File Number **1243**

**BUX37**

# 15-Ampere N-P-N Monolithic Darlington Power Transistor

400 V , 35 W
Gain of 20 at 15A

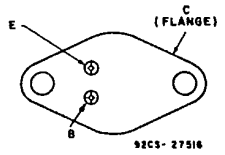
***Features:***

- *High voltage breakdown*

***Applications:***

- *Power switching*
- *Solenoid drivers*
- *Automotive ignition*
- *Series and shunt regulators*

**TERMINAL DESIGNATIONS**




JEDEC TO-204AA

The RCA-BUX37 is a monolithic n-p-n silicon Darlington transistor designed for automotive electronic power applications. The construction of this device provides good forward and reverse second-breakdown capability.

The RCA-BUX37 is supplied in the steel JEDEC TO-204AA hermetic package.

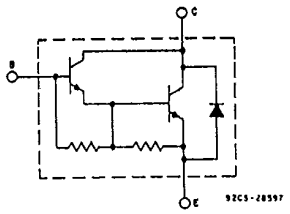



*Fig. 1—Schematic diagram for all types.*

**MAXIMUM RATINGS,** *Absolute-Maximum Values:*

| | | |
|---|---|---|
| $V_{CEO(sus)}$ | 400 | V |
| $V_{EBO}$ | 7 | V |
| $I_C$ | 15 | A |
| $I_B$ | 4 | A |
| $P_T$ | | |
| $T_C \leq 100°C$ | 35 | W |
| $T_C > 100°C$ | Derate Linearly 0.7 | W/°C |
| $T_{stg}, T_J$ | −65 to 150 | °C |
| $T_L$ | | |
| At distances ≥ 1/8 in. (3.17 mm) from case for 10 s max. | 235 | °C |

## BUX37

**ELECTRICAL CHARACTERISTICS,** *at Case Temperature ($T_C$) = 25°C Unless Otherwise Specified*

| CHARACTERISTIC | TEST CONDITIONS | | | | LIMITS | | UNITS |
|---|---|---|---|---|---|---|---|
| | VOLTAGE V dc | | CURRENT A dc | | BUX37 | | |
| | $V_{CE}$ | $V_{BE}$ | $I_C$ | $I_B$ | Min. | Max. | |
| $I_{CEO}$ | 400 | | | 0 | — | 0.25 | mA |
| $V_{CEO(sus)}$[b] L = 1.5 mH | | | 5[a] | 0 | 400 | — | V |
| $V_{(BR)EBO}$ $I_E$ = 50 mA | | | 0 | | 7 | — | V |
| $h_{FE}$ | 5 | | 15[a] | | 20 | — | |
| $V_{BE(sat)}$ | | | 10[a] | 0.15 | — | 2.7 | V |
| $T_C$ = −40°C | | | 10[a] | 0.15 | — | 3.5 | V |
| $V_{CE(sat)}$ | | | 7[a] | 0.07 | — | 1.5 | V |
| | | | 10[a] | 0.15 | — | 2 | V |
| $T_C$ = −40°C | | | 10[a] | 0.15 | — | 2.9 | V |
| $R_{\theta JC}$ | | | | | — | 1.5 | °C/W |

[a] Pulsed; pulse duration = 300 μs, duty factor ≤2%.

[b] **CAUTION:** The sustaining voltage $V_{CEO(sus)}$ *MUST NOT* be measured on a curve tracer.

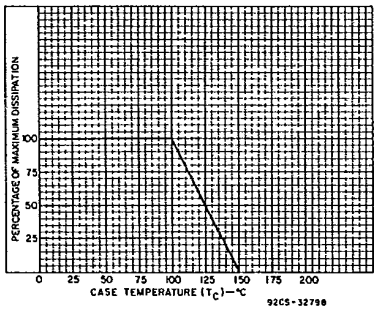



*Fig. 2 — Derating curve.*

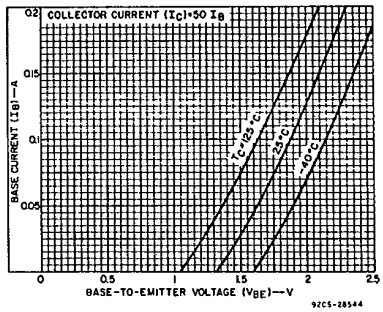



*Fig. 3 — Typical input characteristics.*

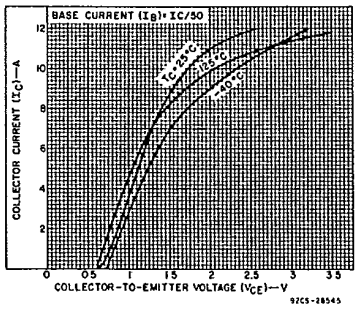



*Fig. 4 — Typical output characteristics.*

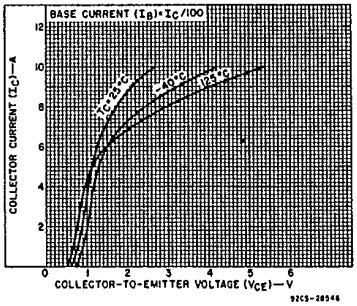



*Fig. 5 — Typical output characteristics.*

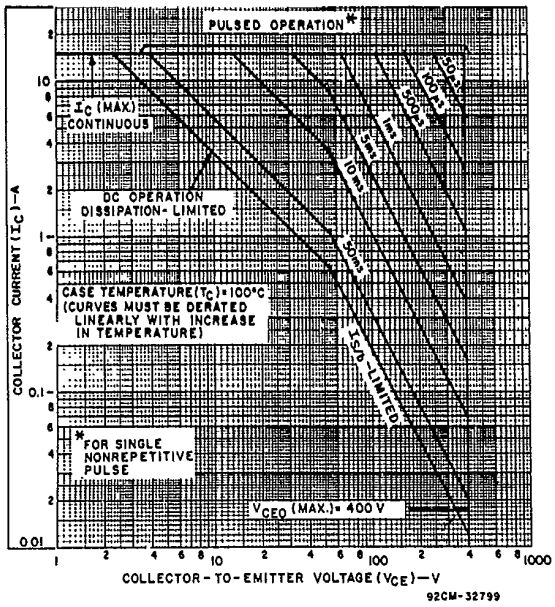



*Fig. 6 — Maximum operating areas ($T_C$ = 100° C).*

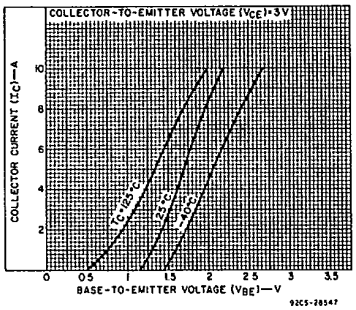



*Fig. 7 — Typical transfer characteristics.*