File Number **1243**

BUX37

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

400 V , 35 W
Gain of 20 at 15A

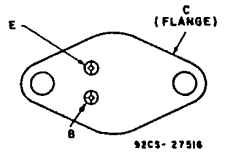
Features:

- *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.

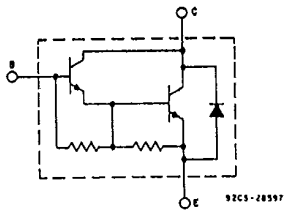


Fig. 1—Schematic diagram for all types.

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.

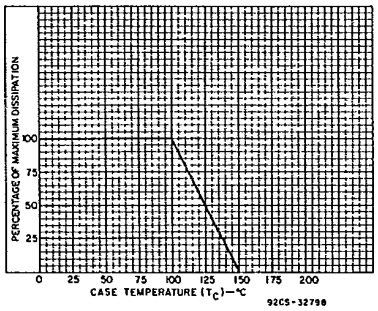


Fig. 2 — Derating curve.

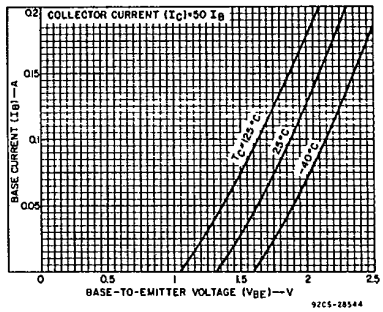


Fig. 3 — Typical input characteristics.

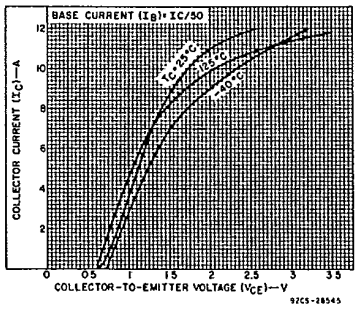


Fig. 4 — Typical output characteristics.

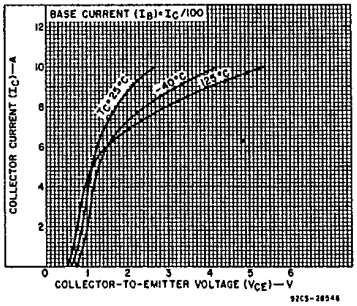


Fig. 5 — Typical output characteristics.

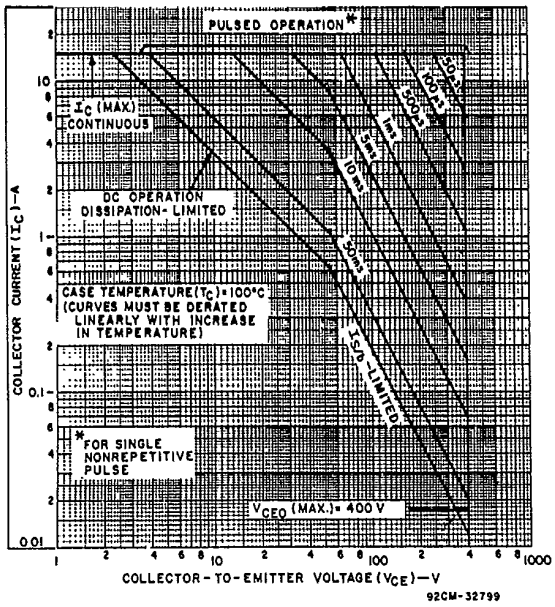


Fig. 6 — Maximum operating areas (T_C = 100° C).

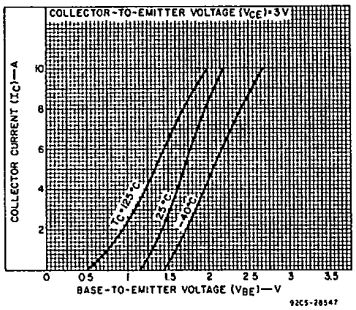


Fig. 7 — Typical transfer characteristics.