



GigaBit Logic

16G072

ADVANCE

T-74-11-01

Transimpedance Amplifier

30 dB Gain / 600 MHz Bandwidth

FEATURES

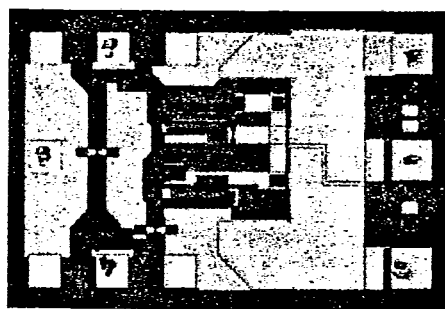
- High gain: 30 dB
- Broad Bandwidth: DC to 600 MHz typ.
- -41 dBm Input sensitivity @ 680 Mbit/s & 10^{-9} BER
- Available in die form or die on substrate
- Low output impedance
- Stable operation
- Three choices of integrated feedback resistance: 10, 20, and 30 K Ω

APPLICATIONS

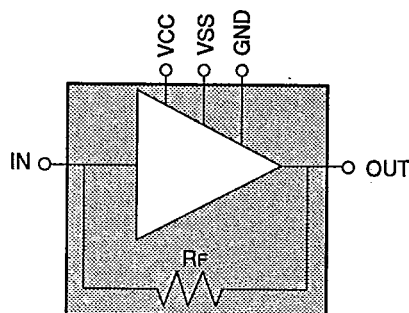
- Fiber optic systems
- Instrumentation and measurement systems

FUNCTIONAL DESCRIPTION

The 16G072 is a stable GaAs IC transimpedance amplifier capable of 30 dB gain ($R_s = R_L = 50\Omega$) at a 600 MHz -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: 10, 20, and 30 K Ω .



CIRCUIT DIAGRAM



ELECTRICAL CHARACTERISTICS

(@ 25°C)

Feedback Resistance R_F	10 K Ω (Typ.) 20 K Ω (Typ.) 30 K Ω (Typ.)
Minimum Gain	29.5 dB ($R_F = 10K\Omega$) 30 dB ($R_F = 20K\Omega$) 30 dB ($R_F = 30K\Omega$)
High Frequency Cutoff (-3dB)	600 MHz (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
10 K Ω	16G072-10X	16G072-10X1
20 K Ω	16G072-20X	16G072-20X1
30 K Ω	16G072-30X	16G072-30X1

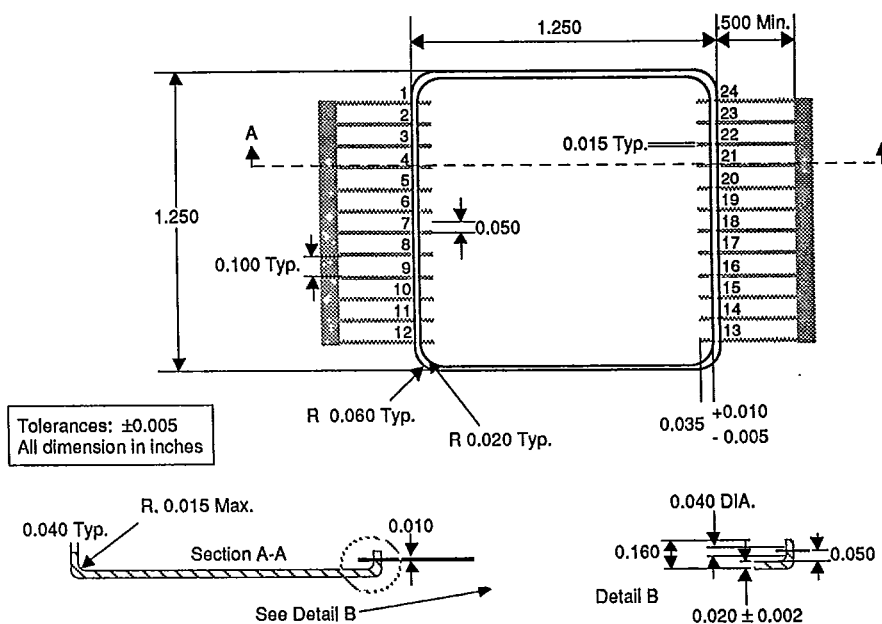


24 PIN HYBRID 18 PIN PACKAGE

T-90-20

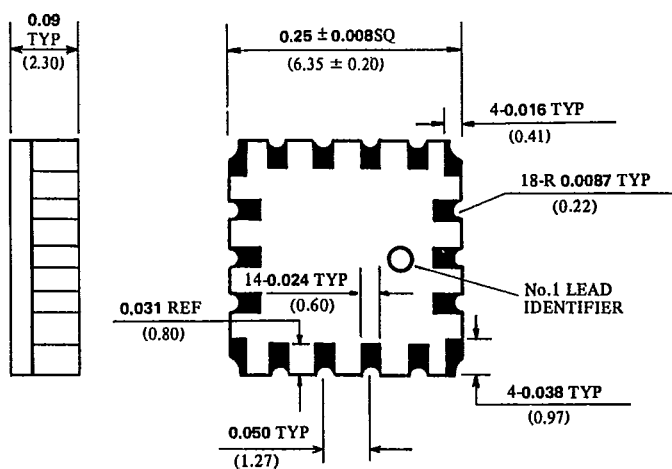
24 PIN HYBRID PACKAGE

Type H



18 PIN LEADLESS CHIP CARRIER

TYPE L1



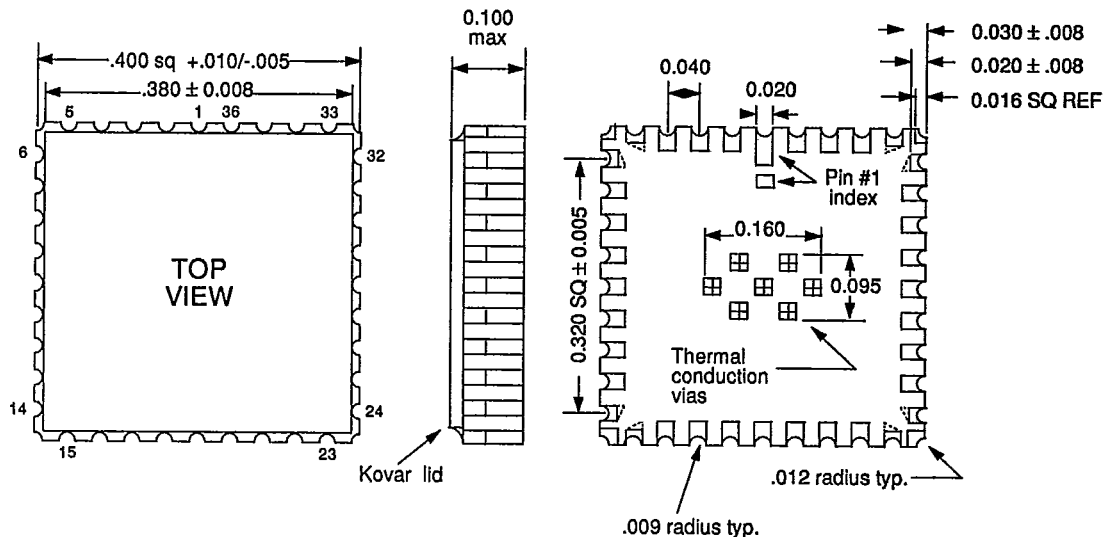
All dimensions shown in inches and (millimeters)



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T-90-20
36 PIN PACKAGES

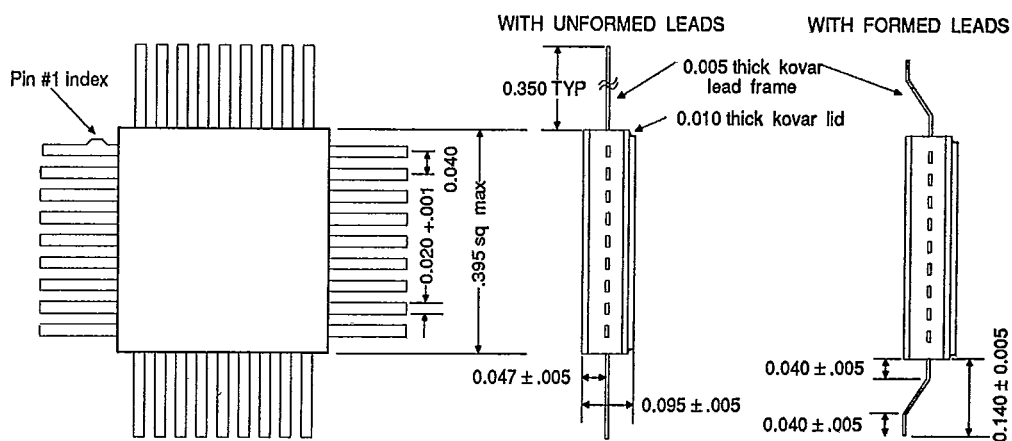
36 PIN LEADLESS CHIP CARRIER TYPE L36



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.

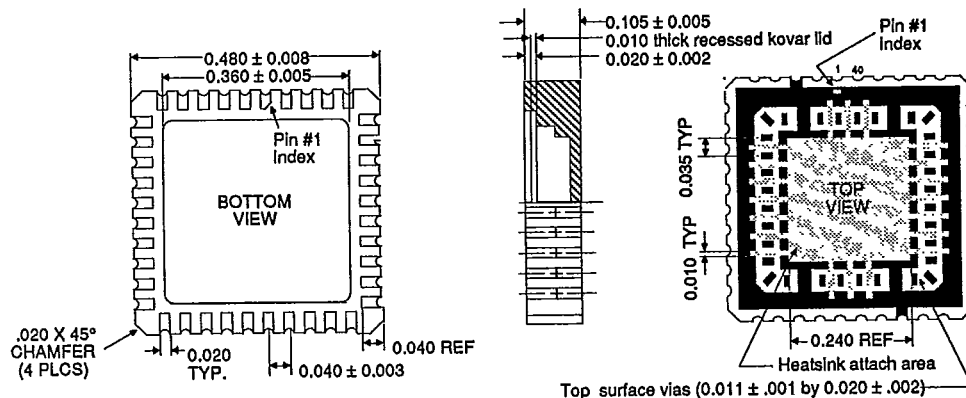
36 I/O LEAD FLATPACK TYPE F



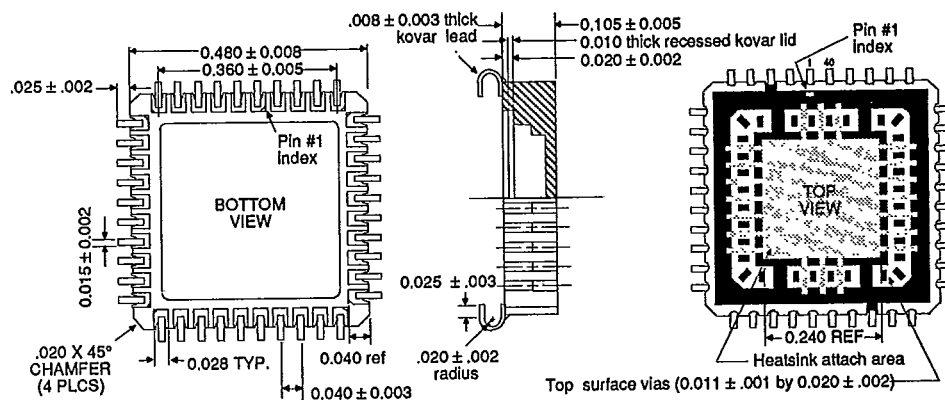


T-90-20
40 PIN PACKAGES

40 PIN LEADLESS CHIP CARRIER TYPE L



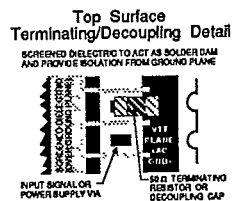
40 PIN LEADED CHIP CARRIER TYPE C



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 are 0.040 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. (Johnson R02 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 501K, or Thermalloy ThermalbondTM or equivalent).
- (8) L40 and C40 packages are dimensionally identical except for contact finger width.

TOP SURFACE LEGEND:	
Metalized Ceramic.....	■
Screened Dielectric.....	▨
Bare Ceramic.....	□

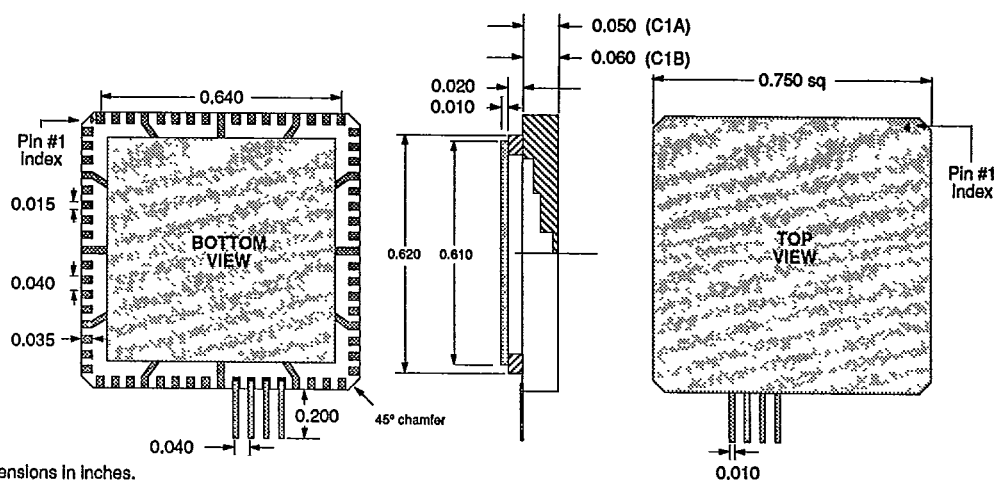




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68 & 132 PIN
PACKAGES
T-90-20

68 PIN LEADED CHIP CARRIER TYPE C1



- (2) All dimensions in inches. 0.010
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

