

# SPTECH Silicon NPN Power Transistor

**BU408**

## DESCRIPTION

- High Voltage:  $V_{CEV} = 400V(\text{Min})$
- Fast Switching Speed-  
:  $t_f = 400ns(\text{Max})$
- Low Saturation Voltage-  
:  $V_{CE(\text{sat})} = 1.0V(\text{Max}) @ I_C = 6A$

## APPLICATIONS

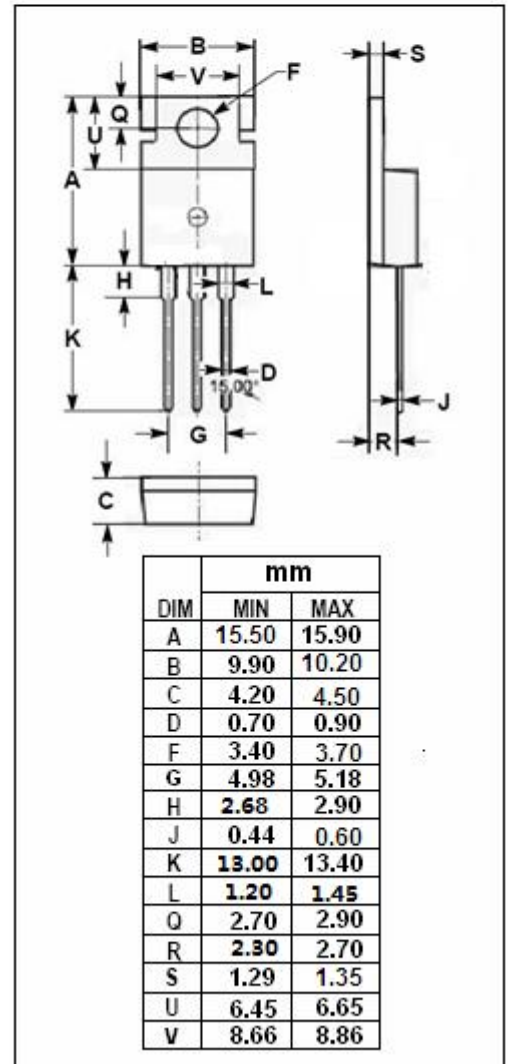
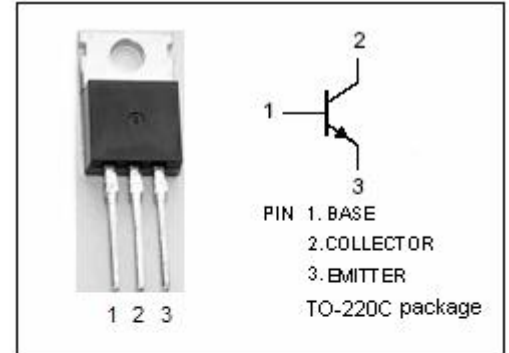
- Designed for use in horizontal deflection output stages of TV's and CRT's

## ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

| SYMBOL    | PARAMETER                                                 | VALUE   | UNIT             |
|-----------|-----------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | 400     | V                |
| $V_{CEV}$ | Collector-Emitter Voltage                                 | 400     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | 200     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | 6       | V                |
| $I_C$     | Collector Current-Continuous                              | 7       | A                |
| $I_{CP}$  | Collector Current-Peak Repetitive                         | 10      | A                |
| $I_{CP}$  | Collector Current- Peak (10ms)                            | 15      | A                |
| $I_B$     | Base Current                                              | 4       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^\circ\text{C}$ | 60      | W                |
| $T_J$     | Junction Temperature                                      | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                 | -65~150 | $^\circ\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                               | MAX  | UNIT               |
|--------------|-----------------------------------------|------|--------------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case    | 2.08 | $^\circ\text{C/W}$ |
| $R_{th j-a}$ | Thermal Resistance, Junction to Ambient | 70   | $^\circ\text{C/W}$ |



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## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS                                                                                                                  | MIN | TYP. | MAX               | UNIT          |
|----------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----|------|-------------------|---------------|
| $V_{CEQ(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=50\text{mA}; I_B=0$                                                                                                    | 200 |      |                   | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=6\text{A}; I_B=1.2\text{A}$                                                                                            |     |      | 1.0               | V             |
| $V_{BE(sat)}$  | Base-Emitter Saturation Voltage      | $I_C=6\text{A}; I_B=1.2\text{A}$                                                                                            |     |      | 1.2               | V             |
| $I_{CES}$      | Collector Cutoff Current             | $V_{CE}=400\text{V}; V_{BE}=0$<br>$V_{CE}=250\text{V}; V_{BE}=0$<br>$V_{CE}=250\text{V}; V_{BE}=0; T_C=150^{\circ}\text{C}$ |     |      | 5.0<br>0.1<br>1.0 | mA            |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB}=6\text{V}; I_C=0$                                                                                                   |     |      | 1.0               | mA            |
| $h_{FE}$       | DC Current Gain                      | $I_C=2\text{A}; V_{CE}=5\text{V}$                                                                                           |     | 35   |                   |               |
| $f_T$          | Current-Gain—Bandwidth Product       | $I_C=0.5\text{A}; V_{CE}=10\text{V}$                                                                                        | 10  |      |                   | MHz           |
| $t_f$          | Fall Time                            | $I_C=6\text{A}; I_{B1}=-I_{B2}=1.2\text{A}$                                                                                 |     |      | 0.4               | $\mu\text{s}$ |