

### DESCRIPTION

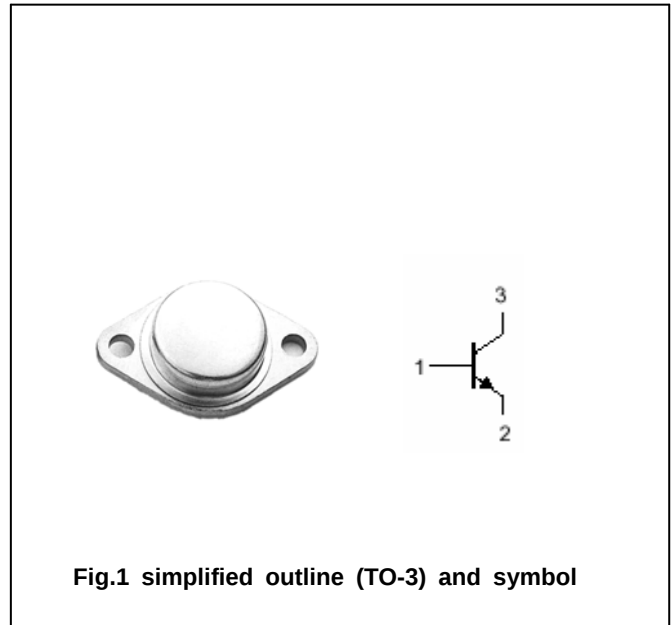
- With TO-3 package
- Large current capability
- Wide area of safe operation

### APPLICATIONS

- For power amplifier and switching applications

### PINNING(see Fig.2)

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Base        |
| 2   | Emitter     |
| 3   | Collector   |



### Absolute maximum ratings( $T_a = ^\circ\text{C}$ )

| SYMBOL    | PARAMETER                   | CONDITIONS               | VALUE   | UNIT             |
|-----------|-----------------------------|--------------------------|---------|------------------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter             | 60      | V                |
| $V_{CEO}$ | Collector-emitter voltage   | Open base                | 60      | V                |
| $V_{EBO}$ | Emitter-base voltage        | Open collector           | 6       | V                |
| $I_C$     | Collector current           |                          | 10      | A                |
| $P_C$     | Collector power dissipation | $T_C = 25^\circ\text{C}$ | 100     | W                |
| $T_j$     | Junction temperature        |                          | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage temperature         |                          | -55~150 | $^\circ\text{C}$ |

# SPTECH Product Specification

## SPTECH Silicon NPN Power Transistors

**2SD211**

### CHARACTERISTICS

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

| SYMBOL        | PARAMETER                            | CONDITIONS                            | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---------------------------------------|-----|------|-----|------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=50\text{mA}$ ; $I_B=0$           | 60  |      |     | V    |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       | $I_E=1\text{mA}$ ; $I_C=0$            | 6   |      |     | V    |
| $V_{CEsat}$   | Collector-emitter saturation voltage | $I_C=5\text{A}$ ; $I_B=0.5\text{A}$   |     |      | 1.5 | V    |
| $V_{BEsat}$   | Base-emitter saturation voltage      | $I_C=5\text{A}$ ; $I_B=0.5\text{A}$   |     |      | 2.5 | V    |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=60\text{V}$ ; $I_E=0$         |     |      | 0.1 | mA   |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=6\text{V}$ ; $I_C=0$          |     |      | 0.1 | mA   |
| $h_{FE}$      | DC current gain                      | $I_C=5\text{A}$ ; $V_{CE}=4\text{V}$  | 30  |      |     |      |
| $f_T$         | Transition frequency                 | $I_C=1\text{A}$ ; $V_{CE}=12\text{V}$ |     | 8    |     | MHz  |

### PACKAGE OUTLINE

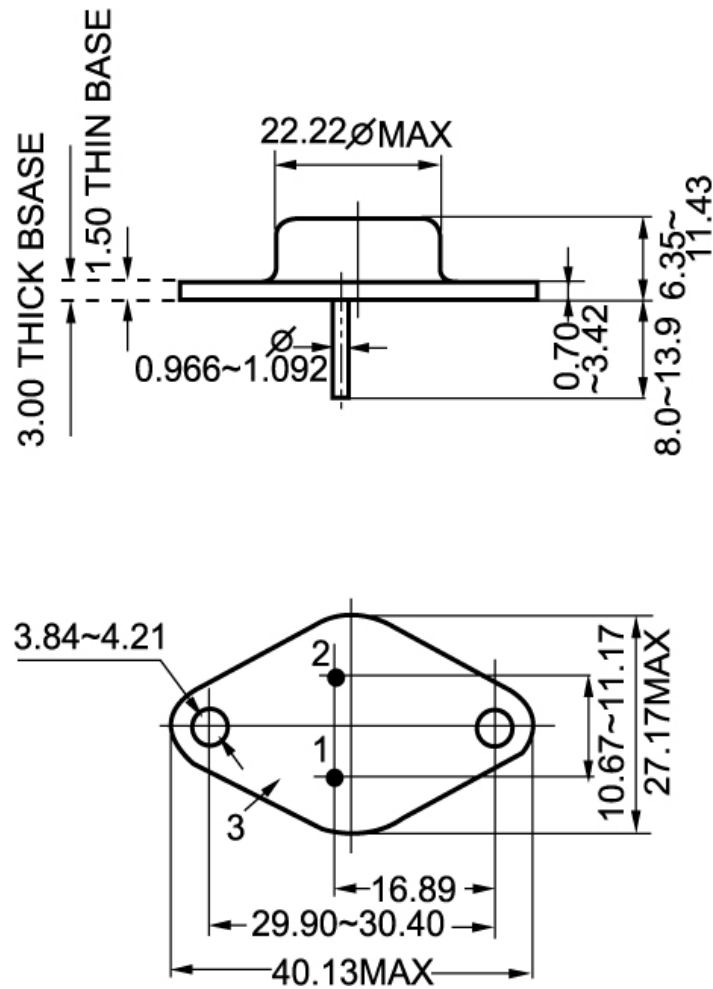


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )