GBL GigaBit Logic

16G074
ADVANCE
T-74-13-01

Transimpedance Amplifier
22 dB Gain / 1.9 GHz Bandwidth

FEATURES

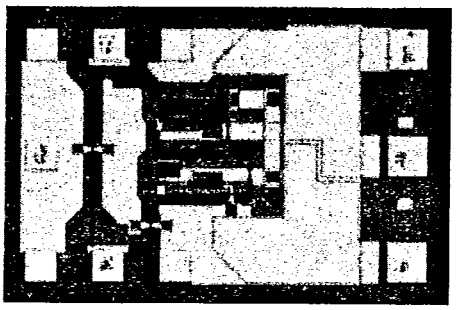
- High gain > 22 dB
- Broad Bandwith: DC to 1.9 GHz typ.
- Low output impedance
- Available in die form or die on substrate
- Stable operation
- Three choices of integrated feedback resistance: 1.0, 2.0, and 4.0 KΩ

APPLICATIONS

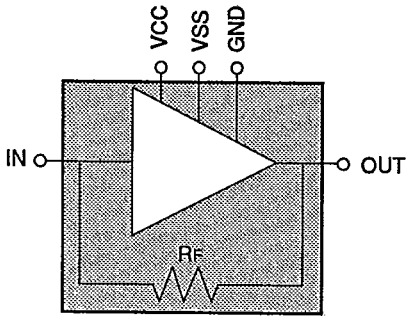
- Fiber optic systems
- Instrumentation and measurement systems

FUNCTIONAL DESCRIPTION

The 16G074 is a stable GaAs IC transimpedance amplifier capable of 22 dB gain (Rs = RL = 50Ω) at a 1.9 GHz -3 dB cutoff frequency (typ.) making it ideally suited for high speed fiber optic, instrumentation, and measurement applications. It operates from +5V and -3V power supplies. The integrated feedback loop design provides high gain and stable operation. Three choices of integrated feedback resistance are available to match various photodiode load requirements: 1.0, 2.0, and 4.0 KΩ.



CIRCUIT DIAGRAM



ELECTRICAL CHARACTERISTICS
(@ 25°C)

Feedback Resistance RF	1.0 KΩ (Typ.) 2.0 KΩ (Typ.) 4.0 KΩ (Typ.)
Gain	20.0 dB (RF = 1.0KΩ) 21.5 dB (RF = 2.0KΩ) 22.0 dB (RF = 4.0KΩ)
High Frequency Cutoff (-3dB)	1.9 GHz (Typ.)
Supply Voltages	VCC = +5V VSS = -3V
Supply Currents	ICC = 35 mA (Typ.) ISS = -25 mA (Typ.)

ORDERING INFORMATION

Nominal Feedback Resistance	Die	Die on Ceramic Substrate
1.0 KΩ	16G074-10X	16G074-10X1
2.0 KΩ	16G074-20X	16G074-20X1
4.0 KΩ	16G074-40X	16G074-40X1

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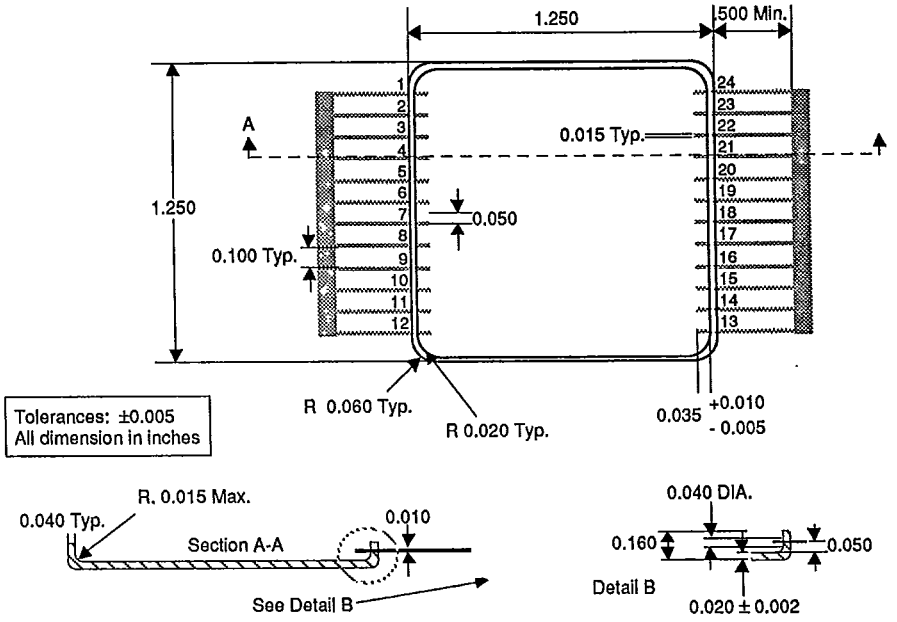
24 PIN HYBRID 18 PIN PACKAGE

T-90-20

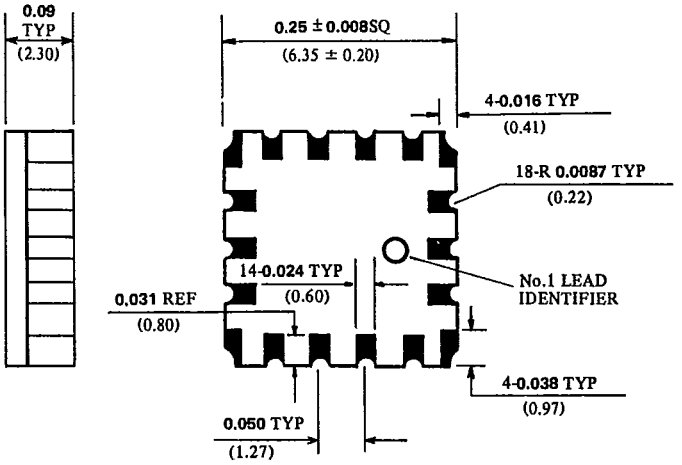
24 PIN HYBRID PACKAGE

Type H



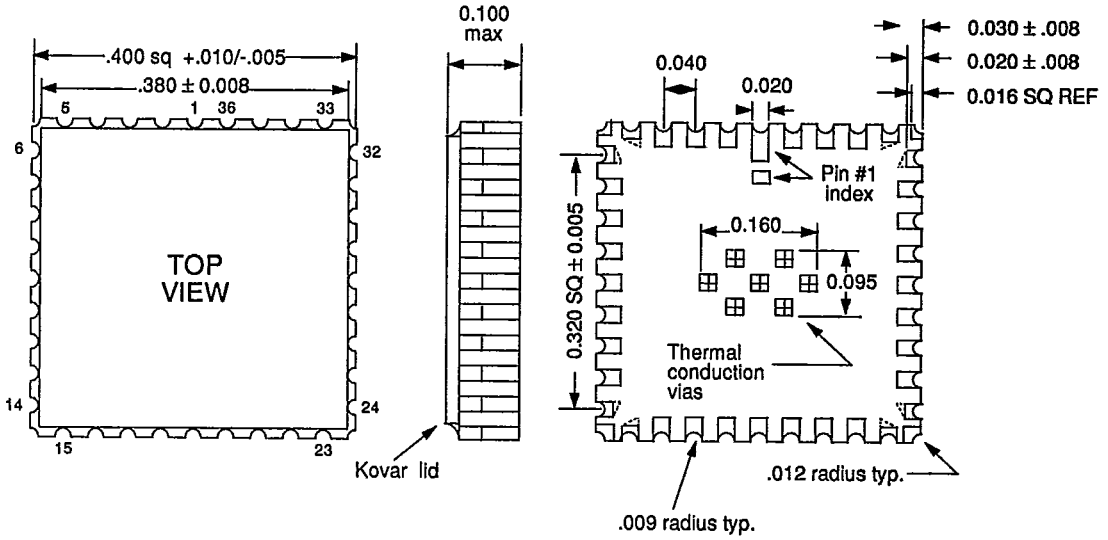
18 PIN LEADLESS CHIP CARRIER

TYPE L1



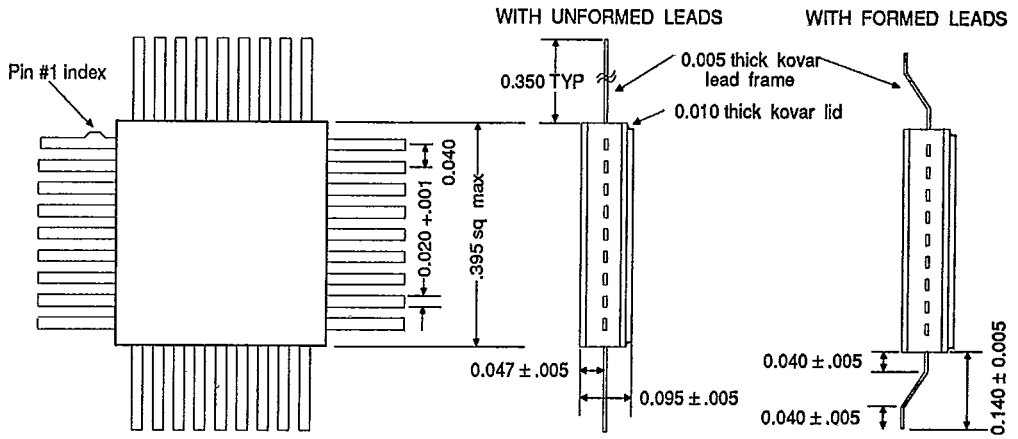
All dimensions shown in **inches** and (millimeters)

36 PIN LEADLESS CHIP CARRIER
TYPE L36



NOTES:
1) The package bottom thermal vias, top lid surface and 4 metallized corner castellations (when present) are all at Vss potential.
2) All dimensions in inches.
3) Pin #1 identifier may be an elongated pad or small, square gray marker.

36 I/O LEAD FLATPACK
TYPE F



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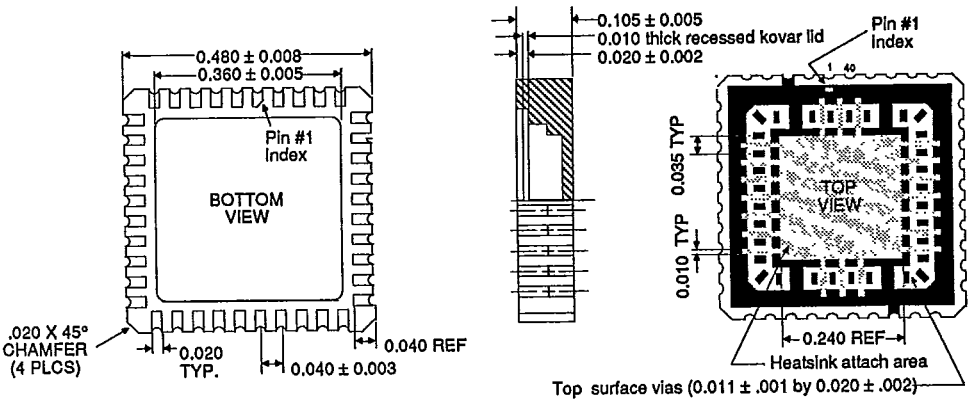
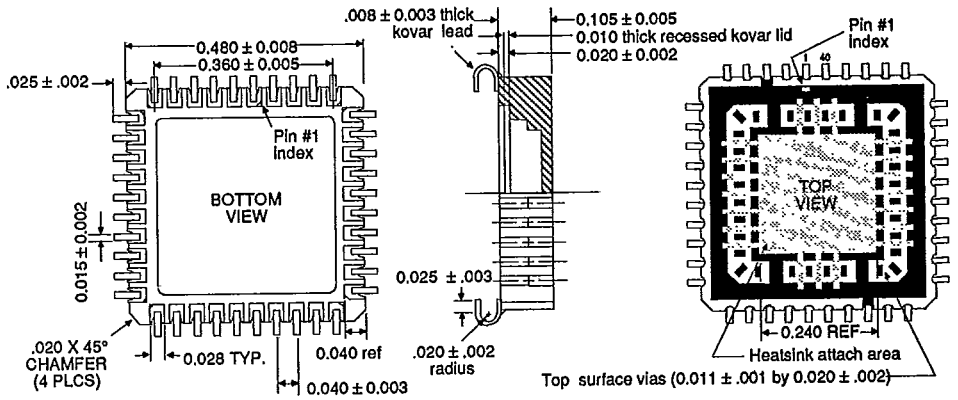
40 PIN PACKAGES

40 PIN LEADLESS CHIP CARRIER
TYPE L



40 PIN LEADED CHIP CARRIER
TYPE C

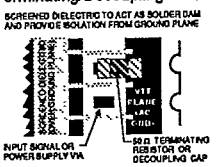


NOTES:

(1) Footprint is JEDEC standard outline.
(2) Top surface vias (for terminating resistors and decoupling capacitors) are not available on pins 3,4,17, 18, 23,24,37 and 38.
(3) Top surface metal (not including vias) and pins 3 and 23 are fixed at VTT potential.
(4) Recommended top surface chip resistors are0.040 long by 0.020 wide by 0.010 thick typ, 100 mw min. nominal power rating (Mini-Systems MSR-21 or equivalent.)
(5) Recommended top surface chip capacitors are 0.040 long by 0.030 wide by 0.020 thick typ, 25V VDCW, 1000 pf, min. (Johanson R09 case or equivalent).
(6) Recommended heatsinks are GBL P/Ns 90GHS-40-A and 90GHS-40-B.
(7) Thermally conductive, electrically non-conductive epoxy is recommended for heatsink attachment (Ablestick 789-4 or 561K, or Thermalloy Thermalbond™ or equivalent.)
(8) L40 and C40 packages are dimensionally identical except for contact finger width.

TOP SURFACE LEGEND:
Metalized Ceramic.....
Screened Dielectric.....
Bare Ceramic.....

Top Surface Terminating/Decoupling Detail



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68 & 132 PIN PACKAGES

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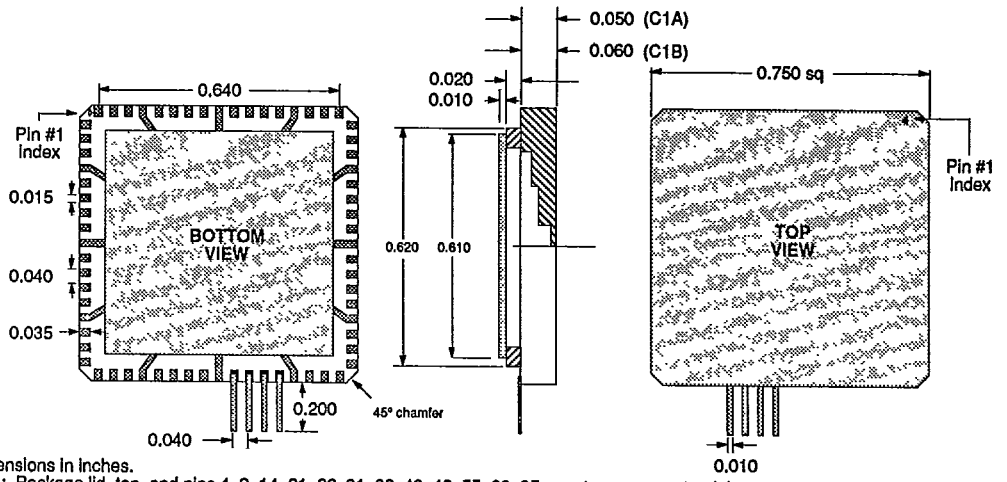
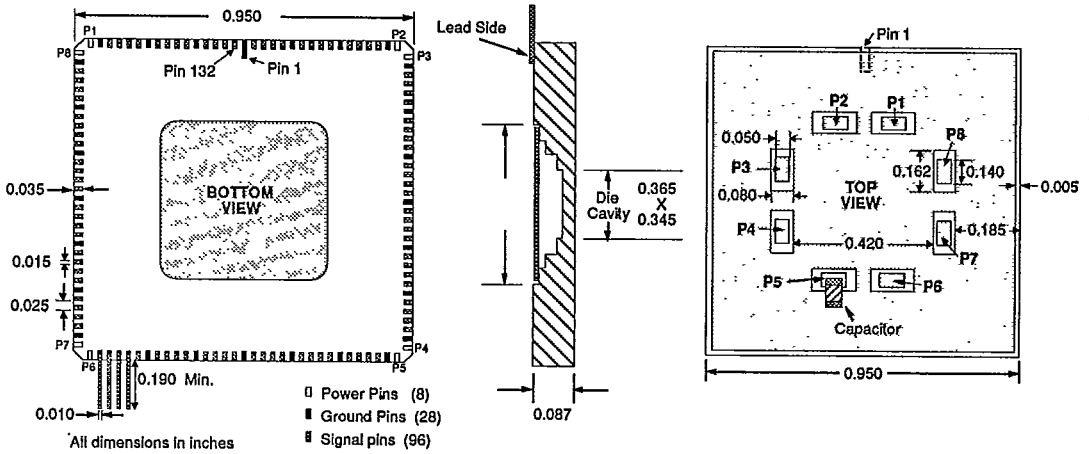
68 PIN LEADED CHIP CARRIER
TYPE C1



(1) All dimensions in inches.
(2) a. C1A: Package lid, top, and pins 4, 9, 14, 21, 26, 31, 38, 43, 48, 55, 60, 65 are at common potential (system ground).
b. C1B: Package lid and pins 4, 9, 14, 21, 26, 31, 38, 43, 48, 55, 60, 65 are at common potential (system ground).

132 PIN LEADED CHIP CARRIER
TYPE C3



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