

# SPTECH Product Specification

## SPTECH Silicon PNP Power Transistor

2SA2222

### DESCRIPTION

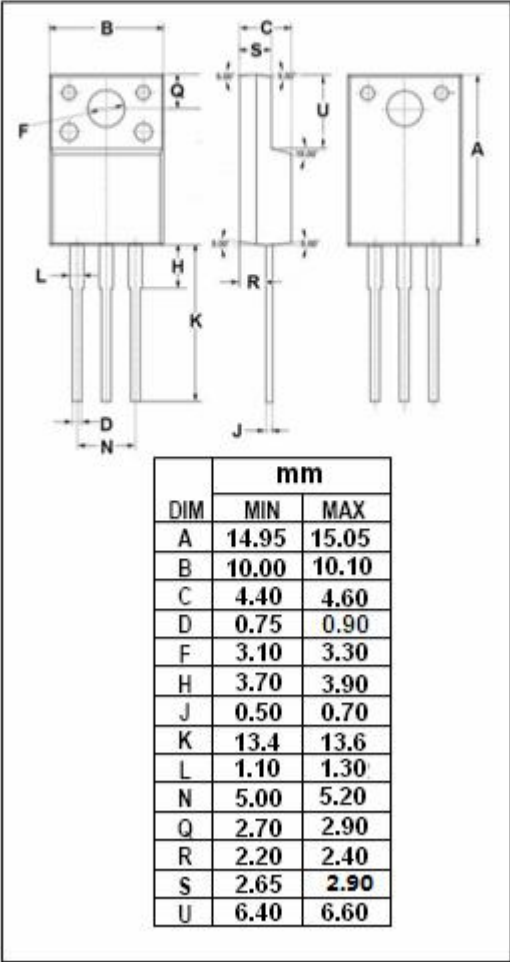
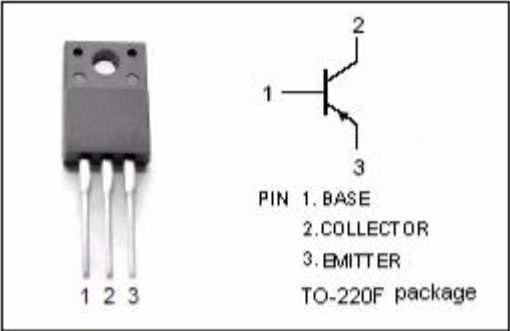
- Large current capacitance
- High-speed switching
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- relay drivers,lamp drivers,motor drivers

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

| SYMBOL    | PARAMETER                                                 | VALUE   | UNIT               |
|-----------|-----------------------------------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | -50     | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | -50     | V                  |
| $V_{EBO}$ | Emitter-Base Voltage                                      | -6      | V                  |
| $I_C$     | Collector Current-Continuous                              | -10     | A                  |
| $I_{CM}$  | Collector Current-Peak                                    | -13     | A                  |
| $P_C$     | Collector Power Dissipation<br>@ $T_c=25^{\circ}\text{C}$ | 25      | W                  |
|           | Collector Power Dissipation<br>@ $T_a=25^{\circ}\text{C}$ | 2       |                    |
| $T_J$     | Junction Temperature                                      | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                 | -55~150 | $^{\circ}\text{C}$ |



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### ELECTRICAL CHARACTERISTICS

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

| SYMBOL        | PARAMETER                            | CONDITIONS                           | MIN | TYP. | MAX  | UNIT    |
|---------------|--------------------------------------|--------------------------------------|-----|------|------|---------|
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -6A; I_B = -300mA$            |     |      | -0.5 | V       |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = -6A; I_B = -300mA$            |     |      | -1.2 | V       |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage  | $I_C = -1mA; I_B = 0$                | -50 |      |      | V       |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage       | $I_E = -100\mu A; I_C = 0$           | -6  |      |      | V       |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB} = -40V; I_E = 0$             |     |      | -10  | $\mu A$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB} = -4V; I_C = 0$              |     |      | -10  | $\mu A$ |
| $h_{FE}$      | DC Current Gain                      | $I_C = -0.27A; V_{CE} = -2V$         | 150 |      | 450  |         |
| $C_{OB}$      | Output Capacitance                   | $I_E = 0; V_{CB} = -10V; f = 1.0MHz$ |     | 115  |      | pF      |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C = -1A; V_{CE} = -10V$           |     | 230  |      | MHz     |