

File Number 1243

BUX37

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

400 V, 35 W
Gain of 20 at 15A

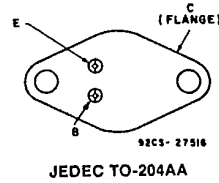
Features:

- 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.

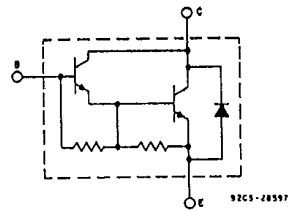


Fig. 1—Schematic diagram for all types.

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

^a Pulsed; pulse duration = 300 μs , duty factor $\leq 2\%$.

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

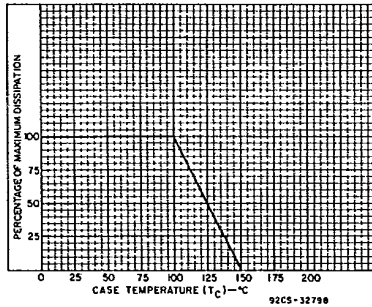


Fig. 2 — Derating curve.

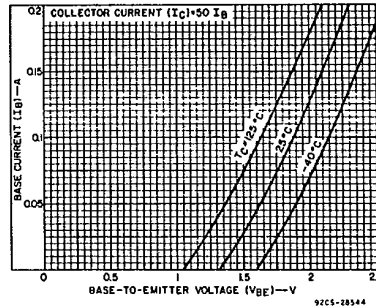


Fig. 3 — Typical input characteristics.

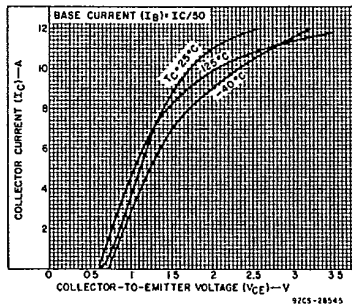


Fig. 4 — Typical output characteristics.

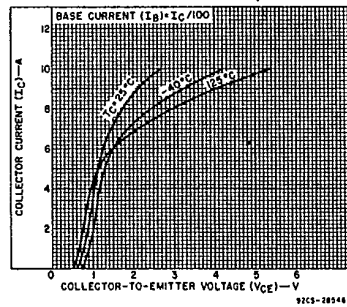


Fig. 5 — Typical output characteristics.

BUX37

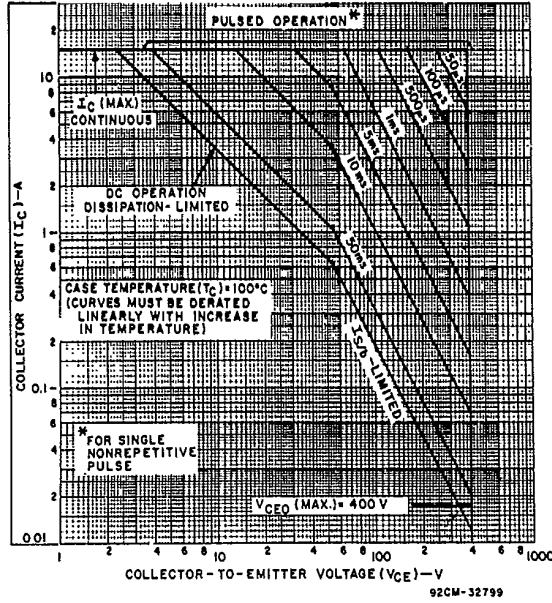


Fig. 6 — Maximum operating areas ($T_c = 100^\circ C$).

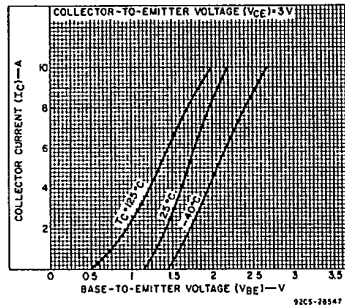


Fig. 7 — Typical transfer characteristics.