

# Silicon Power Transistor BU508D

## Technical Data

**Typical Applications :** These devices are designed for horizontal deflection output stages of large screen colour deflection circuits.

### Specification Features :

- ☞ **High Voltage** NPN Silicon Power Transistor
- ☞ 8 Amp / 1500 V device in TO-218AC package
- ☞ 125 Watts device
- ☞ VCEO (sus) 700 V
- ☞ Collector Emitter Voltage VCE = 1500 V
- ☞ TO-218 Package for low cost mounting
- ☞ Available with internal Flyback Diode , “D” suffix

Symbol	Parameters / Conditions	Ratings
<b>Maximum Ratings :</b>		
$V_{CEO(SUS)}$	Collector- Emitter Voltage	700 Vdc
$V_{CES}$	Collector- Emitter Voltage	1500 Vdc
$V_{EB}$	Emitter Base Voltage	5 Vdc
$I_C$	Collector Current – Continuous	8 Adc
$I_{CM}$	Peak : Pulse width = 5 ms , Duty Cycle 10 %	15 Adc
$I_B$	Base Current – Continuous	4 Adc
$I_{BM}$	Peak : Pulse width = 5 ms , Duty Cycle 10 %	6 Adc



<b>Thermal Characteristics :</b>		
$R_{thjc}$	Thermal resistance junction to case	1.0 °C/W
$T_L$	Maximum Lead Temperature for Soldering Purpose : 1/8" from Case for 5 sec	275 °C
$P_D$	Total Power Dissipation @ $T_c = 25$ °C Derate above 25 °C	125 Watta 1 W /°C
$T_j$ & $T_{stg}$	Operating and Storage Junction Temperature Range	-65 °C ....+ 150 °C

**ELECTRICAL CHARACTERISTICS :**

[  $T_c = 25$  °C unless otherwise noted ]

Characteristic	Symbol	Min	Typ	Max	Unit
<b>Off Characteristics : [ Pulse Test : Pulse width = 5 ms , Duty Cycle 10 % ]</b>					
Collector – Emitter Sustaining Voltage [ $I_c = 100$ mA , $I_B = 0$ ]	$V_{CEO(sus)}$	700			Vdc
Collector Cutoff Current [ $V_{CE} = 1500$ Vdc , $V_{BE} = 0$ , $T_c = 25$ °C ] [ $V_{CE} = 1500$ V , $V_{BE} = 0$ , $T_c = 125$ °C ]	$I_{CES}$			0.1 2	mAdc
Emitter Base Leakage [ $V_{EB} = 6$ Vdc , $I_c = 0$ ]	$I_{EBO}$			300	mAdc
<b>On Characteristics : [ Pulse Test : Pulse width = 5 ms , Duty Cycle 10 % ]</b>					
DC Current Gain [ $I_c = 4.5$ Adc , $V_{CE} = 5$ Vdc ]	$h_{FE}$	2.25			
Collector-Emitter Saturation Voltage [ $I_c = 4.5$ Adc , $I_B = 2$ Adc ]	$V_{CE(sat)}$			3	Vdc
Base-Emitter Saturation Voltage [ $I_c = 4.5$ Adc , $I_B = 2$ Adc ]	$V_{BE(sat)}$			1.3	Vdc
<b>Dynamic Characteristics :</b>					
Current Gain – Bandwidth Product	$f_T$		7		MHz

[ $I_c = 0.1 \text{ A dc}$ , $V_{CE} = 5 \text{ V dc}$ , $f = 1 \text{ MHz}$ ]					
Output Capacitance [ $V_{CB} = 10 \text{ V dc}$ , $I_E = 0$ , $f = 0.1 \text{ MHz}$ ]	$C_{ob}$		125		pF

<b>Switching Characteristics :</b>		
Fall Time :		Typ
$t_s$	( $I_c = 4.5 \text{ A dc}$ , $I_B = 1.8 \text{ A dc}$ , $LB = 10 \mu\text{H}$ )	8 $\mu\text{s}$
$t_f$		0.5 $\mu\text{s}$