Dual Darlington Array

Applications and Features
Low-level stereo and single-channel amplifier stages
Low-noise, emitter-follower differential amplifiers
Operational amplifier driver
Stereo phonograph preamplifiers
Wide application in low-noise industrial instrumentation amplifiers
Matched transistors with emitter-follower outputs
200-MHz gain bandwidth product
Two independent low-noise wideband amplifier channels

Maximum Ratings at $T_A = 25^\circ$C
The following maximum ratings apply for each transistor in the array:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Max Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collector-to-Emitter Voltage</td>
<td>15 V</td>
</tr>
<tr>
<td>Collector-to-Base Voltage</td>
<td>30 V</td>
</tr>
<tr>
<td>Emitter-to-Base Voltage</td>
<td>5 V</td>
</tr>
<tr>
<td>Collector Current</td>
<td>50 mA</td>
</tr>
<tr>
<td>Power Dissipation</td>
<td>300 mW</td>
</tr>
</tbody>
</table>

File No. 275*

4-Amplifier Array

Applications and Features
AC Integrator
Equalizer
Linear signal mixer
Low-level preamplifier
Multi-channel or cascade operation
Multivibrator
Tone generator
Four ac amplifiers on a common substrate
Independently accessible inputs and outputs
Operates from single-ended supply

Electrical Characteristics at $T_A = 25^\circ$C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Gain per Package at -3 dB Bandwidth</td>
<td>232 dB typ.</td>
</tr>
<tr>
<td>Voltage Gain (open loop) at 10 kHz</td>
<td>53 dB min.</td>
</tr>
<tr>
<td>Noise Figure at 1 kHz</td>
<td>2 dB typ.</td>
</tr>
<tr>
<td>Bandwidth (open loop) at -3 dB point</td>
<td>250 kHz typ.</td>
</tr>
<tr>
<td>Total Harmonic Distortion at 1 kHz</td>
<td>0.65 % max.</td>
</tr>
<tr>
<td>Output Voltage Swing at 1 kHz</td>
<td>2 V rms min.</td>
</tr>
<tr>
<td>Input impedance (open loop) at 1 kHz</td>
<td>90 kΩ typ.</td>
</tr>
</tbody>
</table>

File No. 377*
Four-Channel Preamplifiers

Applications and Features
- Full-function stereo
- Independently accessible preamplifier inputs and outputs
- Tape recorder and playback preamplifier
- Operates from single-ended supply
- Tone generator
- Four ac amplifiers on a common substrate

Electrical Characteristics at $T_A = 25^\circ$C
- Total Gain per Package at $-3\text{dB}$ Bandwidth: $232$ dB typ.
- Voltage Gain (open loop) at 10kHz: $53$ dB min.
- Noise Figure at 1kHz: $2$ dB typ.
- Bandwidth (open loop) at $-3\text{dB}$ point: $300$ kHz typ.
- Total Harmonic Distortion at 1kHz (Open Loop): $0.065$ % typ.
- Output Voltage Swing at 1kHz: $2$ Vrms min.
- Input Impedance (open loop) at 1kHz: $90$ k$\Omega$ typ.
- Equivalent Input Noise Voltage: Amplifiers 1 & 4, "C" Filter at Output: $1.7$ $\mu$V typ.
- Amplifiers 2 & 3, RIAA Compensated: $4$ $\mu$V typ.
- *AC feedback included in test

<table>
<thead>
<tr>
<th>Package</th>
<th>Suffix</th>
<th>$T_A$ (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-Lead DIP</td>
<td>None</td>
<td>-40 to 85</td>
</tr>
</tbody>
</table>

File No. 387; ICAN 4072*

Dual Darlington Amplifiers

Applications and Features
- Preamplifier and low-level amplifier applications in single-channel and stereo systems
- Two independent low-noise wideband amplifier channels
- Matched transistors with emitter-follower outputs
- Low-noise differential amplifiers

Typical Electrical Characteristics
- For Either Darlington Pair
  - Gain-Bandwidth Product: $200$ MHz
  - Small-Signal Forward Current Transfer Ratio: $1300$
  - Voltage Gain: $26$ dB
  - Power Gain: $47$ dB
  - Noise Voltage at $f = 10$ kHz: $0.012$ $\mu$V/$\sqrt{Hz}$

<table>
<thead>
<tr>
<th>Package</th>
<th>Suffix</th>
<th>$T_A$ (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-Lead TO-5</td>
<td>None</td>
<td>-55 to 125°C</td>
</tr>
</tbody>
</table>

File No. 275*
CA3036
Darlington Transistor Array - darlington config
RCA Solid State
Darlington Transistors, Transistor Arrays
Number of Devices=2
P(T) Max., (W) Power Dissipation=100mW
hFE) Min. Static Current Gain=80
β(V) (@ V (Test Condition)=1.0V
β(V,CE) (@ V (Test Condition)=15V
H(T) Min. (Hz) Transition Freq.=150MHz
Status=Discontinued
Package=TO-5var

CA3036
Silicon NPN
N/A