

**DESCRIPTION**

- High DC Current Gain
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 80V$  (Min)
- Low Collector-Emitter Saturation Voltage-

**APPLICATIONS**

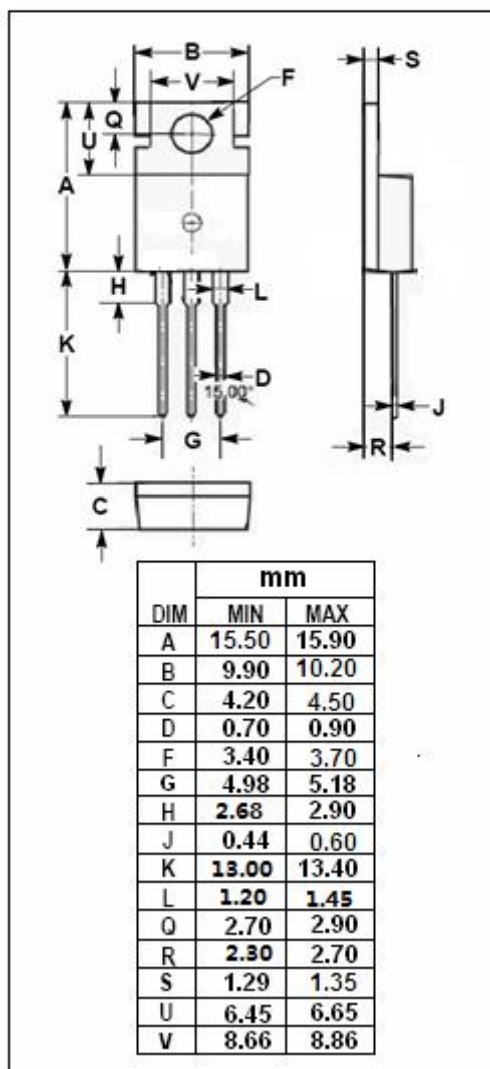
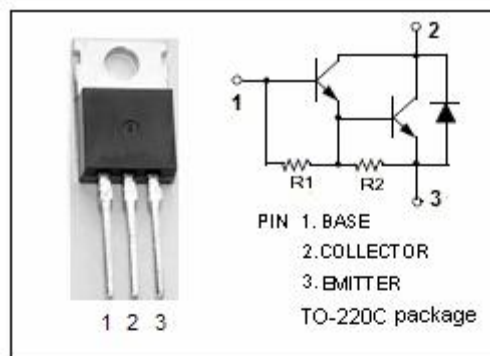
- Designed for general-purpose amplifier and low-speed switching applications.

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )**

| SYMBOL    | PARAMETER                                           | VALUE   | UNIT       |
|-----------|-----------------------------------------------------|---------|------------|
| $V_{CBO}$ | Collector-Base Voltage                              | 80      | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                           | 80      | V          |
| $V_{EBO}$ | Emitter-Base Voltage                                | 5       | V          |
| $I_C$     | Collector Current                                   | 10      | A          |
| $I_{CM}$  | Collector Current-peak                              | 15      | A          |
| $I_B$     | Base Current                                        | 250     | mA         |
| $P_C$     | Collector Power Dissipation<br>@ $T_c = 25^\circ C$ | 65      | W          |
|           | Collector Power Dissipation<br>@ $T_a = 25^\circ C$ | 2       |            |
| $T_j$     | Junction Temperature                                | 150     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature Range                           | -65~150 | $^\circ C$ |

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                               | MAX  | UNIT         |
|---------------|-----------------------------------------|------|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 1.92 | $^\circ C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 62.5 | $^\circ C/W$ |



## SPTECH Silicon NPN Darlington Power Transistor

2N6388

## ELECTRICAL CHARACTERISTICS

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

| SYMBOL          | PARAMETER                            | CONDITIONS                                | MIN  | TYP. | MAX   | UNIT |
|-----------------|--------------------------------------|-------------------------------------------|------|------|-------|------|
| $V_{CEO(SUS)}$  | Collector-Emitter Sustaining Voltage | $I_C=50\text{mA}; I_B=0$                  | 80   |      |       | V    |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=5\text{A}; I_B=10\text{mA}$          |      |      | 2.0   | V    |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=100\text{mA}$        |      |      | 3.0   | V    |
| $V_{BE(on)-1}$  | Base-Emitter On Voltage              | $I_C=5\text{A}; V_{CE}=3\text{V}$         |      |      | 2.8   | V    |
| $V_{BE(on)-2}$  | Base-Emitter On Voltage              | $I_C=10\text{A}; V_{CE}=3\text{V}$        |      |      | 4.5   | V    |
| $I_{CEO}$       | Collector Cutoff Current             | $V_{CE}=80\text{V}; I_B=0$                |      |      | 1.0   | mA   |
| $I_{EBO}$       | Emitter Cutoff Current               | $V_{EB}=5\text{V}; I_C=0$                 |      |      | 5     | mA   |
| $h_{FE-1}$      | DC Current Gain                      | $I_C=5\text{A}; V_{CE}=3\text{V}$         | 1000 |      | 20000 |      |
| $h_{FE-2}$      | DC Current Gain                      | $I_C=10\text{A}; V_{CE}=3\text{V}$        | 100  |      |       |      |
| $C_{OB}$        | Output Capacitance                   | $V_{CB}=10\text{V}; I_E=0; f=1\text{MHz}$ |      |      | 200   | pF   |