

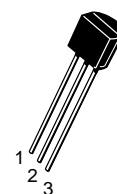
Amplifier Transistors

NPN Silicon

BC182,A,B
BC183
BC184

MAXIMUM RATINGS

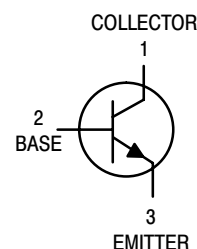
| Rating | Symbol | BC182 | BC183 | BC184 | Unit |
|----------------------------------------------------------------------------------------|----------------|-------------|-------|-------|----------------------|
| Collector–Emitter Voltage | V_{CEO} | 50 | 30 | 30 | Vdc |
| Collector–Base Voltage | V_{CBO} | 60 | 45 | 45 | Vdc |
| Emitter–Base Voltage | V_{EBO} | 6.0 | | | Vdc |
| Collector Current — Continuous | I_C | 100 | | | mAdc |
| Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 350 | | | mW |
| | | 2.8 | | | mW/ $^\circ\text{C}$ |
| Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C | P_D | 1.0 | | | Watts |
| | | 8.0 | | | mW/ $^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | –55 to +150 | | | $^\circ\text{C}$ |



CASE 29–04, STYLE 17
TO–92 (TO–226AA)

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|-----------------------------------------|-----------------|-----|---------------------------|
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 357 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 125 | $^\circ\text{C}/\text{W}$ |



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

OFF CHARACTERISTICS

| | | | | | | |
|--------------------------------------------------------------------------------------------------------------|-------------------------|---------------|----------------|-------------------|----------------|----|
| Collector–Emitter Breakdown Voltage ($I_C = 2.0\text{ mA}, I_B = 0$) | BC182 BC183 BC184 | $V_{(BR)CEO}$ | 50 30 30 | — — — | — — — | V |
| Collector–Base Breakdown Voltage ($I_C = 10\ \mu\text{A}, I_E = 0$) | BC182 BC183 BC184 | $V_{(BR)CBO}$ | 60 45 45 | — — — | — — — | V |
| Emitter–Base Breakdown Voltage ($I_E = 100\ \mu\text{A}, I_C = 0$) | | $V_{(BR)EBO}$ | 6.0 | — | — | V |
| Collector Cutoff Current ($V_{CB} = 50\text{ V}, V_{BE} = 0$) ($V_{CB} = 30\text{ V}, V_{BE} = 0$) | BC182 BC183 BC184 | I_{CBO} | — — — | 0.2 0.2 0.2 | 15 15 15 | nA |
| Emitter–Base Leakage Current ($V_{EB} = 4.0\text{ V}, I_C = 0$) | | I_{EBO} | — | — | 15 | nA |

BC182,A,B BC183 BC184

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|---------------------|---------------|------|
| ON CHARACTERISTICS | | | | | |
| DC Current Gain (I _C = 10 μA, V _{CE} = 5.0 V) (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 100 mA, V _{CE} = 5.0 V) | BC182 | 40 | — | — | — |
| | BC183 | 40 | — | — | — |
| | BC184 | 100 | — | — | — |
| | BC182 | 120 | — | 500 | — |
| | BC183 | 120 | — | 800 | — |
| | BC184 | 250 | — | 800 | — |
| | BC182 | 80 | — | — | — |
| | BC183 | 80 | — | — | — |
| | BC184 | 130 | — | — | — |
| Collector–Emitter On Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA) ⁽¹⁾ | V _{CE(sat)} | — | 0.07 0.2 | 0.25 0.6 | V |
| Base–Emitter Saturation Voltage (I _C = 100 mA, I _B = 5.0 mA) ⁽¹⁾ | V _{BE(sat)} | — | — | 1.2 | V |
| Base–Emitter On Voltage (I _C = 100 μA, V _{CE} = 5.0 V) (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 100 mA, V _{CE} = 5.0 V) ⁽¹⁾ | V _{BE(on)} | — 0.55 — | 0.5 0.62 0.83 | — 0.7 — | V |
| DYNAMIC CHARACTERISTICS | | | | | |
| Current–Gain — Bandwidth Product (I _C = 0.5 mA, V _{CE} = 3.0 V, f = 100 MHz) (I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz) | BC182 | — | 100 | — | MHz |
| | BC183 | — | 120 | — | — |
| | BC184 | — | 140 | — | — |
| | BC182 | 150 | 200 | — | — |
| | BC183 | 150 | 240 | — | — |
| | BC184 | 150 | 280 | — | — |
| Common Base Output Capacitance (V _{CB} = 10 V, I _C = 0, f = 1.0 MHz) | C _{ob} | — | — | 5.0 | pF |
| Common Base Input Capacitance (V _{EB} = 0.5 V, I _C = 0, f = 1.0 MHz) | C _{ib} | — | 8.0 | — | pF |
| Small–Signal Current Gain (I _C = 2.0 mA, V _{CE} = 5.0 V, f = 1.0 kHz) | BC182 | 125 | — | 500 | — |
| | BC183 | 125 | — | 900 | — |
| | BC184 | 240 | — | 900 | — |
| | BC182A | 125 | — | 260 | — |
| | BC182B | 240 | — | 500 | — |
| | BC182B | 240 | — | 500 | — |
| Noise Figure (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz) (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz, f = 200 Hz) | BC184 | — | 2.0 | 4.0 | dB |
| | BC182 | — | 2.0 | 10 | — |
| | BC183 | — | 2.0 | 10 | — |
| | BC184 | — | 2.0 | 4.0 | — |
| | BC184 | — | 2.0 | 4.0 | — |

1. Pulse Test: T_p 300 s, Duty Cycle 2.0%.

BC182,A,B BC183 BC184

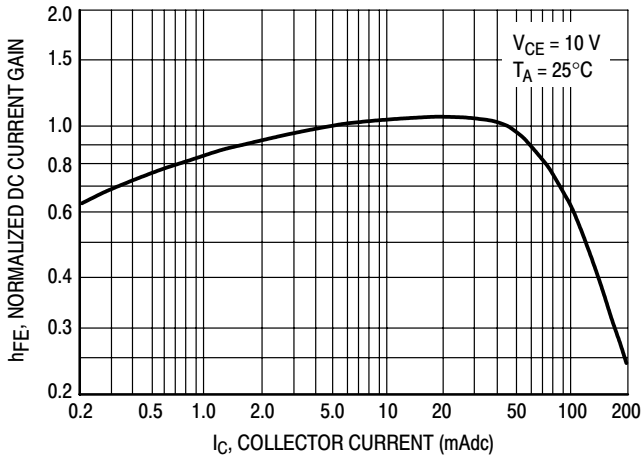


Figure 1. Normalized DC Current Gain

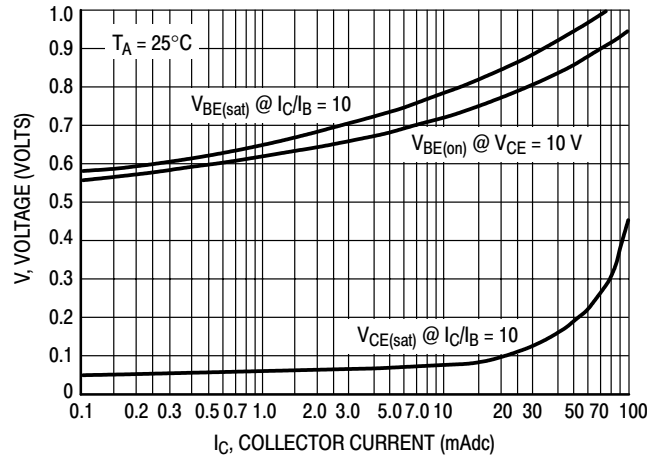


Figure 2. "Saturation" and "On" Voltages

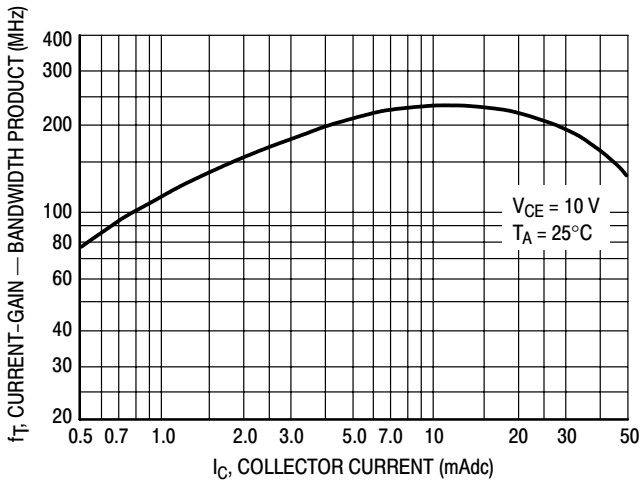


Figure 3. Current-Gain — Bandwidth Product

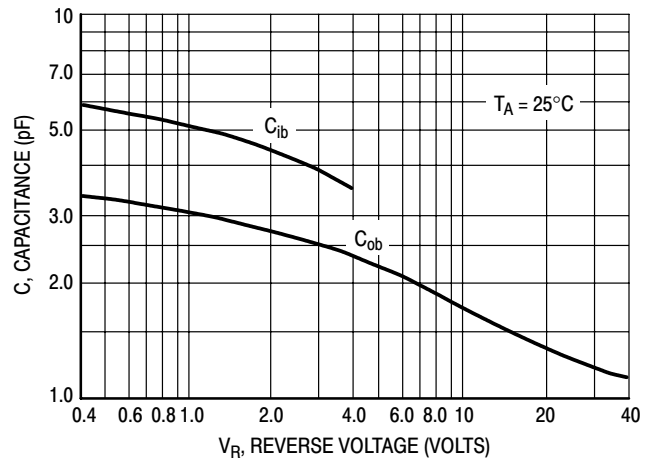


Figure 4. Capacitances

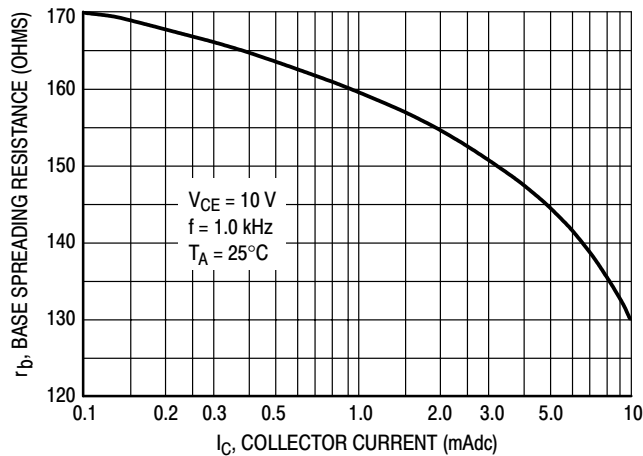
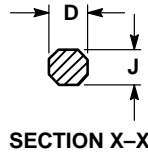
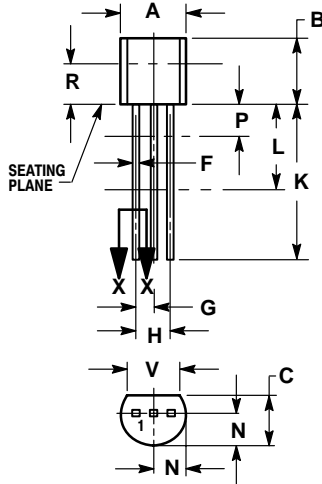


Figure 5. Base Spreading Resistance

BC182,A,B BC183 BC184

PACKAGE DIMENSIONS

CASE 029-04
(TO-226AA)
ISSUE AD




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K. MINIMUM LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.022 | 0.41 | 0.55 |
| F | 0.016 | 0.019 | 0.41 | 0.48 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

PUBLICATION ORDERING INFORMATION

NORTH AMERICA Literature Fulfillment:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com
Fax Response Line: 303-675-2167 or 800-344-3810 Toll Free USA/Canada

N. American Technical Support: 800-282-9855 Toll Free USA/Canada

EUROPE: LDC for ON Semiconductor – European Support

German Phone: (+1) 303-308-7140 (Mon-Fri 2:30pm to 7:00pm CET)
Email: ONlit-german@hibbertco.com
French Phone: (+1) 303-308-7141 (Mon-Fri 2:00pm to 7:00pm CET)
Email: ONlit-french@hibbertco.com
English Phone: (+1) 303-308-7142 (Mon-Fri 12:00pm to 5:00pm GMT)
Email: ONlit@hibbertco.com

EUROPEAN TOLL-FREE ACCESS*: 00-800-4422-3781

*Available from Germany, France, Italy, UK, Ireland

CENTRAL/SOUTH AMERICA:

Spanish Phone: 303-308-7143 (Mon-Fri 8:00am to 5:00pm MST)
Email: ONlit-spanish@hibbertco.com
Toll-Free from Mexico: Dial 01-800-288-2872 for Access –
then Dial 866-297-9322

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support

Phone: 303-675-2121 (Tue-Fri 9:00am to 1:00pm, Hong Kong Time)
Toll Free from Hong Kong & Singapore:
001-800-4422-3781
Email: ONlit-asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center

4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan 141-0031
Phone: 81-3-5740-2700
Email: r14525@onsemi.com

ON Semiconductor Website: <http://onsemi.com>

For additional information, please contact your local Sales Representative.