

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
Maximum Ratings :		
$V_{CEO(SUS)}$	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 $\leq$ 10 %	15 Adc
I_B	Base Current – Continuous	4 Adc
I_{BM}	Peak : Pulse width = 5 ms , Duty Cycle $\leq$ 10 %	6 Adc



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

ELECTRICAL CHARACTERISTICS :

[$T_c = 25^{\circ}\text{C}$ unless otherwise noted]

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

Switching Characteristics :		
Fall Time :		Typ
t_s	($I_C= 4.5 \text{ A}_{dc}$, $I_B = 1.8 \text{ A}_{dc}$, LB=10 nH)	8 ns
t_f		0.5 ns