

HORIZONTAL DEFLECTION TRANSISTOR

...specifically designed for use in large screen color deflection circuits.

FEATURES:

- * Collector-Emitter Sustaining Voltage -
 $V_{CEX} = 1300 \text{ V (Min.) - BU204}$
 $= 1500 \text{ V (Min.) - BU205}$
- * Glassivated Base-Collector Junction

Boca Semiconductor Corp.

BSC

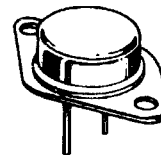
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NPN
BU204
BU205

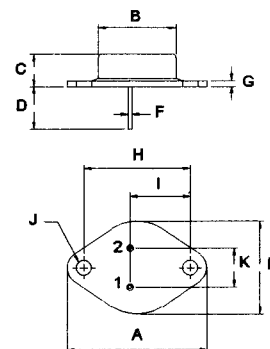
2.5 AMPERE
POWER
TRANSISTORS
1300-1500 VOLTS
36 WATTS

MAXIMUM RATINGS

Characteristic	Symbol	BU204	BU205	Unit
Collector-Emitter Voltage	V_{CEO}	600	700	V
Collector-Emitter Voltage	V_{CEX}	1300	1500	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector Current - Continuous - Peak	I_C	2.5 3.0		A
Base Current - Continuous	I_B	1.0		A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	36 0.4		W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	- 65 to +115		$^\circ\text{C}$



TO-3

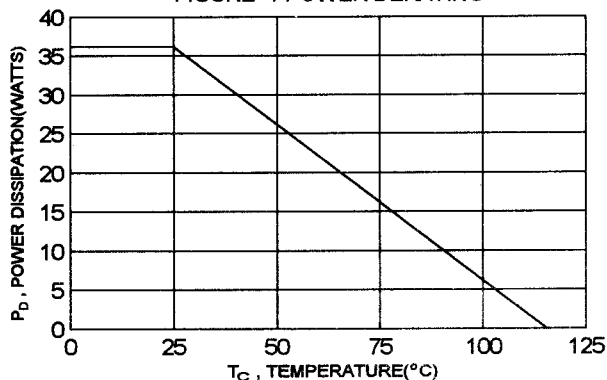


PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	2.5	$^\circ\text{C/W}$

FIGURE -1 POWER DERATING



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) ($I_C = 100\text{ mA}$, $I_B = 0$) BU204 BU205	$V_{CE(sus)}$	600 700		V
Collector Cutoff Current ($V_{CE} = 1300\text{ V}$, $V_{BE} = 0$) ($V_{CE} = 1500\text{ V}$, $V_{BE} = 0$) BU204 BU205	I_{CES}		1.0 1.0	mA
Emitter Cutoff Current ($V_{EB} = 5.0\text{ V}$, $I_C = 0$)	I_{EBO}		10	mA

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 2.0\text{ A}$, $V_{CE} = 5.0\text{ V}$)	h_{FE}	2.0		
Collector - Emitter Saturation Voltage ($I_C = 2.0\text{ A}$, $I_B = 1.0\text{ A}$)	$V_{CE(sat)}$		5.0	V
Base - Emitter Saturation Voltage ($I_C = 2.0\text{ A}$, $I_B = 1.0\text{ A}$)	$V_{BE(sat)}$		1.5	V

DYNAMIC CHARACTERISTICS

Current Gain - Bandwidth Product ($I_C = 0.1\text{ A}$, $V_{CE} = 5.0\text{ V}$, $f = 1.0\text{ MHz}$)	f_T	4.0(typ)		MHz
Output Capacitance ($V_{CE} = 10\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}	50(typ)		pF

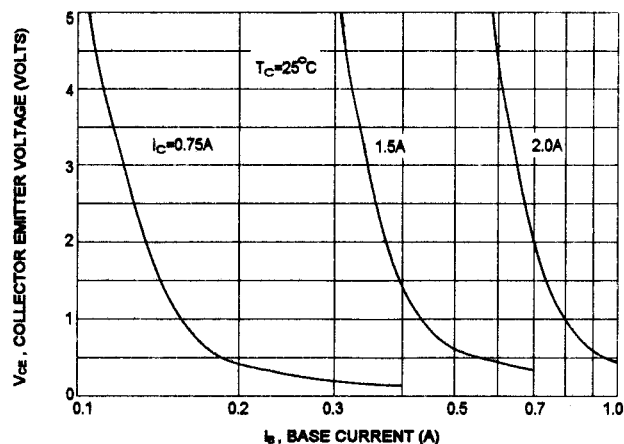
SWITCHING CHARACTERISTICS

Fall Time ($I_C = 2.0\text{ A}$, $I_{B1} = 1.0\text{ A}$, $L_B = 25\text{ uH}$)	t_f	0.65(typ)		us
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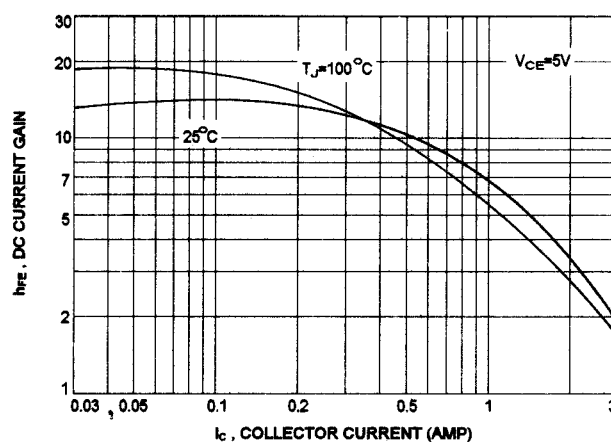
(1) Pulse Test: Pulse width $\leq 300\text{ us}$, Duty Cycle $\leq 2.0\%$

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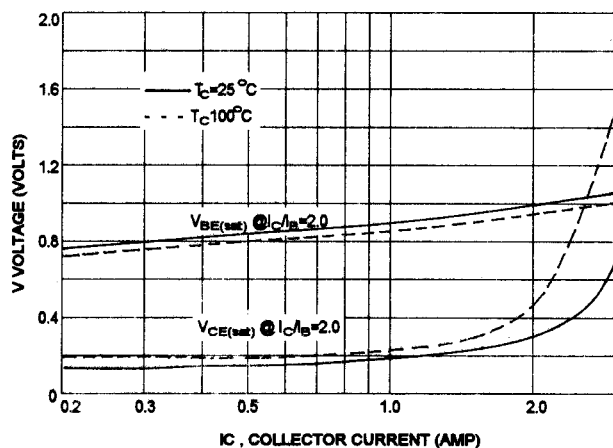
COLLECTOR SATURATION REGION



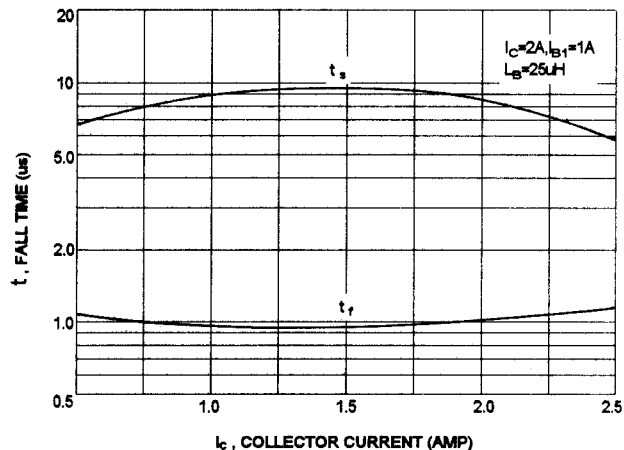
DC CURRENT GAIN



"ON" VOLTAGES



SWITCHING BEHAVIOR VERSUS I_{CM}



FORWARD BIAS SAFE OPERATING AREA

