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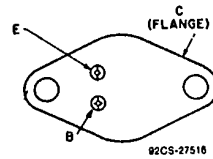
BUX11A

**High-Current, High-Power,
High-Speed Silicon N-P-N
Power Transistor**

Features:

- $V_{CE0} - 190 V$
- $I_C - 20 A$
- $P_T - 200 W$

TERMINAL DESIGNATIONS



JEDEC TO-204AA

The RCA-BUX11A epitaxial-base silicon n-p-n transistor features high-voltage and high-current capabilities together with fast switching speed at low saturation voltage. It is especially suitable for control amplifiers and power-switching circuits, such as converters, inverters, switching regulators, and switching-control amplifiers.

The RCA-BUX11A is supplied in a steel JEDEC TO-204AA hermetic package.

MAXIMUM RATINGS, Absolute-Maximum Values:

	BUX11A	
V_{CBO}	250	V
V_{CE0}		
$R_{BE} = 100 \Omega$	240	V
V_{CE0}	190	V
V_{CEX}		
$V_{BE} = -1.5 V$	250	V
V_{EBO}	7	V
I_C	20	A
I_{CM}	25	A
I_B	4	A
P_T		
$T_C \leq 25^\circ C$	200	W
$T_C > 25^\circ C$ derate linearly	1.14	W/ $^\circ C$
T_{stg}, T_J	-65 to + 200	$^\circ C$
T_L		
At distances $\geq 1/32$ in. (0.8 mm) from seating plane for 10 s max.	235	$^\circ C$

3875081 G E SOLID STATE

01E 17597 D T-33-15

Pro Electron Power Transistors

BUX11A

ELECTRICAL CHARACTERISTICS, at Case Temperature (T_c) = 25° C unless otherwise specified

CHARACTERISTIC	TEST CONDITIONS				LIMITS		UNITS
	VOLTAGE V dc		CURRENT A dc		BUX11A		
	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	
I_{CEO}	160			0	—	1.5	mA
I_{CEX}	250	-1.5			—	1.5	
I_{CEX} $T_c = 125^\circ C$	250	-1.5			—	6	
I_{EBO}		-5			—	1	V
$V_{CE0(SUS)}^a$ $I_E = 50 \text{ mA}$			0.2 ^b		190	—	
$V_{IBRIBEO}$			0		7	—	
h_{FE}	2		8 ^b		20	60	V
	4		15 ^b		10	—	
$V_{BE(sat)}$			15 ^b	1.88	—	1.8	
$V_{CE(sat)}$			8 ^b	0.8	—	0.6	V
			15 ^b	1.88	—	1.5	
$I_{S,b}$ $t_p = 1 \text{ s nonrep.}$	140				0.15	—	A
	18				11.1	—	MHz
f_T	15		1	—	8	—	
t_{ON}	150 ^c		15	1.88	—	1	μs
t_s $I_{B1} = I_{B2}$	150 ^c		15	1.88	—	1.5	
t_r $I_{B1} = I_{B2}$	150 ^c		15	1.88	—	0.4	
$R\theta_{JC}$					—	0.875	$^\circ C/W$

^aCAUTION: The sustaining voltage $V_{CE0(SUS)}$ MUST NOT be measured on a curve tracer.

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

^c V_{CC} .

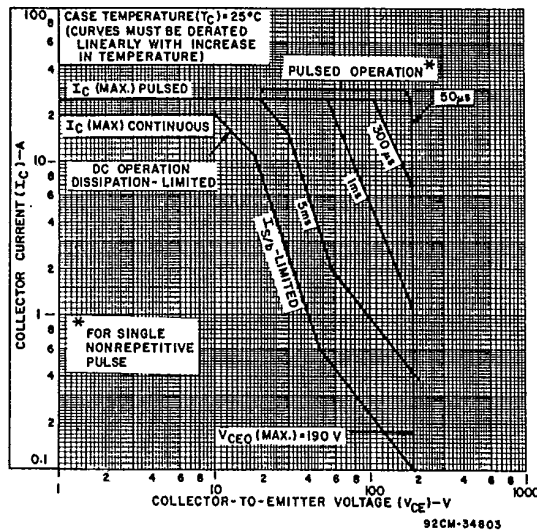


Fig. 1 — Maximum safe-operating areas for BUX11A ($T_c = 25^\circ C$).

BUX11A

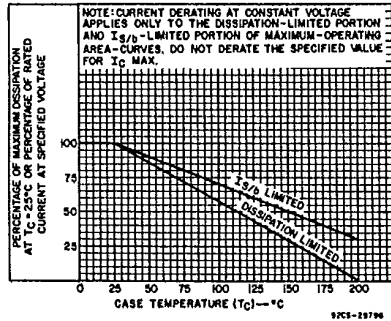


Fig. 2 — Derating curves for I_{B} and dissipation.

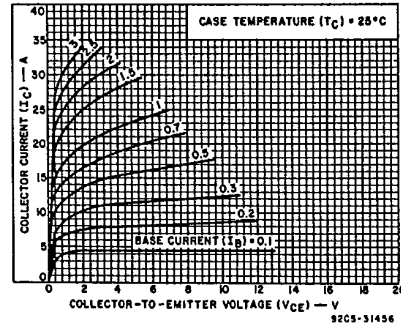


Fig. 3 — Typical output characteristics.

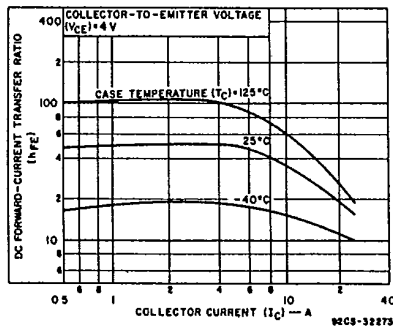


Fig. 4 — Typical dc beta characteristics.

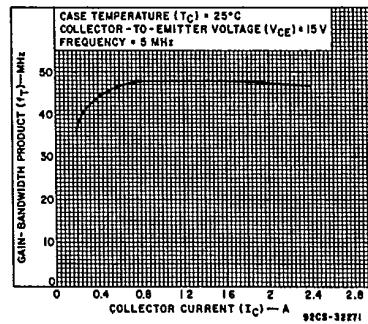


Fig. 5 — Typical gain-bandwidth product.

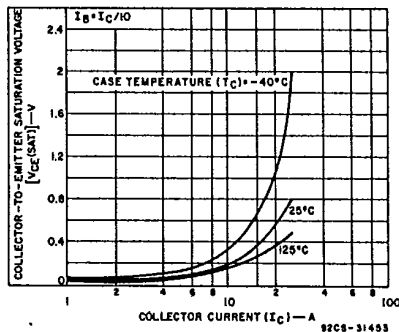


Fig. 6 — Typical collector-to-emitter saturation voltage characteristics.

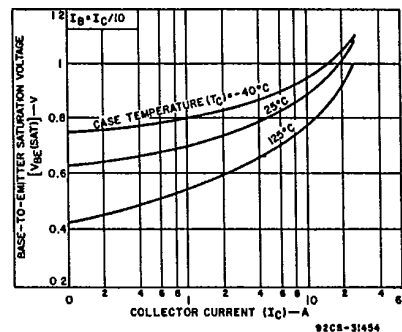


Fig. 7 — Typical base-to-emitter saturation voltage characteristics.

BUX11A'

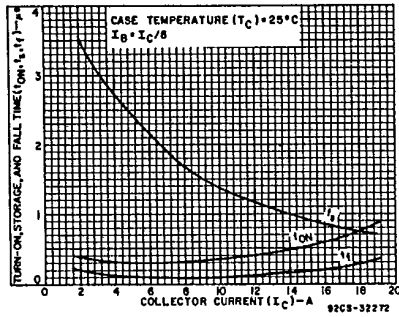


Fig. 8 — Typical saturated-switching times as a function of collector current.

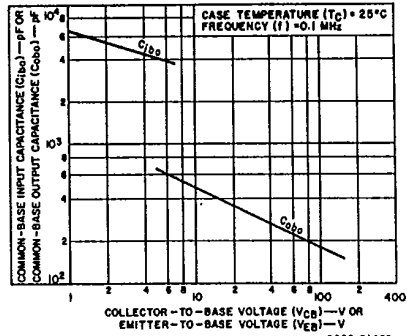


Fig. 9 — Typical common-base input (C_{ibo}) or output (C_{obo}) capacitance characteristic.