NPN General Purpose Amplifier

**Features**
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Capable of 625mWatts of Power Dissipation
- Halogen free available upon request by adding suffix ",HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: Type number
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF CHARACTERISTICS</td>
<td></td>
</tr>
<tr>
<td><strong>V(BR)CEO</strong></td>
<td>Collector-Emitter Breakdown Voltage* (Ic=1.0mA, Ie=0)</td>
</tr>
<tr>
<td><strong>V(BR)CBO</strong></td>
<td>Collector-Base Breakdown Voltage (Ic=0.1mA, Ie=0)</td>
</tr>
<tr>
<td><strong>V(BR)EBO</strong></td>
<td>Emitter-Base Breakdown Voltage (Ie=0.1mA, Ic=0)</td>
</tr>
<tr>
<td><strong>I(BL)</strong></td>
<td>Base Cutoff Current (VCE=35Vdc, VBE=0.4Vdc)</td>
</tr>
<tr>
<td><strong>I(CEX)</strong></td>
<td>Collector Cutoff Current (VCE=35Vdc, VBE=0.4Vdc)</td>
</tr>
</tbody>
</table>

| ON CHARACTERISTICS |
| **hFE** | DC Current Gain* (Ic=1mA, VCE=1.0Vdc) | 20 40 80 100 300 |
| **V(CE(sat))** | Collector-Emitter Saturation Voltage (Ic=15mA, Ic=15mA) | 0.4 0.75 Vdc |
| **V(BE(sat))** | Base-Emitter Saturation Voltage (Ic=15mA, Ic=15mA) | 0.75 0.95 1.2 Vdc |

| SMALL-SIGNAL CHARACTERISTICS |
| **fT** | Current Gain-Bandwidth Product (Ic=20mA, VCE=10Vdc, f=100MHz) | 250 MHz |
| **Cbc** | Collector-Base Capacitance (Vcb=5.0Vdc, Ic=0, f=10kHz) | 6.5 pF |
| **Ceb** | Emitter-Base Capacitance (Veb=0.5Vdc, Ic=0, f=100kHz) | 30.0 pF |

| SWITCHING CHARACTERISTICS |
| **td** | Delay Time (Vcc=30Vdc, Vbe=0.2Vdc) | 15 ns |
| **tf** | Rise Time (Vcc=150mA, Ic=15mA) | 20 ns |
| **ts** | Storage Time (Vcc=30Vdc, Ic=150mA) | 225 ns |
| **tg** | Fall Time (Ic=150mA, Ie=50mA) | 30 ns |

*Pulse Width ≤ 300µs, Duty Cycle ≤ 2.0%

**Revision:** G

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Revision: G 1 of 4 2014/11/26
2N4401

Static Characteristic

- COMMON Emitter, $V_{ce} = 1V$
- $V_{ce}$ vs $I_c$ for $T=25^\circ C$
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2N4401

**Common Emitter**
- $V_{ce} = 10V$
- $T_a = 25^\circ C$

**Collector Current** $I_c$ (mA)

**Transition Frequency** $f_t$ (MHz)

**Collector Power Dissipation** $P_c$ (mW)

**Ambient Temperature** $T_a$ (°C)
Ordering Information:

<table>
<thead>
<tr>
<th>Device</th>
<th>Packing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number-AP</td>
<td>Ammo Packing: 20Kpcs/Carton</td>
</tr>
<tr>
<td>Part Number-BP</td>
<td>Bulk: 100Kpcs/Carton</td>
</tr>
</tbody>
</table>

Note: Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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