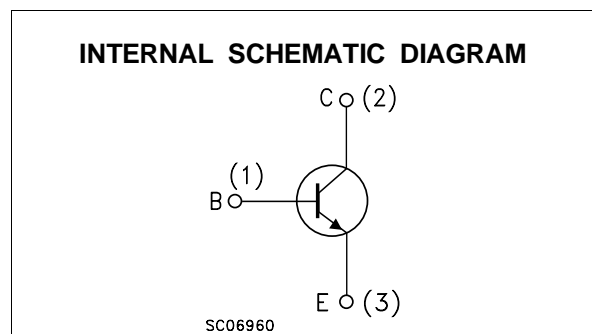
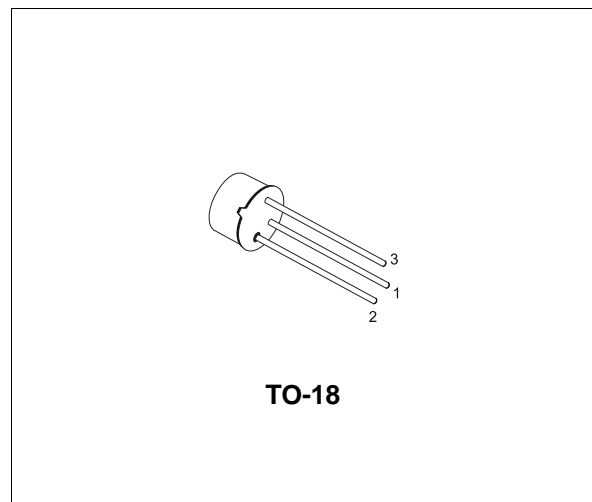


EPITAXIAL PLANAR NPN
■ HIGH VOLTAGE AMPLIFIER
DESCRIPTION

The BC394 is a silicon Planar Epitaxial NPN transistor in Jedec TO-18 metal case, designed for general purpose high-voltage and video amplifier applications.


ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | 180 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 180 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 6 | V |
| I_C | Collector Current | 100 | mA |
| P_{tot} | Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_C \leq 25\text{ }^\circ\text{C}$ | 0.4 | W |
| | | 1.4 | W |
| T_{stg} | Storage Temperature | -55 to 175 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | 175 | $^\circ\text{C}$ |

BC394

THERMAL DATA

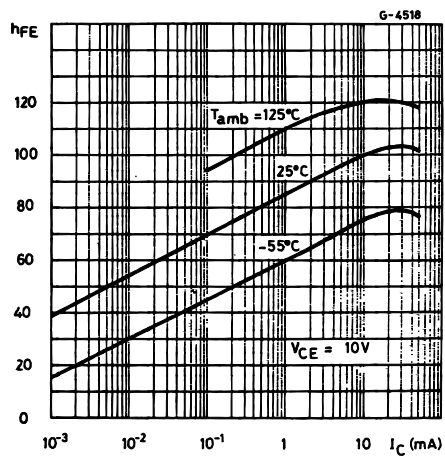
| | | | | |
|-----------------------|-------------------------------------|-----|-------|------|
| R _{thj-case} | Thermal Resistance Junction-Case | Max | 107.1 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-Ambient | Max | 375 | °C/W |

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

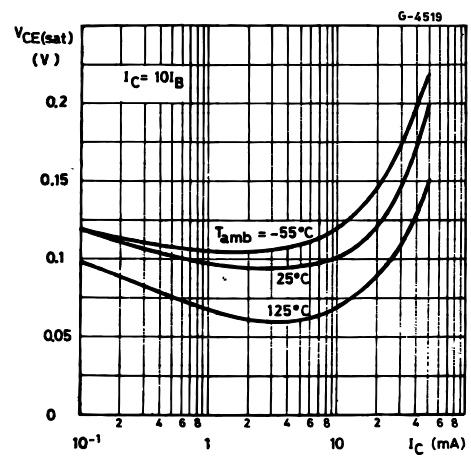
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|--|---|------|--------------|----------|----------|
| I _{CBO} | Collector Cut-off Current (I _E = 0) | V _{CB} = 100 V V _{CB} = 100 V T _C = 150 °C | | | 50 50 | nA μA |
| V _{(BR)CBO} | Collector-Base Breakdown Voltage (I _E = 0) | I _C = 100 μA | 180 | | | V |
| V _{(BR)CEO*} | Collector-Emitter Breakdown Voltage (I _B = 0) | I _C = 10 mA | 180 | | | V |
| V _{(BR)EBO} | Emitter-Base Breakdown Voltage (I _C = 0) | I _E = 100 μA | 6 | | | V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = 10 mA I _B = 1 mA I _C = 50 mA I _B = 5 mA | | 0.2 0.4 | 0.3 | V V |
| V _{BE(sat)*} | Base-Emitter Saturation Voltage | I _C = 10 mA I _B = 1 mA I _C = 50 mA I _B = 5 mA | | 0.75 0.85 | 0.9 | V V |
| h _{FE*} | DC Current Gain | I _C = 1 mA V _{CE} = 10 V I _C = 10 mA V _{CE} = 10 V | 30 | 85 100 | | |
| C _{CBO} | Collector-Base Capacitance | I _E = 0 V _{CB} = 10 V f = 1 MHz | | 5 | | pF |

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1 %

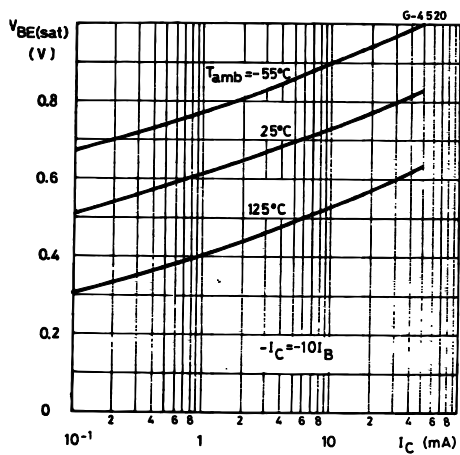
DC Current Gain



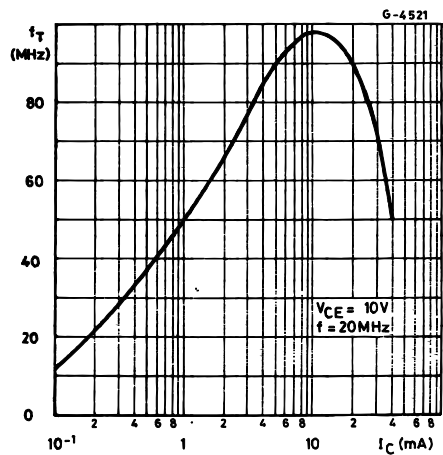
Collector Emitter Saturation Voltage



Base Emitter Saturation Voltage

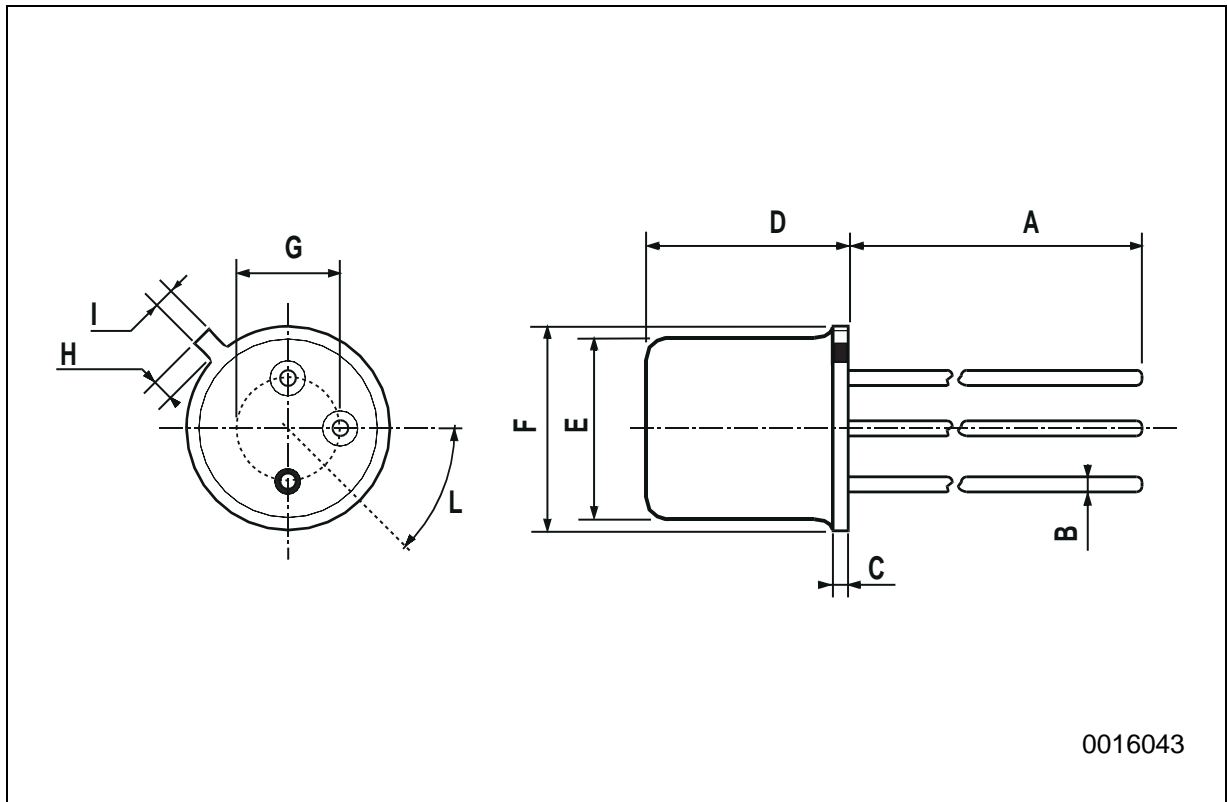


Transition Frequency



TO-18 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 12.7 | | | 0.500 | |
| B | | | 0.49 | | | 0.019 |
| D | | | 5.3 | | | 0.208 |
| E | | | 4.9 | | | 0.193 |
| F | | | 5.8 | | | 0.228 |
| G | 2.54 | | | 0.100 | | |
| H | | | 1.2 | | | 0.047 |
| I | | | 1.16 | | | 0.045 |
| L | 45° | | | 45° | | |



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