

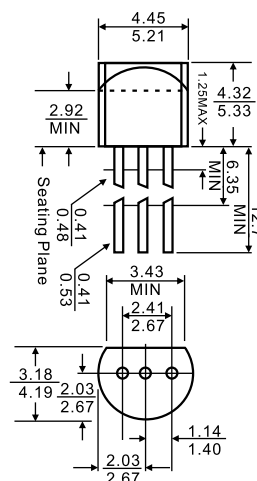
BC337/338(NPN)

TO-92 Bipolar Transistors



1. COLLECTOR
2. BASE
3. EMITTER

TO-92



Dimensions in inches and (millimeters)

Features

- ◇ Power dissipation

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

| Symbol | Parameter | Value | Units |
|------------------|--|---------|-------|
| V _{CBO} | Collector-Base Voltage BC337 | 50 | V |
| | BC338 | 30 | |
| V _{CEO} | Collector-Emitter Voltage BC337 | 45 | V |
| | BC338 | 25 | |
| V _{EBO} | Emitter-Base Voltage | 5 | V |
| I _C | Collector Current -Continuous | 800 | mA |
| P _D | Total Device Dissipation | 625 | mW |
| T _j | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55-150 | °C |

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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------------|--|-----|-----|-----|------|
| Collector-base breakdown voltage | V _{CBO} | I _C = 100uA, I _E =0 | 50 | | | V |
| | | | 30 | | | V |
| Collector-emitter breakdown voltage | V _{CEO} | I _C = 10mA, I _B =0 | 45 | | | V |
| | | | 25 | | | V |
| Emitter-base breakdown voltage | V _{EBO} | I _E = 10uA, I _C =0 | 5 | | | V |
| Collector cut-off current | I _{CBO} | V _{CB} = 45V, I _E =0 V _{CB} = 25V, I _E =0 | | | 0.1 | uA |
| | | | | | 0.1 | |
| Collector cut-off current | I _{CEO} | V _{CE} = 40V, I _B =0 V _{CE} = 20V, I _B =0 | | | 0.2 | uA |
| | | | | | 0.2 | |
| Emitter cut-off current | I _{EBO} | V _{EB} = 4 V, I _C =0 | | | 0.1 | uA |
| DC current gain | h _{FE(1)} | V _{CE} =1V, I _C = 100mA | 100 | | 630 | |
| | | | 100 | | 250 | |
| | | | 160 | | 400 | |
| | | | 250 | | 630 | |
| DC current gain | h _{FE(2)} | V _{CE} =1V, I _C = 300mA | 60 | | | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C =500mA, I _B = 50mA | | | 0.7 | V |
| Base-emitter saturation voltage | V _{BE(sat)} | I _C = 500mA, I _B =50mA | | | 1.2 | V |
| Base-emitter voltage | V _{BE} | V _{CE} =1V, I _C = 300mA | | | 1.2 | V |
| Transition frequency | f _T | V _{CE} = 5V, I _C = 10mA f = 100MHz | 210 | | | MHz |
| Collector Output Capacitance | C _{ob} | V _{CB} =10V, I _E =0 f=1MHz | | 15 | | pF |

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Typical Characteristics

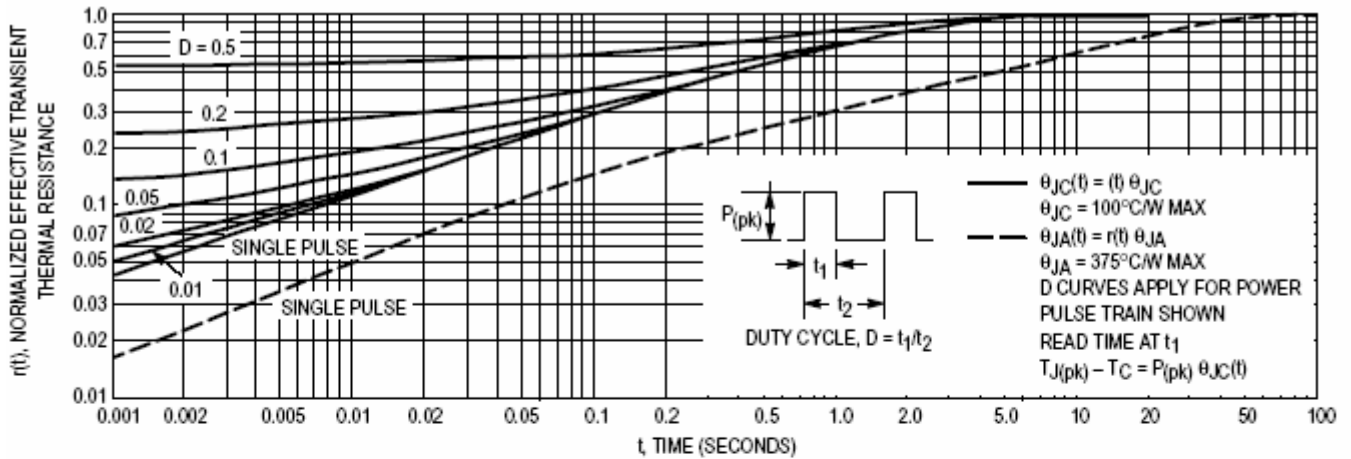


Figure 1. Thermal Response

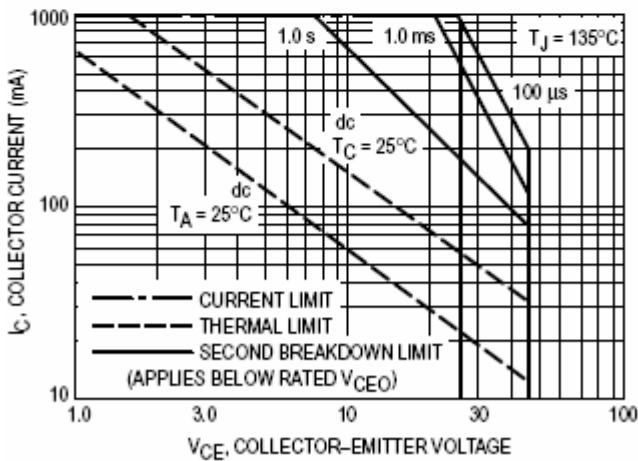


Figure 2. Active Region — Safe Operating Area

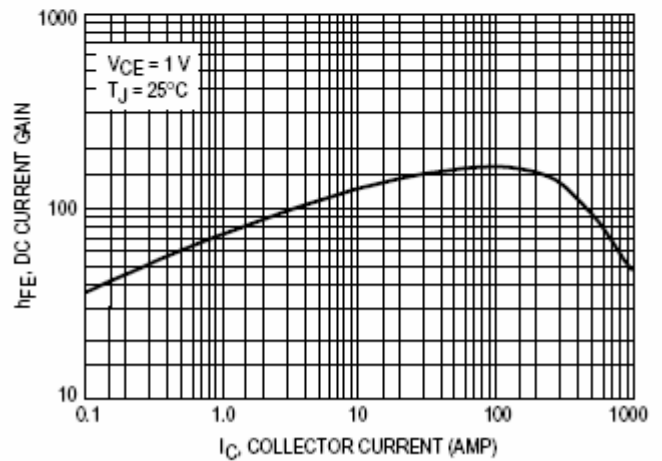


Figure 3. DC Current Gain

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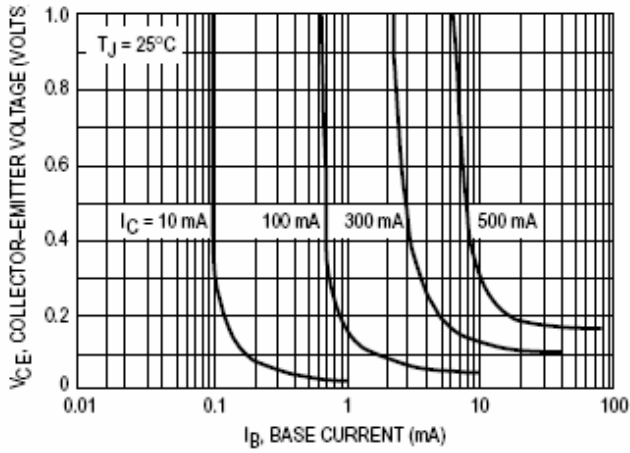


Figure 4. Saturation Region

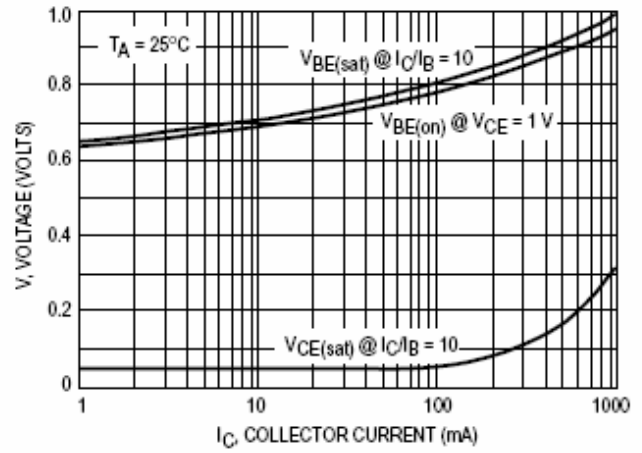


Figure 5. "On" Voltages

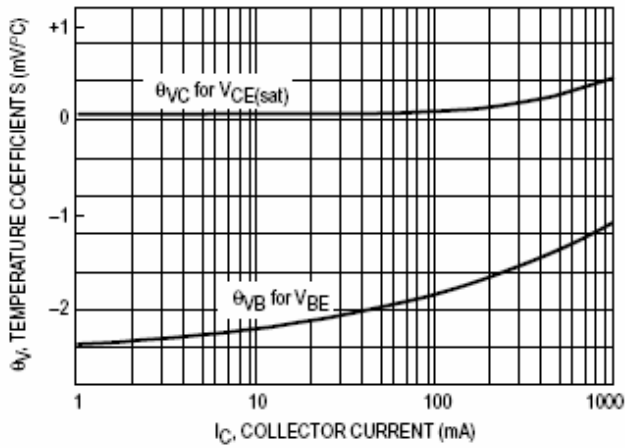


Figure 6. Temperature Coefficients

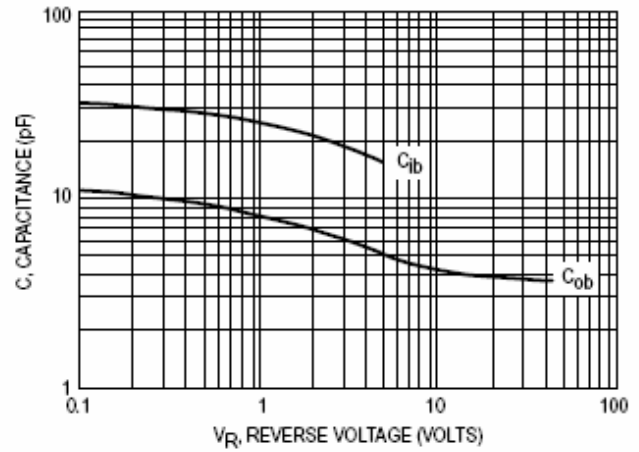


Figure 7. Capacitances

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