

File Number 1243

BUX37

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

400 V, 35 W  
Gain of 20 at 15A

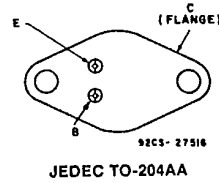
**Features:**

- High voltage breakdown

**Applications:**

- Power switching
- Automotive Ignition
- Solenoid drivers
- Series and shunt regulators

**TERMINAL DESIGNATIONS**



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.

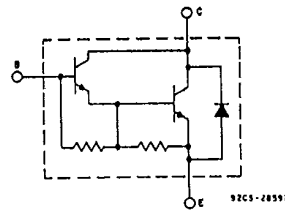


Fig. 1—Schematic diagram for all types.

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

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

**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 <sup>a</sup>	0	400	—	
$V_{(BR)EBO}$ $I_E = 50$ mA			0		7	—	V
$h_{FE}$	5		15 <sup>a</sup>		20	—	
$V_{BE(sat)}$			10 <sup>a</sup>	0.15	—	2.7	V
$T_C = -40^\circ\text{C}$			10 <sup>a</sup>	0.15	—	3.5	
$V_{CE(sat)}$			7 <sup>a</sup>	0.07	—	1.5	
$T_C = -40^\circ\text{C}$			10 <sup>a</sup>	0.15	—	2	
$R_{\theta JC}$					—	1.5	$^\circ\text{C/W}$

<sup>a</sup> Pulsed; pulse duration = 300  $\mu\text{s}$ , duty factor  $\leq 2\%$ .

<sup>b</sup> CAUTION: The sustaining voltage  $V_{CEO(sus)}$  MUST NOT be measured on a curve tracer.

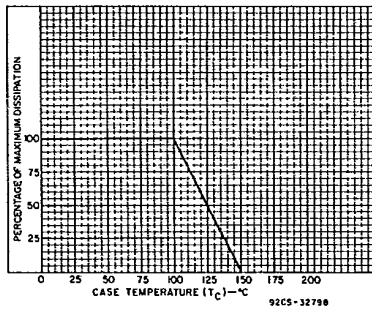


Fig. 2 — Derating curve.

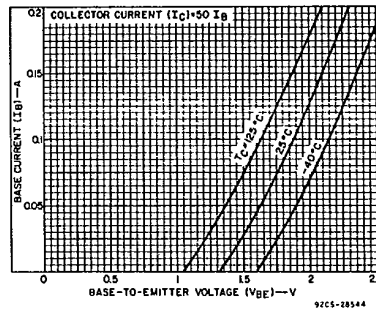


Fig. 3 — Typical input characteristics.

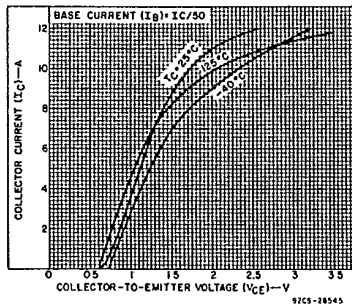


Fig. 4 — Typical output characteristics.

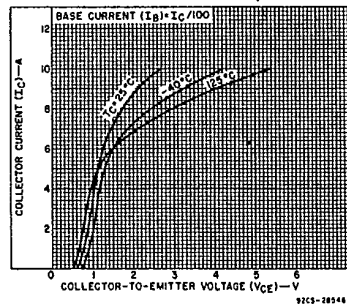


Fig. 5 — Typical output characteristics.

BUX37

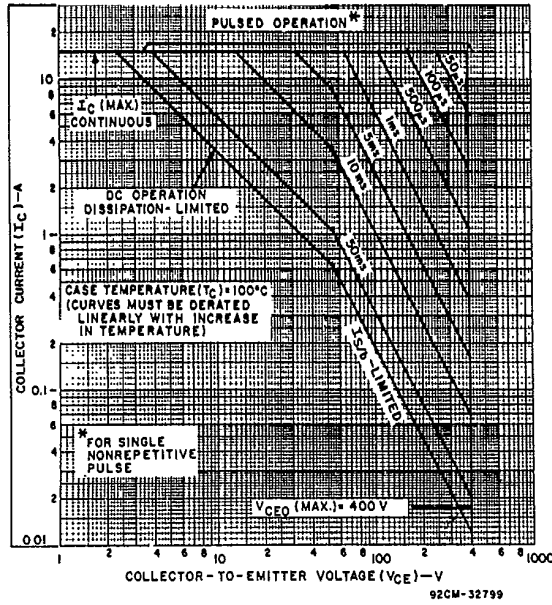


Fig. 6 — Maximum operating areas ( $T_c = 100^\circ C$ ).

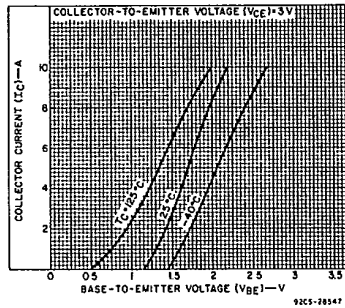


Fig. 7 — Typical transfer characteristics.

This datasheet has been downloaded from:

[www.DatasheetCatalog.com](http://www.DatasheetCatalog.com)

Datasheets for electronic components.