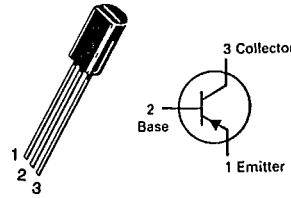


T-29-23

BDB02A, B, C, D

CASE 29-03, STYLE 1
TO-92 (TO-226AE)



ONE WATT
AMPLIFIER TRANSISTORS

PNP SILICON

MAXIMUM RATINGS

| Rating | Symbol | BDB02A | BDB02B | BDB02C | BDB02D | Unit |
|---|-----------------------------------|-------------|--------|--------|--------|---------------|
| Collector-Emitter Voltage | V _{CEO} | 45 | 60 | 80 | 100 | Vdc |
| Collector-Base Voltage | V _{CES} | 45 | 60 | 80 | 100 | Vdc |
| Emitter-Base Voltage | V _{EB0} | 5.0 | | | | Vdc |
| Collector Current - Continuous | I _C | 0.5 | | | | Adc |
| Total Device Dissipation @ T _A = 25°C Derate above 25°C | P _D | 1.0 | | | | Watt mW/°C |
| Total Device Dissipation @ T _C = 25°C Derate above 25°C | P _D | 2.5 | | | | Watt mW/°C |
| Operating and Storage Junction Temperature Range | T _J , T _{stg} | -55 to +150 | | | | °C |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|------------------|-----|------|
| Thermal Resistance, Junction to Case | R _{θJC} | 50 | °C/W |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 125 | °C/W |

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

| Characteristic | Symbol | Min. | Max. | Unit |
|---|----------------------|------|------|------|
| OFF CHARACTERISTICS | | | | |
| Collector-Emitter Voltage (I _C = 10 mA, I _B = 0) | V _{(BR)CEO} | | | Vdc |
| BDB02A | | 45 | | |
| BDB02B | | 60 | | |
| BDB02C | | 80 | | |
| BDB02D | | 100 | | |
| Collector Cutoff Current (V _{CB} = 45 V, I _E = 0) | I _{CBO} | | 0.1 | μAdc |
| (V _{CB} = 60 V, I _E = 0) | | | 0.1 | |
| (V _{CB} = 80 V, I _E = 0) | | | 0.1 | |
| (V _{CB} = 100 V, I _E = 0) | | | 0.1 | |
| Emitter Cutoff Current (I _C = 0, V _{EB} = 5.0 V) | I _{EBO} | | 100 | nAdc |
| ON CHARACTERISTICS | | | | |
| DC Current Gain (I _C = 100 mA, V _{CE} = 1 V) | h _{FE} | 40 | 400 | |
| (I _C = 500 mA, V _{CE} = 2 V) | | 25 | | |
| Collector-Emitter Saturation Voltage* (I _C = 1000 mA, I _B = 100 mA) | V _{CE(sat)} | | 0.7 | Vdc |
| Collector-Emitter On Voltage* (I _C = 1000 mA, V _{CE} = 1 V) | V _{BE(on)} | | 1.2 | Vdc |
| DYNAMIC CHARACTERISTICS | | | | |
| Current Gain Bandwidth Product (I _C = 200 mA, V _{CE} = 5 V, f = 100 MHz) | f _T | 50 | | MHz |
| Output Capacitance (V _{CB} = 10 V, I _E = 0, f = 1 MHz) | C _{ob} | | 30 | pF |

*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle 2.0%.

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FIGURE 1 - D.C. CURRENT GAIN

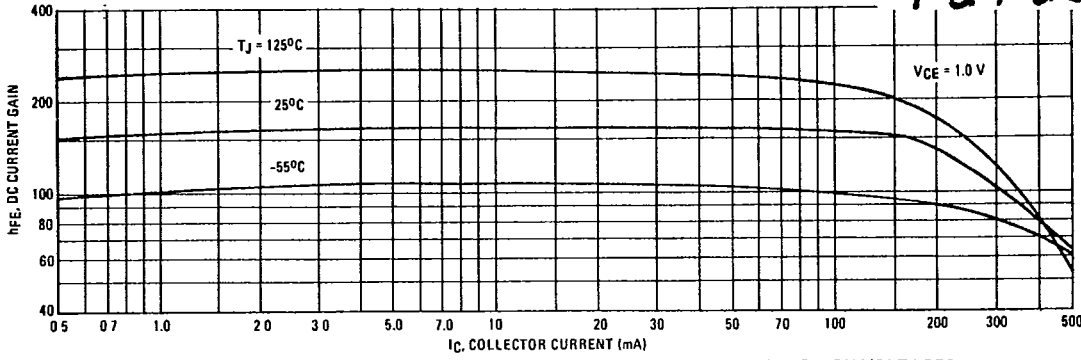


FIGURE 2 - COLLECTOR SATURATION REGION

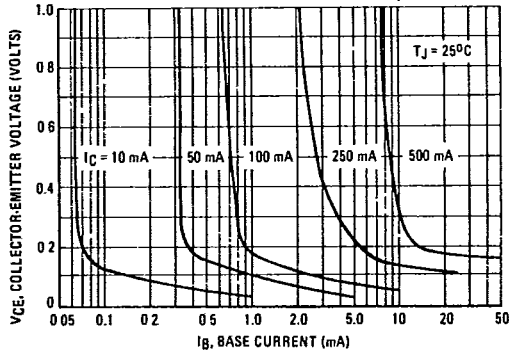


FIGURE 3 - ON VOLTAGES

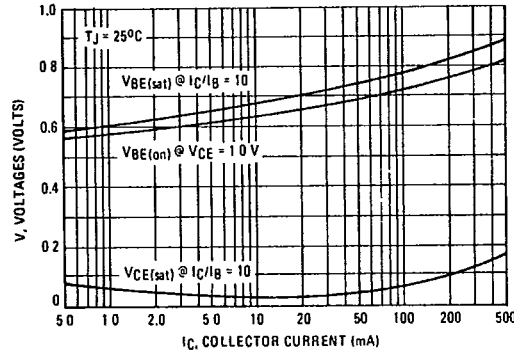


FIGURE 4 - BASE-EMITTER TEMPERATURE COEFFICIENT

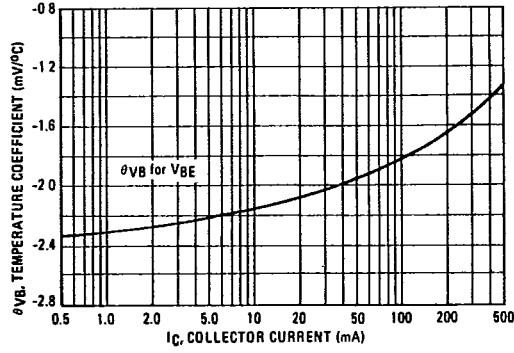


FIGURE 5 - CAPACITANCE

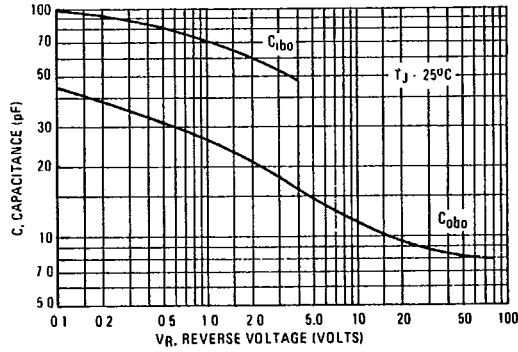


FIGURE 6 - CURRENT GAIN-BANDWIDTH PRODUCT

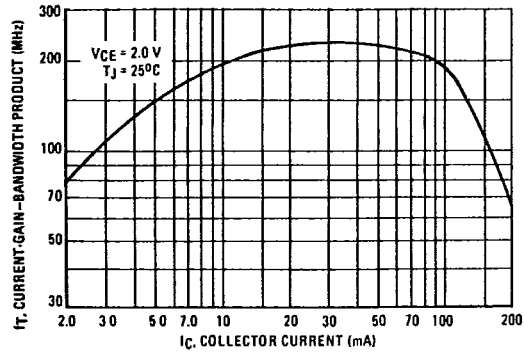


FIGURE 7 - ACTIVE REGION-SAFE OPERATING AREA

