

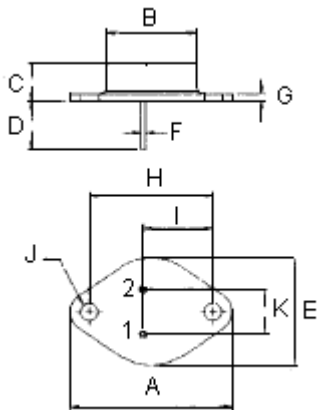


High voltage power transistor.
 designed for use in high-voltage, high-speed, power switching in inductive circuit, motor control, solenoid and relay drivers.

Features:

- Collector-emitter sustaining voltage - $V_{CEO(sus)} = 4000V$ (Minimum).
- Low collector-emitter saturation voltage - $V_{CE(sat)} = 3.0V$ (Maximum) at $I_C = 8.0A$, $I_B = 2.5A$.

TO-3



Pin 1. Base
 2. Emitter
 Collector (Case)

Dimensions	Minimum	Maximum
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

Dimensions : Millimetres

**NPN
 BUX80**

10 Ampere
 Power
 Transistors
 400 Volts
 100 Watts



TO-3

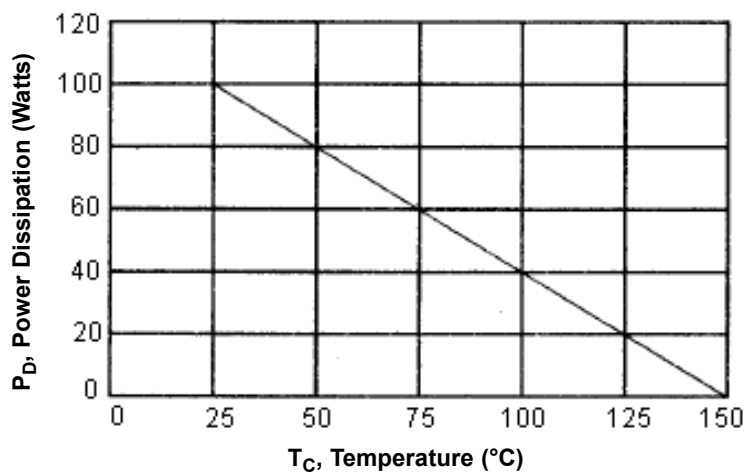
Maximum Ratings

Characteristic	Symbol	BUX80	Unit
Collector-Emitter Voltage	V_{CEO}	400	V
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}	800	
Emitter-Base Voltage	V_{EBO}	10	
Collector Current-Continuous -Peak	I_C	10 15	A
Base Current-Continuous	I_B	5.0	
Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	100 0.8	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200	$^\circ\text{C}$

Thermal Characteristics

Characteristic	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.25	$^\circ\text{C}/\text{W}$

Power Derating

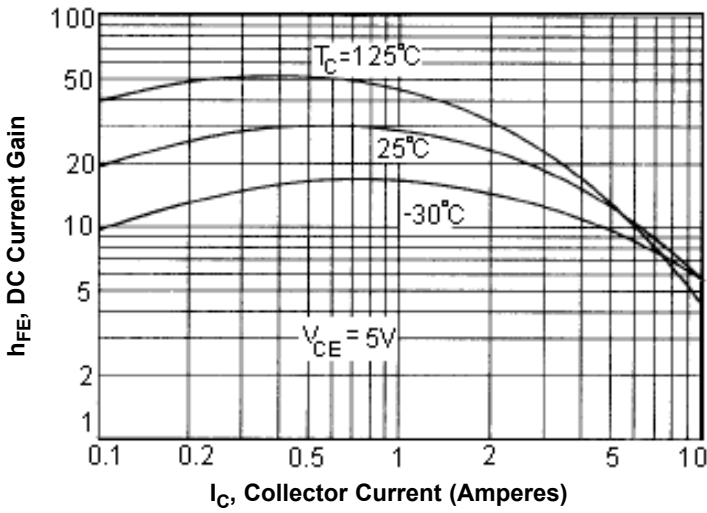


Electrical Characteristics ($T_C = 25^\circ\text{C}$ unless otherwise noted)

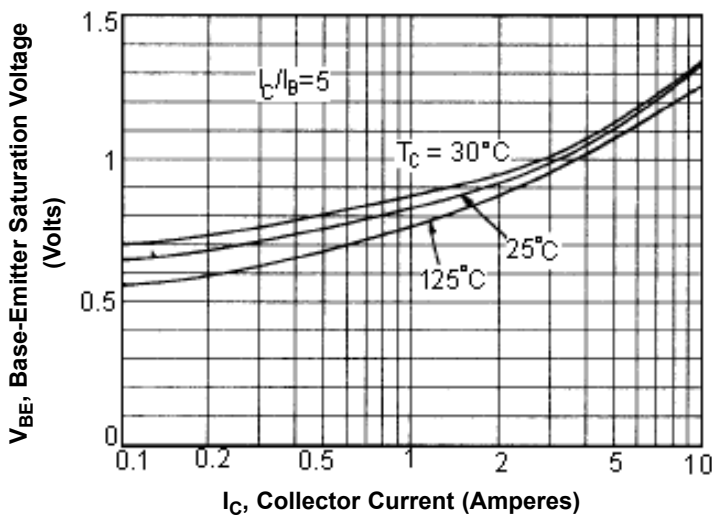
Characteristic	Symbol	Minimum	Maximum	Unit	
Off Characteristics					
Collector-Emitter Sustaining Voltage (1) ($I_C = 100\text{mA}$, $I_B = 0$, $L = 25\text{mH}$)	$V_{CEO(sus)}$	400	-	V	
Collector Cut off Current ($V_{CE} = 800\text{V}$, $V_{BE} = 0$) ($V_{CE} = 800\text{V}$, $V_{BE} = 0$, $T_C = 125^\circ\text{C}$)	I_{CES}	-	1.0 3.0	mA	
Emitter Cut off Current ($V_{EB} = 10\text{V}$, $I_C = 0$)	I_{EBO}	-	10		
On Characteristics (1)					
DC Current Gain ($I_C = 1.2\text{A}$, $V_{CE} = 5.0\text{V}$)	h_{FE}	30 (typical)	-	-	
Collector-Emitter Saturation Voltage ($I_C = 5.0\text{A}$, $I_B = 1.0\text{mA}$) ($I_C = 8.0\text{A}$, $I_B = 2.5\text{mA}$)	$V_{CE(sat)}$	-	1.5 3.0	V	
Base-Emitter Saturation Voltage ($I_C = 5.0\text{A}$, $I_B = 1.0\text{mA}$) ($I_C = 8.0\text{A}$, $I_B = 2.5\text{mA}$)	$V_{BE(sat)}$	-	1.4 1.8		
Switching Characteristics					
Turn On Time	$V_{CC} = 250\text{V}$, $I_C = 5.0\text{A}$	t_{on}	-	0.5	μs
Storage Time	$I_{B1} = 1.0\text{A}$, $I_{B2} = -2.0\text{A}$	t_s	-	3.5	
Fall Time	-	t_f	-	0.5	

(1) Pulse Test : Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

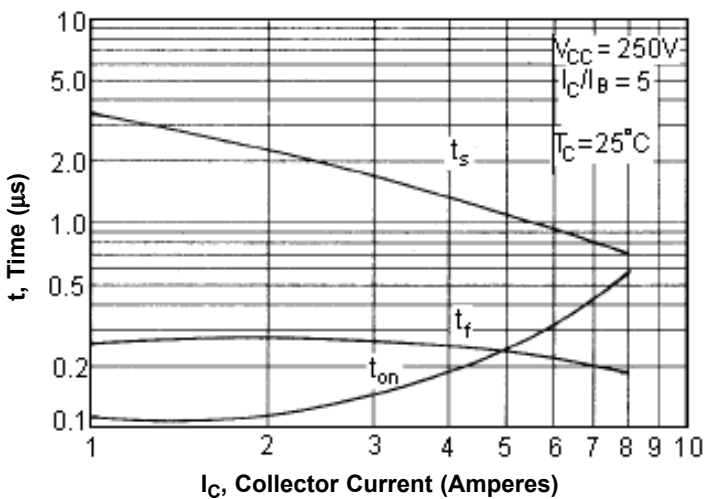
DC Current Gain



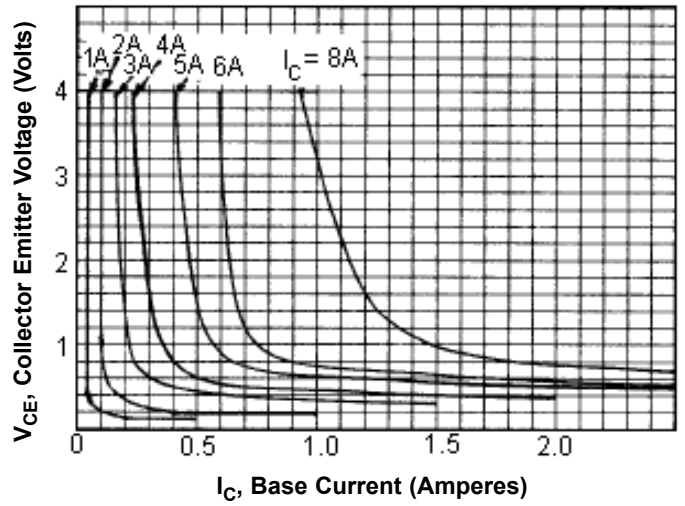
Base-Emitter Saturation Voltage



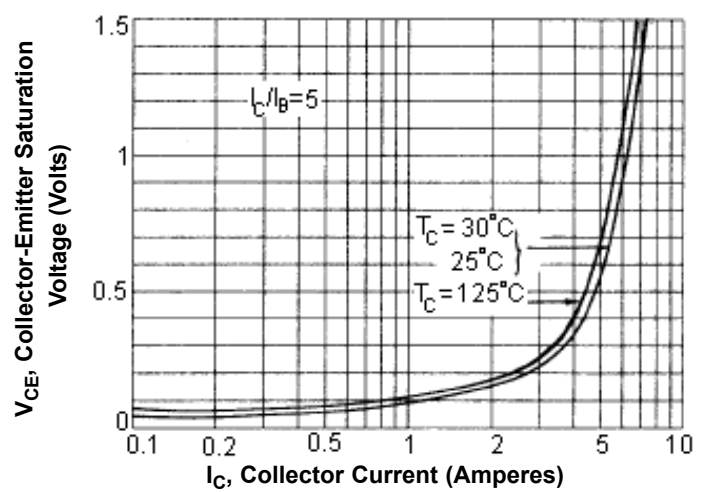
Switching Time



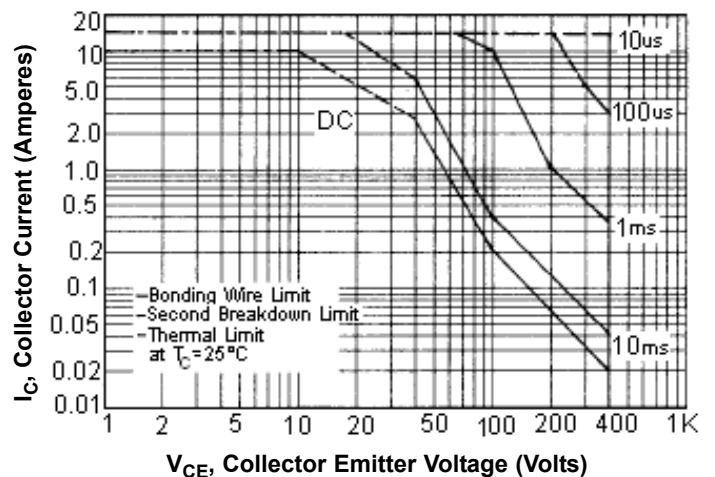
Collector Saturation Region



Collector-Emitter Saturation Voltage



Safe Operating Area



Part Number Table

Description	Part Number
Transistor, NPN, TO-3	BUX80

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