

**BUX66, BUX66A, BUX66B, BUX66C**

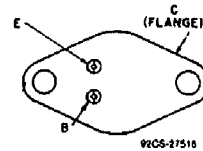
**High Voltage Silicon  
 P-N-P Transistors**

For High-Speed Switching and  
 Linear-Amplifier Applications

**Features:**

- High voltage ratings:  
 $V_{CEO(SUS)}$  = -150 V max. (BUX66)  
 = -250 V max. (BUX66A)  
 = -300 V max. (BUX66B)  
 = -350 V max. (BUX66C)
- Large safe-operating area.

**TERMINAL DESIGNATIONS**



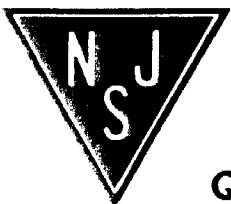
JEDEC TO-213AA

The RCA-BUX66, BUX66A, BUX66B, and BUX66C are silicon p-n-p transistors with high breakdown voltages and fast switching speeds. These transistors are intended for a wide variety of applications in ac/dc commercial equipment.

Typical applications include high-voltage operational and linear amplifiers, high-voltage switches, switching regulators, converters, and inverters.

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

	BUX66	BUX66A	BUX66B	BUX66C	
$V_{CBO}$ .....	-200	-300	-350	-400	V
$V_{CEV(SUS)}$ $V_{BE} = -1.5 V$ .....	-200	-300	-350	-400	V
$V_{CER(SUS)}$ $R_{BE} = 100\Omega$ .....	-175	-275	-325	-375	V
$V_{CEO(SUS)}$ .....	-150	-250	-300	-350	V
$V_{EBO}$ .....	-6	-6	-6	-6	V
$I_C$ .....	-2	-2	-2	-2	A
$I_{CM}$ .....	-5	-5	-5	-5	A
$I_B$ .....	-1	-1	-1	-1	A
$P_T$ Up to 25°C .....	35	35	35	35	W
Above 25°C, Derate linearly. ....	0.2	0.2	0.2	0.2	W/°C
$T_J, T_{stg}$ .....			-65 to 200		°C
$T_L$ At distance 1/16 in. (1.58 mm) from seating plane for 10 s max. ....	235	235	235	235	°C



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

# BUX66, BUX66A, BUX66B, BUX66C

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

CHARACTERISTIC SYMBOL	TEST CONDITIONS				LIMITS				UNITS
	VOLTAGE V dc		CURRENT A dc		BUX66		BUX66A		
	V <sub>CE</sub>	V <sub>BE</sub>	I <sub>C</sub>	I <sub>B</sub>	Min.	Max.	Min.	Max.	
I <sub>CEO</sub>	-150			0	-	-10	-	-10	mA
I <sub>CEX</sub>	-200	1.5			-	-8	-	-	
	-300	1.5			-	-	-	-8	
T <sub>C</sub> = 100°C	-200	1.5			-	-10	-	-	
	-300	1.5			-	-	-	-10	
I <sub>EBO</sub>		6	0		-	-1	-	-1	mA
h <sub>FE</sub>	-5		-1 <sup>a</sup>		10	150	10	150	
V <sub>CEO(sus)</sub>			-0.2 <sup>a</sup>	0	-150 <sup>c</sup>	-	-250 <sup>c</sup>	-	V
V <sub>CEB(sus)</sub> R <sub>BE</sub> = 50 Ω			-0.2		-175 <sup>c</sup>	-	-275 <sup>c</sup>	-	
V <sub>BE(sat)</sub>			-1 <sup>a</sup>	-0.15	-	-1.5	-	-1.5	V
V <sub>CE(sat)</sub>			-1 <sup>a</sup>	-0.15	-	-2.5	-	-2.5	V
C <sub>obo</sub> V <sub>CB</sub> = 10 V f = 1 MHz					-	220	-	220	pF
I <sub>S/b</sub> t = 1 s, nonrep.	-40				-875	-	-875	-	mA
h <sub>fe</sub>   f = 5 MHz	-10		-0.2		4	-	4	-	
t <sub>r</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	0.6	-	0.6	μs
t <sub>s</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	2.5	-	2.5	
t <sub>f</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	0.6	-	0.6	
R <sub>θJC</sub>					-	5	-	5	°C/W

<sup>a</sup> Pulsed: Pulse duration = 300 μs; duty factor ≤ 2%.

<sup>b</sup> I<sub>B1</sub> = I<sub>B2</sub>

<sup>c</sup> Sustaining voltages, V<sub>CEO(sus)</sub> and V<sub>CEB(sus)</sub> MUST NOT be measured on a curve tracer.

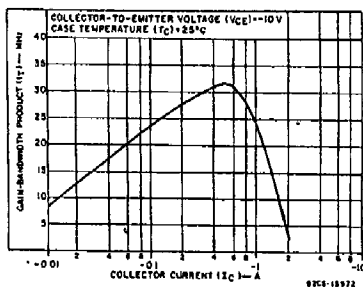


Fig. 1 - Typical gain-bandwidth product for all types.

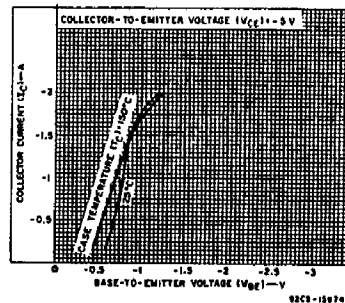


Fig. 2 - Typical transfer characteristics for all types.

# BUX66, BUX66A, BUX66B, BUX66C

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

CHARACTERISTIC SYMBOL	TEST CONDITIONS				LIMITS				UNITS
	VOLTAGE V dc		CURRENT A dc		BUX66B		BUX66C		
	V <sub>CE</sub>	V <sub>BE</sub>	I <sub>C</sub>	I <sub>B</sub>	Min.	Max.	Min.	Max.	
I <sub>CEO</sub>	-150			0	-	-5	-	-5	mA
I <sub>CEX</sub>	-350	1.5			-	-8	-	-	
	-400	1.5			-	-	-	-8	
T <sub>C</sub> = 100°C	-350	1.5			-	-10	-	-	
	-400	1.5			-	-	-	-10	
I <sub>EBO</sub>		6	0		-	-1	-	-1	mA
h <sub>FE</sub>	-5		-1 <sup>a</sup>		10	150	10	150	
V <sub>CEO(sus)</sub>			-0.2 <sup>a</sup>	0	-300 <sup>c</sup>	-	-350 <sup>c</sup>	-	V
V <sub>CER(sus)</sub> R <sub>BE</sub> = 50 Ω			-0.2		-325 <sup>c</sup>	-	-375 <sup>c</sup>	-	
V <sub>BE(sat)</sub>			-1 <sup>a</sup>	-0.15	-	-1.5	-	-1.5	V
V <sub>CE(sat)</sub>			-1 <sup>a</sup>	-0.15	-	-2.5	-	-2.5	V
C <sub>obo</sub> V <sub>CB</sub> = 10 V f = 1 MHz					-	220	-	220	pF
I <sub>S/b</sub> t = 1 s, nonrep.	-40				-875	-	-875	-	mA
h <sub>fe</sub>   f = 5 MHz	-10		-0.2		4	-	4	-	
t <sub>r</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	0.6	-	0.6	μs
t <sub>s</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	2.5	-	2.5	
t <sub>f</sub> V <sub>CC</sub> = -200 V			-1	-0.10 <sup>b</sup>	-	0.6	-	0.6	
R <sub>θJC</sub>					-	5	-	5	°C/W

a Pulsed: Pulse duration = 300 μs; duty factor ≤ 2%.      b I<sub>B1</sub> = I<sub>B2</sub>  
c Sustaining voltages, V<sub>CEO(sus)</sub> and V<sub>CER(sus)</sub> MUST NOT be measured on a curve tracer.

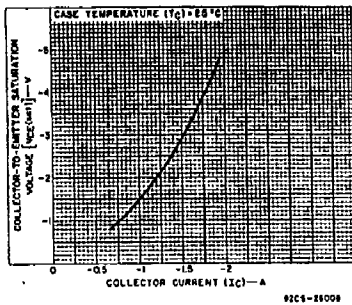


Fig. 3 — Typical saturation-voltage characteristic for all types.

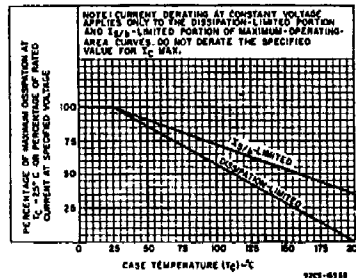


Fig. 4 — Derating curve for all types.