES: Units are designed and manufactured to meet the environmental specifications as indicated.
* Or max. operating temperature, whichever is less.

MONOLITHIC AMPLIFIERS 50 & 75Ω Surface Mount

HIGH IP3 5 to 1000 MHz

HELA

All specifications at 25°C

KIT◆ NO.	APPLICATION CIRCUIT	FREQ.✪ (MHz) f_L - f_U	OHMS	GAIN[1] (dB) Min.	GAIN[1] (dB) Typ.	GAIN[1] (dB) Max.	GAIN[1] (dB) Typ. Flatness	MAXIMUM POWER (dBm) Output (1 dB Comp.) Typ.	MAXIMUM POWER (dBm) Output (1 dB Comp.) Min.	MAXIMUM POWER (dBm) Input (no damage)	DYNAMIC RANGE NF (dB) Typ.	DYNAMIC RANGE IP3 (dBm) Typ.	VSWR[2] (:1) Typ. In	VSWR[2] (:1) Typ. Out	DC POWER Volt Typ.	DC POWER Current (mA)	THERMAL RESISTANCE[3] θjc °C/W	CASE STYLE Note B	CONNECTION	PRICE $ Qty. (1-9)
HELA-10A	A	50 - 1000	75	10	12	13	±0.4	30	26	20	3.5	47	1.22	1.22	12	525	6	CM624	kl	19.95
HELA-10B	B	50 - 1000	50	10★	12	13	±0.4	30	26	20	3.5	47	1.22	1.22	12	525	6	CM624	kl	19.95
HELA-10C	C	5 - 450	75	9.3	11.4	12.5	±0.4	30	26	20	3.5	48	1.3	1.22	12	525	6	CM624	kl	19.95
HELA-10D	D	8 - 300	50	9.3	11.0	12.5	±0.4	30	26	20	3.5	48	1.2	1.2	12	525	6	CM624	kl	19.95

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

features

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

applications

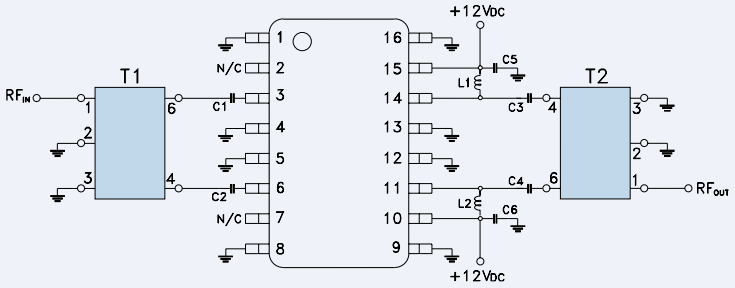
- cellular
- instrumentation
- CATV

absolute maximum ratings

heat slug temperature: 110°C max.
storage temperature: -40°C to 150°
dc voltage: 13V
dc power: 7.15W

Application Schematic Diagram

(see table below for values C1 to C6, L1&L2)



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

NOTES:

◆ Aqueous washable
† Open load is not recommended, potentially can cause damage. With no load, derate max input power by 20 dB.
★ 9.5 dB min., 800-1000 MHz.
✪ Tested with recommended application schematic diagram.
A. Environmental specifications and re-flow soldering information available in General Information Section.
B. Units are non-hermetic unless otherwise noted. For details on case dimensions & finishes see "Case Styles & Outline Drawings".
C. Prices and Specifications subject to change without notice.
D. For Quality Control Procedures see Table of Contents, Section 0, "Mini-Circuits Guarantees Quality" article. For Environmental Specifications see Amplifier Selection Guide.
1. Includes transformer losses at input & output.
2. For 75 ohm. For 50 ohm, VSWR increases from 1.2:1 at 1 GHz to 2.0:1 at 500 MHz.
3. Thermal resistance is from juction to heat slug.

pin connections

PORT	kl
RF IN	3,6
RF OUT	11,14
DC	10,15
GND EXT.	1,4,5,8,9,12,13,16
NOT USED	2,7

000602