

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 -
 $V_{CE(sus)} = 400V$ (Min.)
- * Low Collector-Emitter Saturation Voltage -
 $V_{CE(sat)} = 3.0V$ (Max.) @ $I_C = 8.0 A$, $I_B = 2.5 A$

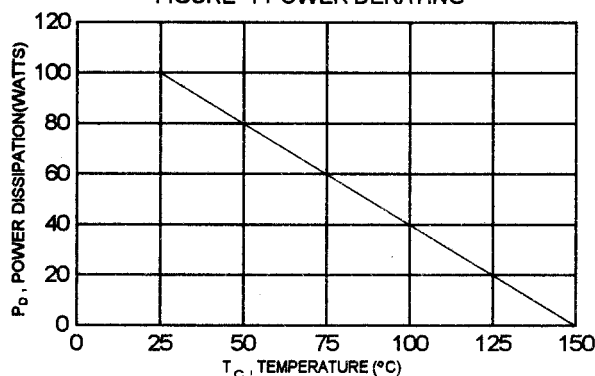
MAXIMUM RATINGS

Characteristic	Symbol	BUX80	Unit
Collector-Emitter Voltage	V_{CEO}	400	V
Collector-Emitter Voltage ($V_{BE}=0$)	V_{CES}	800	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current - Continuous - Peak	I_C	10 15	A
Base Current - Continuous	I_B	5.0	A
Total Power Dissipation @ $T_C=25^\circ C$ Derate above $25^\circ C$	P_D	100 0.8	W W/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	- 65 to +150	$^\circ C$

THERMAL CHARACTERISTICS

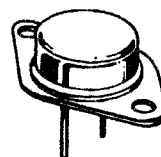
Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.25	$^\circ C/W$

FIGURE -1 POWER DERATING

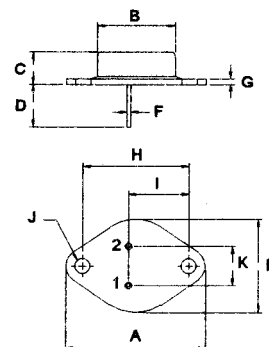


NPN
BUX80

10 AMPERE
POWER
TRANSISTORS
400 VOLTS
100 WATTS



TO-3



PIN 1. BASE
2. EMITTER
COLLECTOR (CASE)

DIM	MILLIMETERS	
	MIN	MAX
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

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

Characteristic	Symbol	Min	Max	Unit
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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 Cutoff 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 Cutoff Current ($V_{EB} = 10\text{ V}$, $I_C = 0$)	I_{EBO}		10	mA

ON CHARACTERISTICS (1)

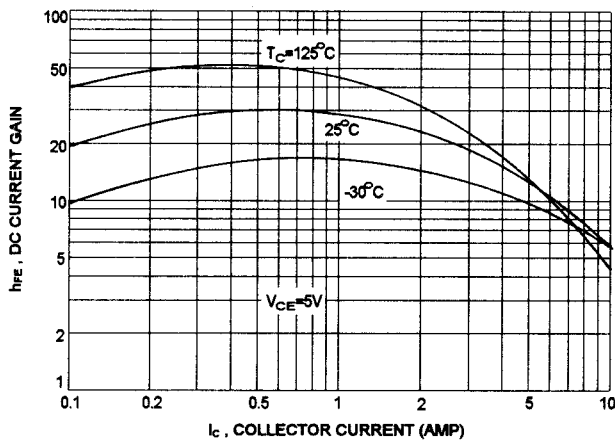
DC Current Gain ($I_C = 1.2\text{ A}$, $V_{CE} = 5.0\text{ V}$)	hFE	30(typ)		
Collector - Emitter Saturation Voltage ($I_C = 5.0\text{ A}$, $I_B = 1.0\text{ A}$) ($I_C = 8.0\text{ A}$, $I_B = 2.5\text{ A}$)	$V_{CE(sat)}$		1.5 3.0	V
Base - Emitter Saturation Voltage ($I_C = 5.0\text{ A}$, $I_B = 1.0\text{ A}$) ($I_C = 8.0\text{ A}$, $I_B = 2.5\text{ A}$)	$V_{BE(sat)}$		1.4 1.8	V

SWITCHING CHARACTERISTICS

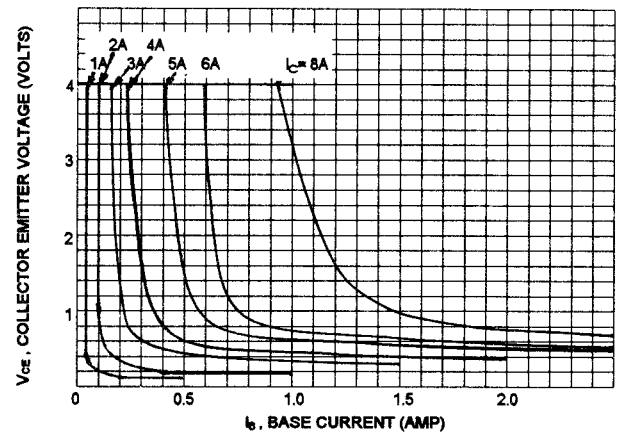
Turn On Time	$V_{CC} = 250\text{ V}$, $I_C = 5.0\text{ A}$ $I_{B1} = 1.0\text{ A}$, $I_{B2} = -2.0\text{ A}$	t_{on}		0.5	us
Storage Time		t_s		3.5	us
Fall Time		t_f		0.5	us

(1) Pulse Test: Pulse width = 300 us , Duty Cycle $\leq 2.0\%$

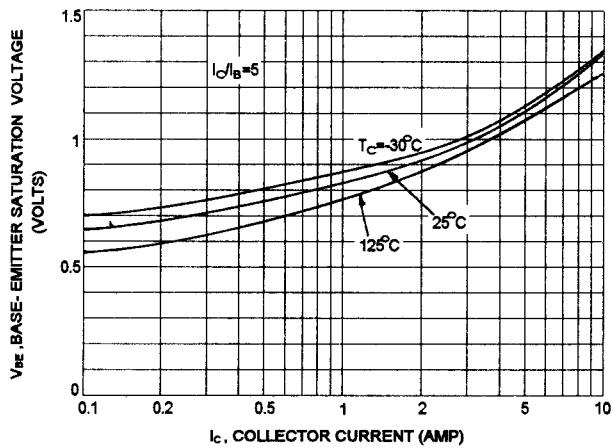
DC CURRENT GAIN



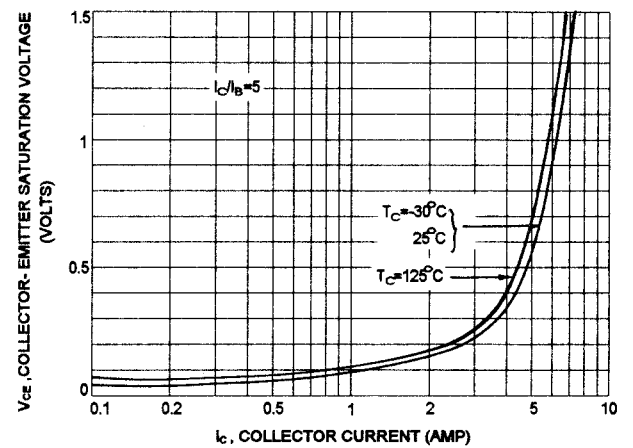
COLLECTOR SATURATION REGION



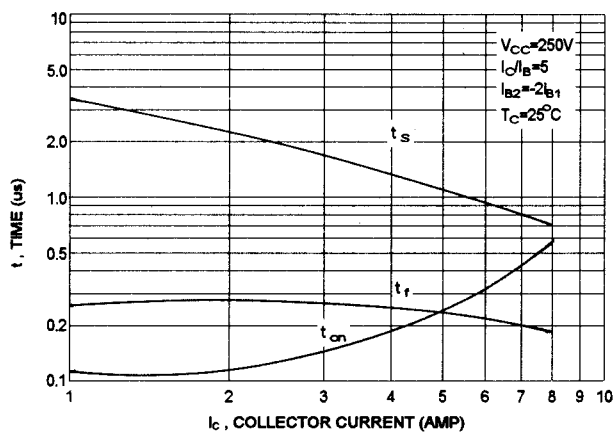
BASE-EMITTER SATURATION VOLTAGE



COLLECTOR-EMITTER SATURATION VOLTAGE



SWITCHING TIME



SAFE OPERATING AREA

