SWITCHMODE SERIES NPN POWER TRANSISTORS

... designed for use in high-voltage,high-speed,power switching regulators,converters,inverters,motor control system application.

FEATURES:

*Collector-Emitter Sustaining Voltage-
$V_{CEO(SUS)}$ = 400 V (Min) --BUX84
=450 V (Min) --BUX85

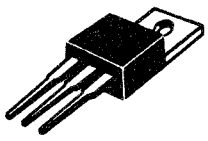
* Collector-Emitter Saturation Voltage -
$V_{CE(sat)}$ =1.0 V (Max.) @ I_C = 1.0 A, I_B = 0.2 A

* Switching Time - t_f =0.6 us (Max.) @ I_C =1.0 A

Boca Semiconductor Corp.
BSC

NPN
BUX84
BUX85

2 AMPERE
POWER
TRANASISTORS
400 - 450 VOLTS
40 WATTS



TO-220

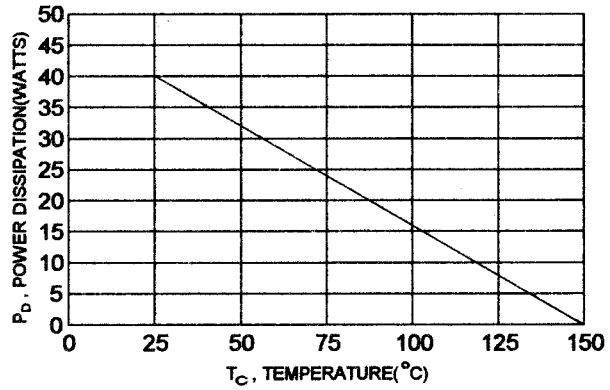
MAXIMUM RATINGS

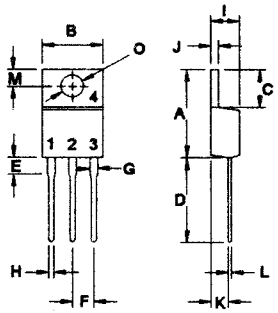
Characteristic	Symbol	BUX84	BUX85	Unit
Collector-Emitter Voltage	V_{CEO}	400	450	V
Collector-Emitter Voltage (V_{BE}=0)	V_{CES}	800	1000	V
Emitter-Base Voltage	V_{EBO}	10		V
Collector Current - Continuous - Peak	I_C I_{CM}	2.0 3.0		A
Base current	I_B	0.75		A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	40 0.32		W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	-65 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	3.125	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (I_C= 0.2 A, I_B= 0, L=25 mH)	BUX84 BUX85	$V_{CEO(sus)}$	 400 450		V
Collector Cutoff Current (V_{CE}= V_{CES}, V_{BE}=0) (V_{CE}= V_{CES}, V_{BE}=0 , T_C=125 °C)		I_{CES}		 0.2 1.5	mA
Emitter Cutoff Current (V_{EB}=5.0 V, I_C= 0)		I_{EBO}		 1.0	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C = 100 mA , V_{CE} = 5.0 V)		hFE	 30(typ)		
Collector-Emitter Saturation Voltage (I_C= 0.3 A, I_B= 30 mA) (I_C= 1.0 A, I_B= 0.2 A)		$V_{CE(sat)}$		 0.8 1.0	V
Base-Emitter Saturation Voltage (I_C= 1.0 A, I_B= 0.2 A)		$V_{BE(sat)}$		 1.1	V
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product (I_C = 0.2 A, V_{CE} = 10 V, f = 1.0 MHz)		f_T	 20 (typ)		MHz
SWITCHING CHARACTERISTICS					
On Time	V_{CC}= 250V, I_C= 1.0A I_{B1}=0.2A, I_{B2}= -0.4A	t_{on}		0.5	us
Storage Time		t_s		3.5	us
Fall Time		t_f		0.6	us

(1) Pulse Test: Pulse Width =300 us, Duty Cycle ≦ 2.0%