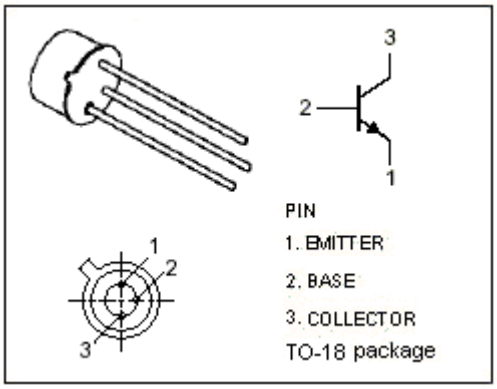
# isc Silicon NPN Power Transistor 2N2222

## DESCRIPTION

- Collector Current- $I_C$= 0.8A
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 30V(Min)
- Complement to Type 2N2907




## APPLICATIONS

- Designed for general-purpose switching and linear amplification.

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 30 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 0.8 | A |
| $I_{BM}$ | Base Current-Peak | 0.2 | A |
| $P_C$ | Collector Power Dissipation@$T_C$=25℃ | 0.5 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -65~150 | ℃ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}a}$ | Thermal Resistance,Junction to Ambient | 350 | K/W |

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{(BR)\ CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$=10mA ; $I_B$=0 | 30 | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$=10μA ; $I_C$=0 | 5 | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C$= 150mA; $I_B$= 15mA | | 0.4 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C$= 500mA; $I_B$= 50mA | | 1.6 | V |
| $V_{BE(sat)-1}$ | Base-Emitter Saturation Voltage | $I_C$= 150mA; $I_B$= 15mA | | 1.3 | V |
| $V_{BE(sat)-2}$ | Base-Emitter Saturation Voltage | $I_C$= 500mA; $I_B$= 50mA | | 2.6 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 50V; $I_E$=0 | | 1.5 | uA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 5V; $I_C$=0 | | 50 | nA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 0.1mA ; $V_{CE}$= 10V | 35 | | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 1mA ; $V_{CE}$= 10V | 50 | | |
| $h_{FE-3}$ | DC Current Gain | $I_C$= 10mA ; $V_{CE}$= 10V | 75 | | |
| $h_{FE-4}$ | DC Current Gain | $I_C$= 150mA ; $V_{CE}$= 10V | 100 | 300 | |
| $h_{FE-5}$ | DC Current Gain | $I_C$= 500mA ; $V_{CE}$= 10V | 30 | | |
| $f_T$ | Current Gain-Bandwidth Product | $I_C$= 20mA ; $V_{CE}$= 20V;$f_{test}$= 100MHz | 250 | | MHz |
| $C_{OB}$ | Output Capacitance | $I_E$= 0 ; $V_{CB}$= 10V; $f_{test}$= 1.0MHz | | 8 | pF |
| Switching Times | | | | | |
| $t_d$ | Delay Time | $I_C$= 150mA; $I_{B1}$= -$I_{B2}$= 15mA | | 10 | ns |
| $t_r$ | Rise Time | | | 25 | ns |
| $t_{stg}$ | Storage Time | | | 200 | ns |
| $t_f$ | Fall Time | | | 60 | ns |