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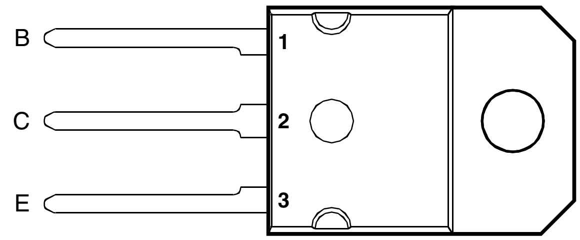
- **Rugged Triple-Diffused Planar Construction**
- **900 Volt Blocking Capability**

**SOT-93 PACKAGE (TOP VIEW)**




Pin 2 is in electrical contact with the mounting base.

MDTRAAA

## absolute maximum ratings at 25°C case temperature (unless otherwise noted)

| RATING | | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Collector-base voltage ($I_E$ = 0) | BU426<br>BU426A | $V_{CBO}$ | 800<br>900 | V |
| Collector-emitter voltage ($V_{BE}$ = 0) | BU426<br>BU426A | $V_{CES}$ | 800<br>900 | V |
| Collector-emitter voltage ($I_B$ = 0) | BU426<br>BU426A | $V_{CEO}$ | 375<br>400 | V |
| Continuous collector current | | $I_C$ | 6 | A |
| Peak collector current (see Note 1) | | $I_{CM}$ | 10 | A |
| Continuous base current | | $I_B$ | +2, -0.1 | A |
| Peak base current (see Note 1) | | $I_{BM}$ | ±3 | A |
| Continuous device dissipation at (or below) 50°C case temperature | | $P_{tot}$ | 70 | W |
| Operating junction temperature range | | $T_j$ | -65 to +150 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |

NOTE 1: This value applies for $t_p \le 2$ ms, duty cycle ≤ 2%.



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## electrical characteristics at 25°C case temperature (unless otherwise noted)

| PARAMETER | | TEST CONDITIONS | | | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| $V_{CEO(sus)}$ | Collector-emitter sustaining voltage | $I_C$ = 100 mA | L = 25 mH | (see Note 2) | BU426<br>BU426A | 375<br>400 | | | V |
| $I_{CES}$ | Collector-emitter cut-off current | $V_{CE}$ = 800 V<br>$V_{CE}$ = 900 V<br>$V_{CE}$ = 800 V<br>$V_{CE}$ = 900 V | $V_{BE}$ = 0<br>$V_{BE}$ = 0<br>$V_{BE}$ = 0<br>$V_{BE}$ = 0 | <br><br>$T_C$ = 125°C<br>$T_C$ = 125°C | BU426<br>BU426A<br>BU426<br>BU426A | | | 1<br>1<br>2<br>2 | mA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$ = 10 V | $I_C$ = 0 | | | | | 10 | mA |
| $h_{FE}$ | Forward current transfer ratio | $V_{CE}$ = 5 V | $I_C$ = 0.6 A | (see Notes 3 and 4) | | | 30 | 60 | |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_B$ = 0.5 A<br>$I_B$ = 1.25 A | $I_C$ = 2.5 A<br>$I_C$ = 4 A | (see Notes 3 and 4) | | | | 1.5<br>3 | V |
| $V_{BE(sat)}$ | Base-emitter saturation voltage | $I_B$ = 0.5 A<br>$I_B$ = 1.25 A | $I_C$ = 2.5 A<br>$I_C$ = 4 A | (see Notes 3 and 4) | | | | 1.4<br>1.6 | V |

NOTES: 2. Inductive loop switching measurement.
3. These parameters must be measured using pulse techniques, $t_p$ = 300 µs, duty cycle ≤ 2%.
4. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.

## thermal characteristics

| PARAMETER | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| $R_{\theta JC}$ | Junction to case thermal resistance | | | 1.1 | °C/W |

## resistive-load-switching characteristics at 25°C case temperature (unless otherwise noted)

| PARAMETER | | TEST CONDITIONS † | | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|---|
| $t_{on}$ | Turn on time | $I_C$ = 2.5 A<br>$V_{CC}$ = 250 V | $I_{B(on)}$ = 0.5 A<br>(see Figures 1 and 2) | $I_{B(off)}$ = -1 A | | 0.3 | 0.6 | µs |
| $t_s$ | Storage time | | | | | 2 | 3.5 | µs |
| $t_f$ | Fall time | | | | | 0.15 | | µs |
| $t_f$ | Fall time | $I_C$ = 2.5 A<br>$V_{CC}$ = 250 V | $I_{B(on)}$ = 0.5 A<br>$T_C$ = 95°C | $I_{B(off)}$ = -1 A | | 0.2 | 0.75 | µs |

† Voltage and current values shown are nominal; exact values vary slightly with transistor parameters.

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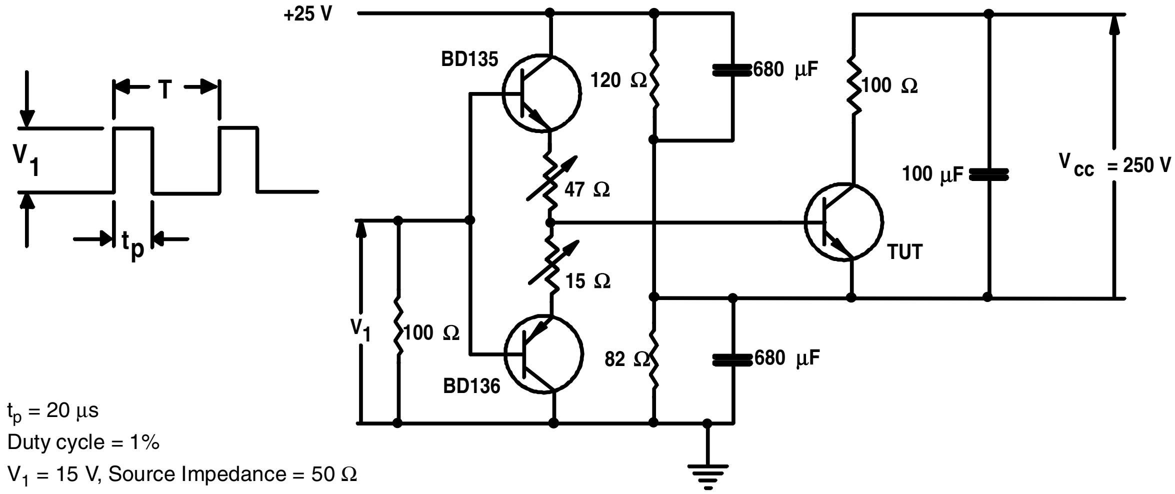
## PARAMETER MEASUREMENT INFORMATION




$t_p$ = 20 µs
Duty cycle = 1%
$V_1$ = 15 V, Source Impedance = 50 Ω

**Figure 1. Resistive-Load Switching Test Circuit**

A - B = $t_d$
B - C = $t_r$
E - F = $t_f$
D - E = $t_s$
A - C = $t_{on}$
D - F = $t_{off}$

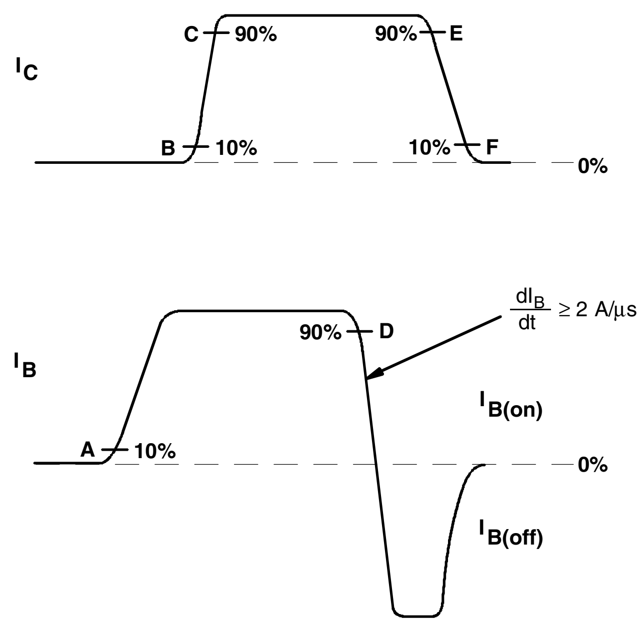



**Figure 2. Resistive-Load Switching Waveforms**

## TYPICAL CHARACTERISTICS

### TYPICAL DC CURRENT GAIN vs COLLECTOR CURRENT

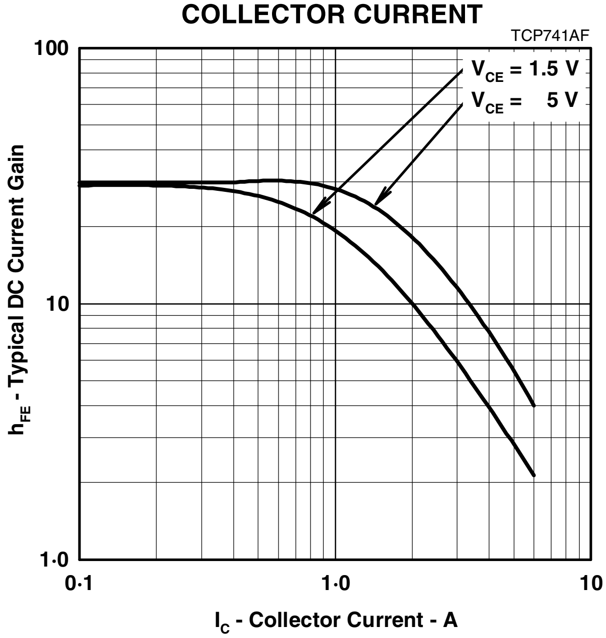



Figure 3.

### COLLECTOR-EMITTER SATURATION VOLTAGE vs BASE CURRENT

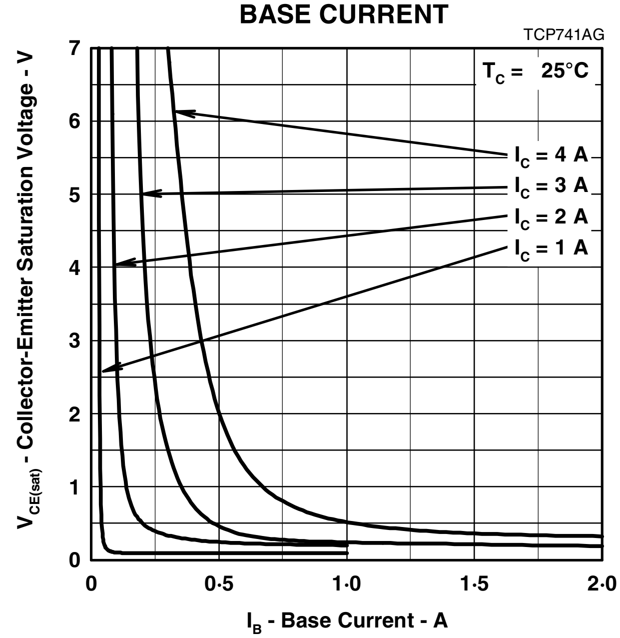



Figure 4.

### COLLECTOR-EMITTER SATURATION VOLTAGE vs BASE CURRENT

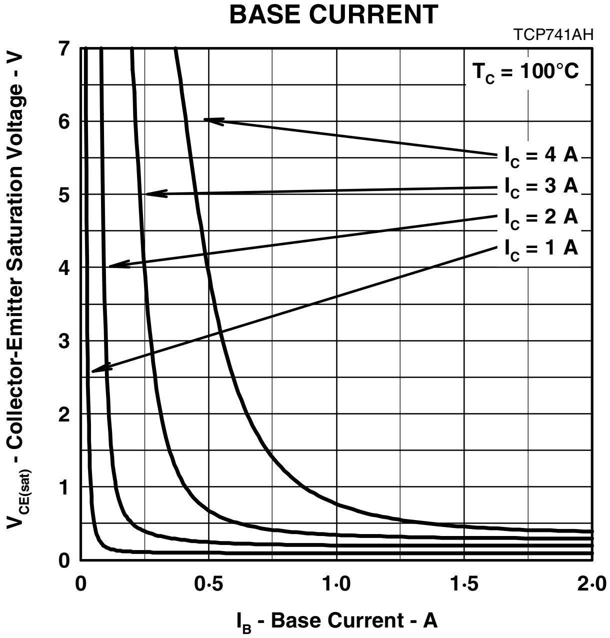



Figure 5.

### BASE-EMITTER SATURATION VOLTAGE vs BASE CURRENT

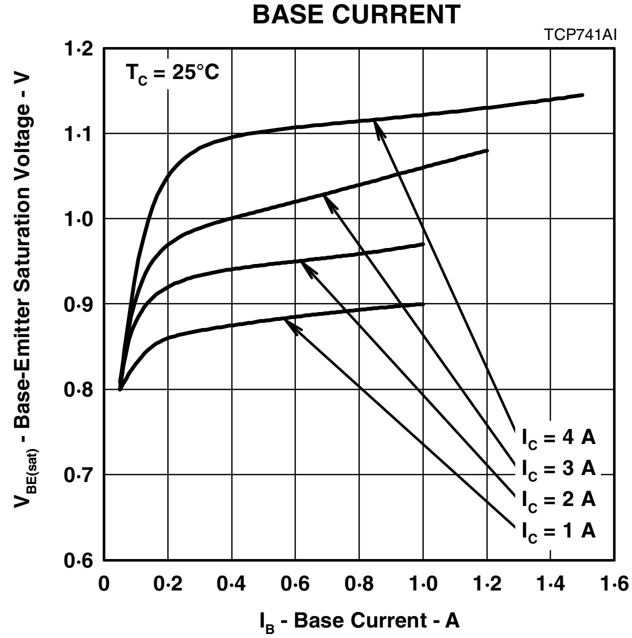



Figure 6.

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## MAXIMUM SAFE OPERATING REGIONS

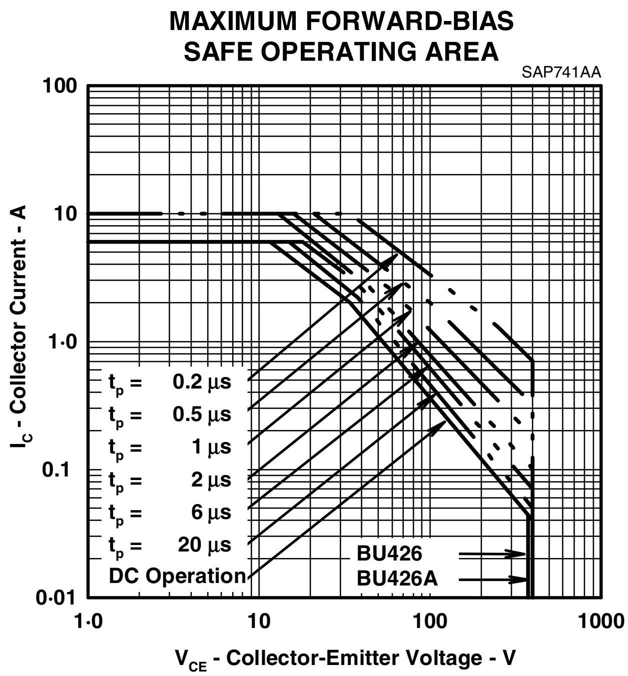


Figure 7.