

## HORIZONTAL DEFLECTION TRANSISTOR

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

### FEATURES:

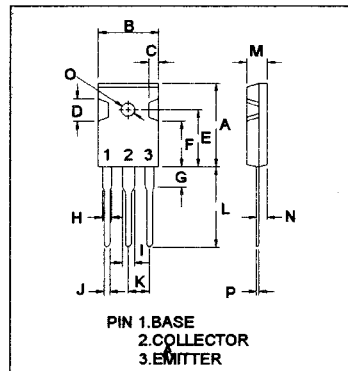
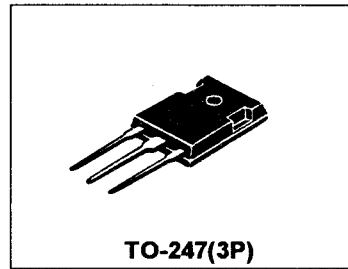
- \* Collector-Emitter Sustaining Voltage -  $V_{CEX} = 1500\text{ V (Min.) BU508, BU508A, BU508D}$
- \* Glassivated Base-Collector Junction

**NPN**  
**BU508**  
**BU508A**  
**BU508D**

**5 AMPERE**  
**POWER**  
**TRANSISTORS**  
**1500 VOLTS**  
**125 WATTS**

### MAXIMUM RATINGS

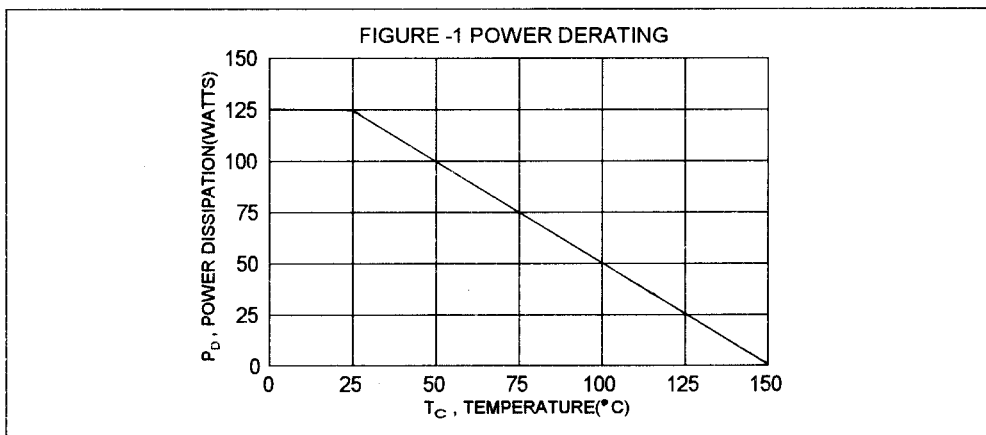
Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	700	V
Collector-Emitter Voltage ( $V_{BE}=0$ )	$V_{CES}$	1500	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current - Continuous - Peak	$I_C$	5.0 8.0	A
Base Current - Continuous	$I_B$	2.5	A
Total Power Dissipation @ $T_c=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	125 1.0	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	- 65 to +150	$^\circ\text{C}$



### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.0	$^\circ\text{C/W}$

DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70



**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) ( $I_C = 100\text{ mA}$ , $I_B = 0$ )	$V_{CE(SUS)}$	700		V
Collector Cutoff Current ( $V_{CE} = 1500\text{ V}$ , $V_{BE} = 0$ )	$I_{CES}$		1.0	mA
Emitter Cutoff Current ( $V_{EB} = 5.0\text{ V}$ , $I_C = 0$ )	$I_{EBO}$		10 300	mA

BU508, BU508A  
BU508D

**ON CHARACTERISTICS (1)**

Collector - Emitter Saturation Voltage ( $I_C = 4.5\text{ A}$ , $I_B = 2.0\text{ A}$ )	BU508A, BU508D BU508	$V_{CE(sat)}$	1.0 5.0	V
Base - Emitter Saturation Voltage ( $I_C = 4.5\text{ A}$ , $I_B = 2.0\text{ A}$ )		$V_{BE(sat)}$	1.5	V
Diode Forward Voltage ( $I_F = 4.0\text{ A}$ )	BU508D	$V_F$	2.0	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 ( $V_{CE} = 10\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )		$C_{ob}$	125(typ)	pF

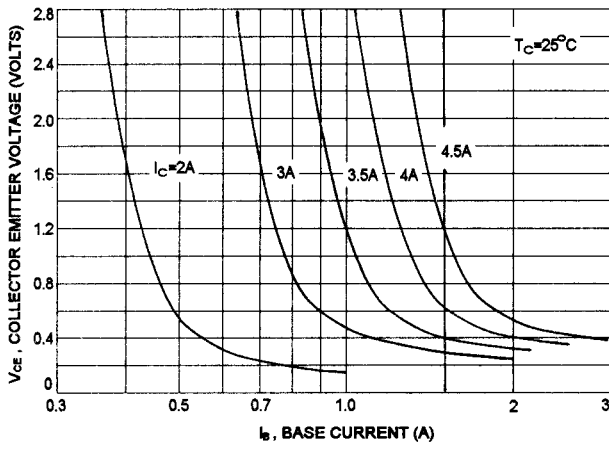
**SWITCHING CHARACTERISTICS**

Storage Time	$I_C = 4.5\text{ A}$ , $I_{B1} = 1.4\text{ A}$ , $L_B = 10\text{ uH}$	$t_s$	7.0(typ)	us
Fall Time		$t_f$	1.0(typ)	us

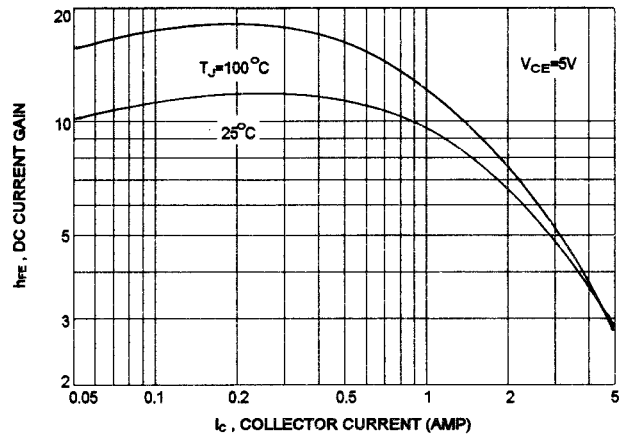
(1) Pulse Test: Pulse width  $\leq 300\text{ us}$ , Duty Cycle  $\leq 2.0\%$

BU508, BU508A

COLLECTOR SATURATION REGION

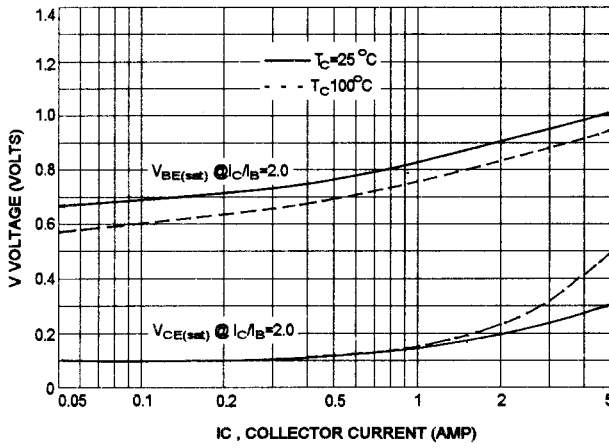


DC CURRENT GAIN

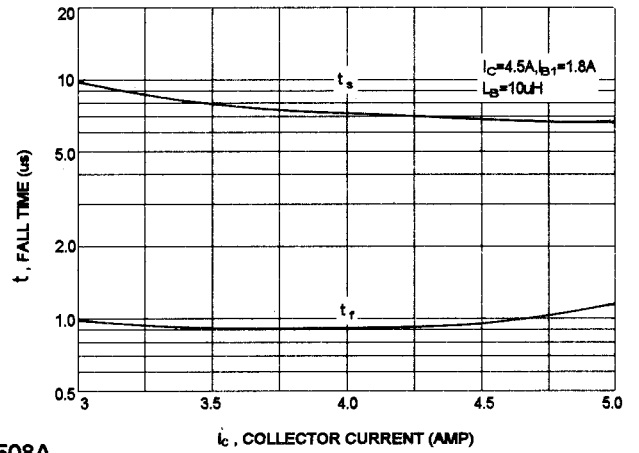


"ON" VOLTAGES

BU508, BU508A

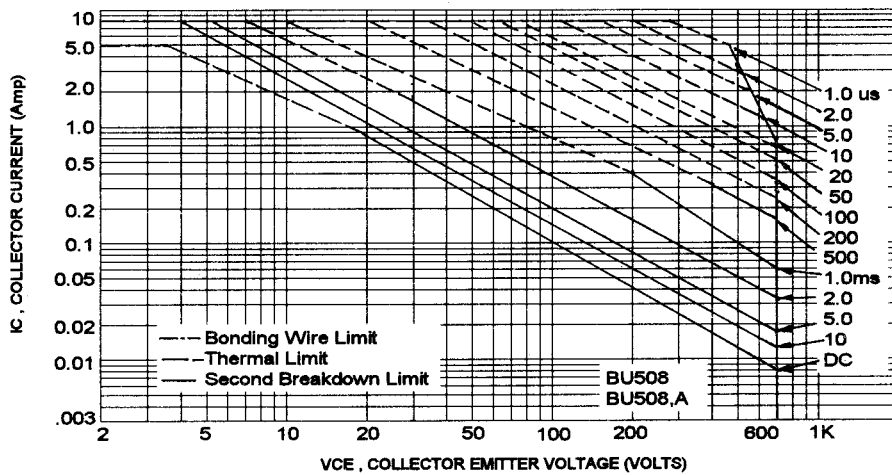


SWITCHING BEHAVIOR VERSUS  $I_{CM}$



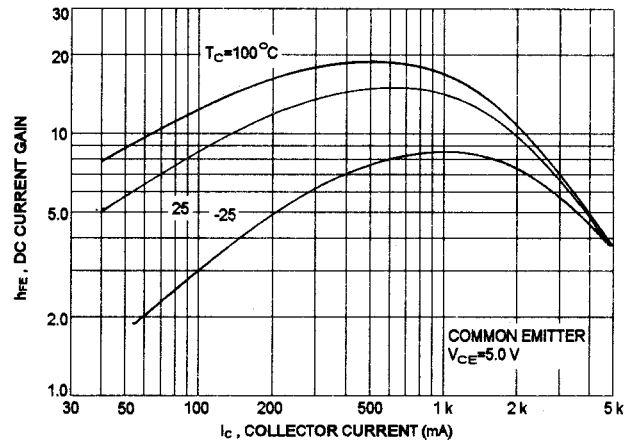
BU508, BU508A

FORWARD BIAS SAFE OPERATING AREA

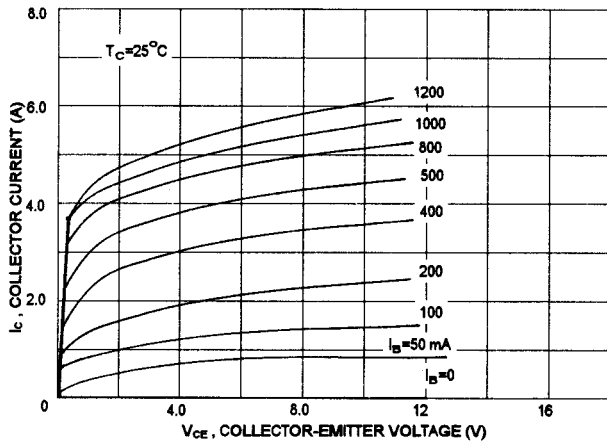


BU508D

DC CURRENT GAIN

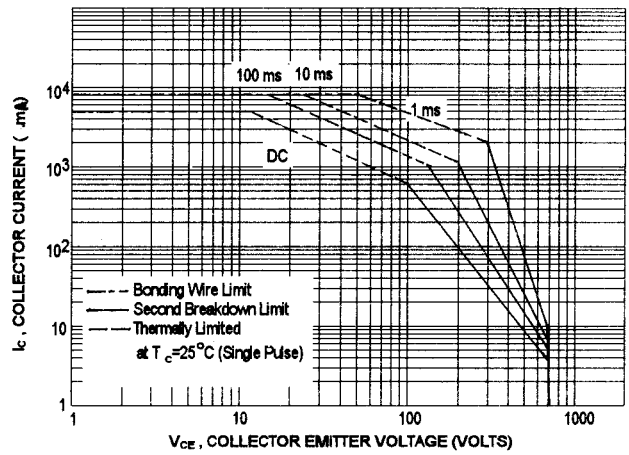


$I_C - V_{CE}$



BU508D

ACTIVE-REGION SAFE OPERATING AREA (SOA)



$I_C - V_{BE}$

