

# SPTECH Silicon NPN Darlington Power Transistor

2N6284

## DESCRIPTION

- Built-in Base-Emitter Shunt Resistors
- High DC current gain-  
 $h_{FE} = 750$  (Min) @  $I_C = 10$  Adc
- Collector-Emitter Sustaining Voltage-  
 $V_{CEO(SUS)} = 100V$  (Min)
- Complement to type 2N6287

## APPLICATIONS

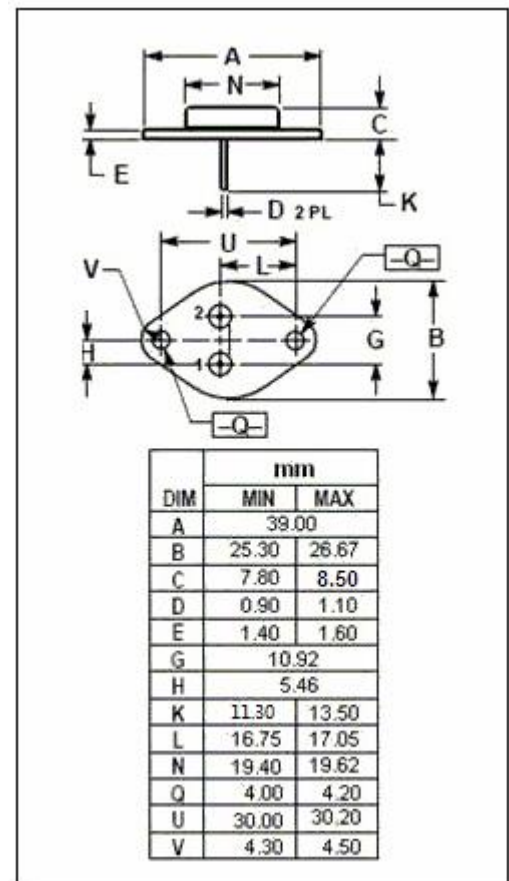
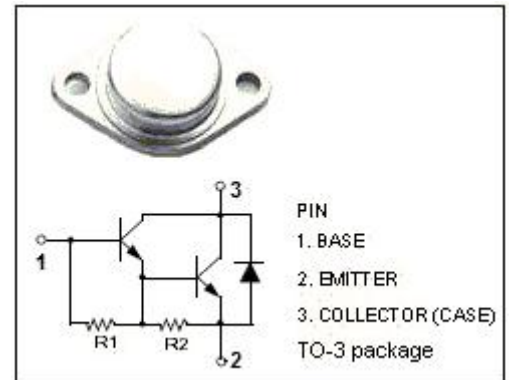
- Intended for general purpose amplifier and low frequency switching applications, such as linear and switching industrial equipment.

## ABSOLUTE MAXIMUM RATINGS( $T_C = 25^\circ C$ )

| SYMBOL    | PARAMETER                                       | VALUE   | UNIT       |
|-----------|-------------------------------------------------|---------|------------|
| $V_{CBO}$ | Collector-Base Voltage                          | 100     | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                       | 100     | V          |
| $V_{EBO}$ | Emitter-Base Voltage                            | 5.0     | V          |
| $I_C$     | Collector Current -Continuous                   | 20      | A          |
| $I_{CP}$  | Collector Current-Peak                          | 40      | A          |
| $I_B$     | Base Current                                    | 0.5     | A          |
| $P_C$     | Collector Power Dissipation@ $T_C = 25^\circ C$ | 160     | W          |
| $T_j$     | Junction Temperature                            | 150     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                             | -65~150 | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                           | MAX  | UNIT         |
|--------------|-------------------------------------|------|--------------|
| $R_{th j-c}$ | ThermalResistance, Junction to Case | 1.09 | $^\circ C/W$ |



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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL          | PARAMETER                            | CONDITIONS                                                                                                                       | MIN | MAX        | UNIT |
|-----------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----|------------|------|
| $V_{CE0(SUS)}$  | Collector-Emitter Sustaining Voltage | $I_C=50\text{mA}$ ; $I_B=0$                                                                                                      | 100 |            | V    |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{A}$ ; $I_B=40\text{mA}$                                                                                             |     | 2.0        | V    |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=20\text{A}$ ; $I_B=200\text{mA}$                                                                                            |     | 3.0        | V    |
| $V_{BE(sat)}$   | Base-Emitter Saturation voltage      | $I_C=20\text{A}$ ; $I_B=200\text{mA}$                                                                                            |     | 4.0        | V    |
| $V_{BE(on)}$    | Base-Emitter On voltage              | $I_C=10\text{A}$ ; $V_{CE}=3\text{V}$                                                                                            |     | 2.8        | V    |
| $I_{CEO}$       | Collector Cutoff current             | $V_{CE}=50\text{V}$ ; $I_B=0$                                                                                                    |     | 1.0        | mA   |
| $I_{CEX}$       | Collector Cutoff current             | $V_{CE}=100\text{V}$ ; $V_{BE(off)}=1.5\text{V}$<br>$V_{CE}=100\text{V}$ ; $V_{BE(off)}=1.5\text{V}$ , $T_C=150^{\circ}\text{C}$ |     | 0.5<br>5.0 | mA   |
| $I_{EBO}$       | Emitter Cut-off current              | $V_{EB}=5\text{V}$ ; $I_C=0$                                                                                                     |     | 2.0        | mA   |
| $h_{FE-1}$      | DC Current Gain                      | $I_C=10\text{A}$ ; $V_{CE}=3\text{V}$                                                                                            | 750 | 18000      |      |
| $h_{FE-2}$      | DC Current Gain                      | $I_C=20\text{A}$ ; $V_{CE}=3\text{V}$                                                                                            | 100 |            |      |
| $C_{OB}$        | Output Capacitance                   | $I_E=0$ ; $V_{CB}=10\text{V}$ ; $f_{test}=1.0\text{MHz}$                                                                         |     | 400        | pF   |