PHILBRICK produces a wide variety of cool, reliable, solid state operational amplifiers to meet the gamut of application requirements in measurement, computing, control, data processing, and testing. The units shown in this chart are a few of the most popular differential types now in production. In addition to these, Philbrick is developing new and improved types to meet the ever-increasing challenges to operational amplifier performance. Besides basic amplifiers, one can obtain voltage and current boosters, regulated dc power supplies, and operational amplifiers from Philbrick. You are invited to discuss the application of operational amplifiers to the solution of your problems with Philbrick or our nearest Representative.

PHILBRICK
ALL-SOLID-STATE
OPERATIONAL AMPLIFIERS

CHARACTERISTICS

1. Application Features

- All-Silicon
- Wide bandwidth
- High performance
- Plugin in
- ±30 ma Output

2. Voltage gain (dc open loop)
- -25°C, cotted load, minimum
- -25°C, open load, minimum
- 25°C, cotted load, minimum
- 25°C, open load, minimum
- 25°C, no load, typical

3. Response times (as, as, 25°C)
- Full output worst case
- Small signal unity gain bandwidth
- Gain at 1 MHz, typical
- Gain at 10 MHz, typical

4. Rated output (-25°C to +85°C)
- Voltage
- Current
- Gain at 10 MHz
- Input current

5. Suggested bias type
- For 10-100 ma
- ±15V
- ±20ma
- ±15V
- ±20ma

6. Input voltage offset
- Adjustment (built-in or external)
- Max., for 10°C
- Max., for 10°C
- Time (per day)
- Narrow-band noise

7. Input current offset
- External trim
- Built-in trim
- External trim
- External trim

8. Input impedance (-25°C) (nominal comp.)
- Between inputs
- Either input to common signal

9. Common mode
- Input range
- Input offset
- Common mode

10. Temperature range (in °Celsius)
- Max., operating
- Max., storage
- Typical operating
- Max. deviation from nominal

11. Power requirements (±25°C)
- Voltage
- Current at ±15V
- Current at ±12V
- Current at ±12V (Quiescent)

12. Outline dimensions & connections

13. Price (subject to change)
- 1-4
- 5-14
- 15-24
- 25-36
- 37-48
- 49-60
- 61-72
- 73-84
- 85-96
- 97-108
- 109-120

*Philbrick or your nearest Philbrick Representative will welcome your inquiry

**Quiescent**

***Corresponding figures for early units are ±15na, 667Ω

( ) Mechanical chopper

GEORGE A. PHILBRICK RESEARCHES, INC.
127 CLARENDON STREET, BOSTON 16, MASSACHUSETTS
TEL: (617) 262-1500 TELEX: 094-6236 TWX: 617-262-9229

CIRCLE 27 ON READER SERVICE CARD
**4TH ANNUAL ROAD SHOW**

**EIME**

Electronic Instrument Manufacturers Exhibit

<table>
<thead>
<tr>
<th>City</th>
<th>Dates</th>
<th>Locations</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOSTON, MASS.</strong></td>
<td>September 9th - 11th</td>
<td>Charter House, Route 128, Waltham, Massachusetts</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>GREAT NECK, L. I., N. Y.</strong></td>
<td>September 12th</td>
<td>Leonard's of Great Neck, 380 Northern Boulevard</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>BETHPAGE, L. I., N. Y.</strong></td>
<td>September 16th</td>
<td>Holiday Manor, 345 Hicksville Road</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>EATONTOWN, N. J.</strong></td>
<td>September 20th</td>
<td>Civic Auditorium, Monmouth Shopping Center</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>TOTOWA, N. J.</strong></td>
<td>September 23rd</td>
<td>Gladiator's Arena, Route 46</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>PHILADELPHIA, PA.</strong></td>
<td>September 23rd</td>
<td>Marriott Motor Hotel, City Line Avenue, &amp; Monument Road</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>PRINCETON, N. J.</strong></td>
<td>September 24th</td>
<td>Flagpost Motor Lodge, Route U. S. 1</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>SYRACUSE, N. Y.</strong></td>
<td>September 26th</td>
<td>Randolph House, Exit 37, N. Y. State Thruway</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>WATCHUNG, N. J.</strong></td>
<td>September 30th</td>
<td>Wally's Tavern, 154 Bonnie Burn Road</td>
<td>12 noon - 7:30 pm</td>
</tr>
<tr>
<td><strong>WASHINGTON, D. C.</strong></td>
<td>October 2nd</td>
<td>International Inn, Thomas Circle, 14th &amp; M Sts., N.W.</td>
<td>12 noon - 7:30 pm</td>
</tr>
</tbody>
</table>

SEE LATEST DEVELOPMENTS IN ELECTRONIC INSTRUMENTS BY 9 LEADING MANUFACTURERS. The EIME road show will again feature practical operating displays of electronic instruments manufactured by nine leading companies. Typical applications will be demonstrated. Engineering personnel from participating companies will be available to answer your technical and application questions in a completely casual atmosphere. We cordially invite you and your associates to attend. Please check the schedule and note when the EIME road show will be in your area.

**FREE PARKING • NO TICKETS REQUIRED • BUFFET**