

# Silicon Power Transistor BU208A

## Technical Data

**Typical Applications :** These devices are designed for horizontal deflection output stages of televisions.

### Specification Features :

- ☞ **Horizontal Deflection** NPN Silicon Power Transistor
- ☞ 5 Amp / 700 V device in TO-204AA [ TO-3 ] package
- ☞ 12.5 Watts device
- ☞ VCEO (sus) 700 V
- ☞ Collector Emitter Voltage VCE = 1500 V
- ☞ Fast Switching – 400 ns typical fall time
- ☞ Low thermal resistance 1 °C/W , Increased reliability

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	5 Adc
$I_{CM}$	Peak : Pulse width = 5 ms , Duty Cycle 10 %	7.5 Adc
$I_B$	Base Current – Continuous	4 Adc
$I_{BM}$	Peak : Pulse width = 5 ms , Duty Cycle 10 %	3.5 Adc



<b>Thermal Characteristics :</b>		
$R_{thjc}$	Thermal resistance junction to case	1.6 °C/W
$T_L$	Maximum Lead Temperature for Soldering Purpose : 1/8" from Case for 5 sec	275 °C
$P_D$	Total Power Dissipation @ $T_c = 95$ °C Derate above 95 °C	12.5 Watta 0.625 W/°C
$T_j$ & $T_{stg}$	Operating and Storage Junction Temperature Range	-65 °C ....+ 115 °C

### **ELECTRICAL CHARACTERISTICS :**

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

Characteristic	Symbol	Min	Typ	Max	Unit
<b>Off Characteristics : [ Pulse Test : Pulse width = 300 <math>\mu</math>s , Duty Cycle 2 % ]</b>					
Collector – Emitter Sustaining Voltage [ $I_c = 100$ mAdc , $L = 25$ mH ]	$V_{CEO(sus)}$	700			Vdc
Collector Cutoff Current [ $V_{CE} = 1500$ Vdc , $V_{BE} = 0$ ]	$I_{CES}$			1	mAdc
Emitter Base Voltage [ $I_E = 10$ mA , $I_c = 0$ ] [ $I_E = 100$ mA , $I_c = 0$ ]	$V_{EBO}$	5	7		Vdc
<b>On Characteristics : [ Pulse Test : Pulse width = 300 <math>\mu</math>s , Duty Cycle 2 % ]</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 ]	$V_{CE(sat)}$			1	Vdc
Base-Emitter Saturation Voltage [ $I_c = 4.5$ Adc , $I_B = 2$ Adc ]	$V_{BE(sat)}$			1.5	Vdc
<b>Dynamic Characteristics :</b>					
Current Gain – Bandwidth Product [ $I_c = 0.1$ Adc , $V_{CE}=5$ Vdc , $f=1$ MHz ]	$f_T$		4		MHz
Output Capacitance [ $V_{CB}= 10$ Vdc , $I_E = 0$ , $f = 1$ ]	$C_{ob}$		125		pF

MHz ]					
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<b>Switching Characteristics :</b>		
		Typ
Storage time : $t_s$	( $I_c = 4.5 \text{ A dc}$ , $I_{B1} = 1.8 \text{ A dc}$ , $LB = 10 \mu\text{H}$ )	8 $\mu\text{s}$
Fall time : $t_f$	( $I_c = 4.5 \text{ A dc}$ , $I_{B1} = 1.8 \text{ A dc}$ , $LB = 10 \mu\text{H}$ )	0.4 $\mu\text{s}$