Micro Commercial Components

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# MJD122

## Silicon NPN epitaxial planer Transistors

## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Case Material:Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- High DC Current Gain
- Electrically similar to popular TIP 122
- Built-in a damper diode at E-C
- Maximum Thermal Resistance: 83.3°C/W Junction to Ambient

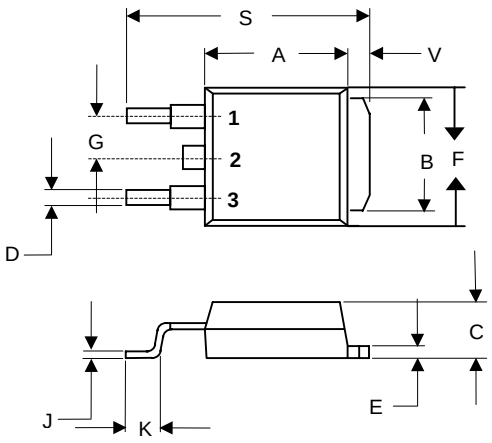
## Maximum Ratings @ 25°C Unless Otherwise Specified

| Symbol | Rating | Rating | Unit |
|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage | 100 | V |
| $V_{CBO}$ | Collector-Base Voltage | 100 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 8 | A |
| $P_C$ | Collector Dissipation | 1.5 | W |
| $T_J$ | Operating Junction Temperature | 150 | ℃ |
| $T_{STG}$ | Storage Temperature | -55 to +150 | ℃ |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ($I_C$=30mAdc, $I_B$=0) | 100 | --- | --- | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C$=1mAdc, $I_E$=0) | 100 | --- | --- | Vdc |
| $V_{(BR)EBO}$ | Collector-Emitter Breakdown Voltage ($I_E$=3mAdc, $I_C$=0) | 5 | --- | --- | Vdc |
| $I_{CBO}$ | Collector Cutoff Current ($V_{CB}$=100Vdc, $I_E$=0) | --- | --- | 10 | nAdc |
| $I_{CEO}$ | Collector emitter cutoff Current ($V_{CE}$=50Vdc, $I_E$=0) | --- | --- | 10 | nAdc |
| $I_{EBO}$ | Emitter Cutoff Current ($V_{EB}$=5Vdc, $I_C$=0) | --- | --- | 2 | nAdc |
| $h_{FE}$ | DC Current Gain ($I_C$=-4Adc, $V_{CE}$=-4Vdc) | 1000 | --- | 12000 | |
| | ($I_C$=-8Adc, $V_{CE}$=-4Vdc) | 100 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C$=4Adc, $I_B$=16mAdc) | --- | --- | 2 | Vdc |
| | ($I_C$=8Adc, $I_B$=80mAdc) | --- | --- | 4 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C$=8Adc, $I_B$=80mAdc) | --- | --- | 4.5 | Vdc |
| $V_{BE}$ | Base-Emitter Saturation Voltage ($I_C$=4Adc, $V_{CE}$=4Vdc ) | --- | --- | 2.8 | Vdc |
| $C_{ob}$ | Output Capacitance ($V_{CB}$=10Vdc, f=0.1MHz, $I_E$=0) | --- | --- | 200 | pF |

DPACK




PIN 1. BASE
PIN 2. COLLECTOR
PIN 3. EMITTER

| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| A | 0.235 | 0.245 | 5.97 | 6.22 | |
| B | 0.205 | 0.215 | 5.21 | 5.46 | |
| C | 0.086 | 0.094 | 2.19 | 2.38 | |
| D | 0.025 | 0.035 | 0.64 | 0.89 | |
| E | 0.035 | 0.045 | 0.99 | 1.14 | |
| F | 0.250 | 0.265 | 6.35 | 6.73 | |
| G | 0.090 | | 2.28 | | |
| J | 0.018 | 0.023 | 0.48 | 0.58 | |
| K | 0.020 | --- | 0.51 | --- | |
| S | 0.370 | 0.410 | 9.40 | 10.42 | |
| V | 0.035 | 0.050 | 0.88 | 1.27 | |

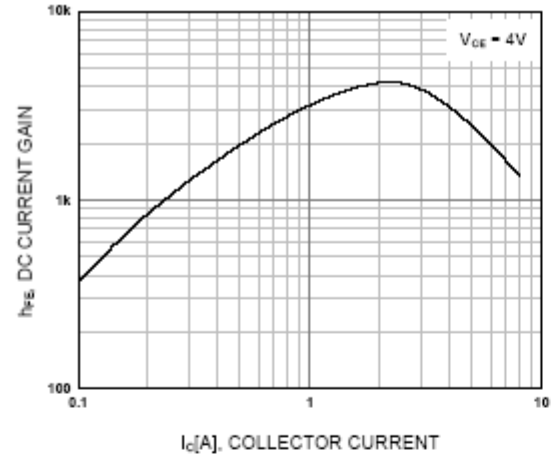



Figure 1. DC current Gain

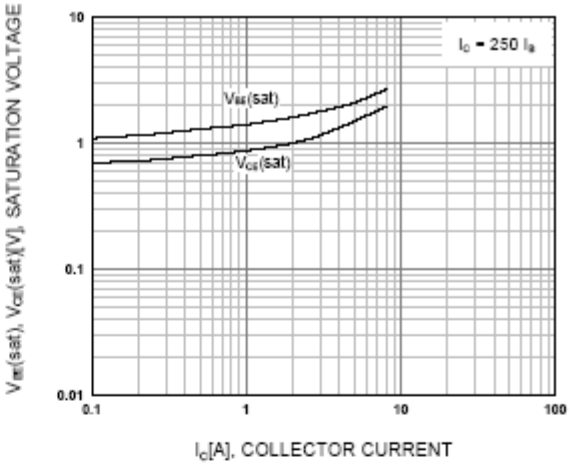



Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

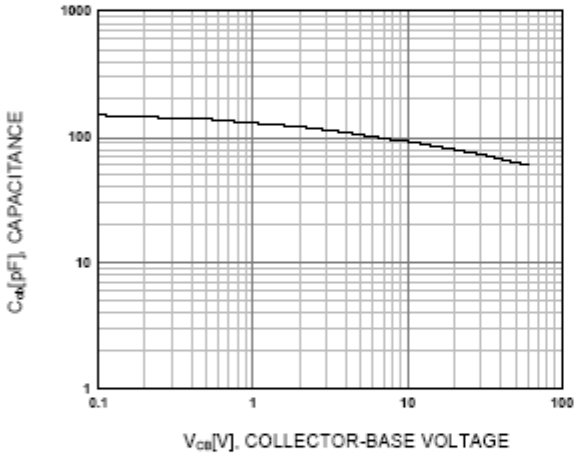



Figure 3. Collector Output Capacitance

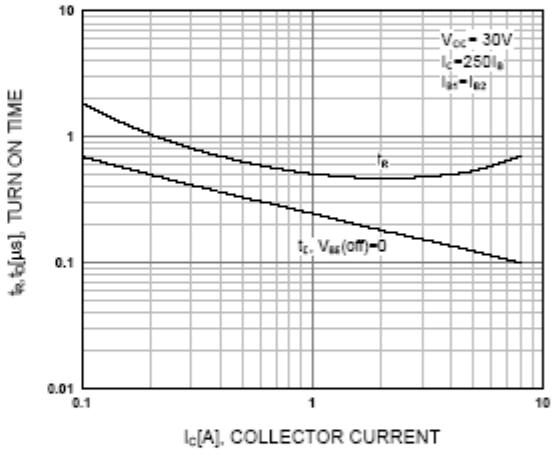



Figure 4. Turn On Time

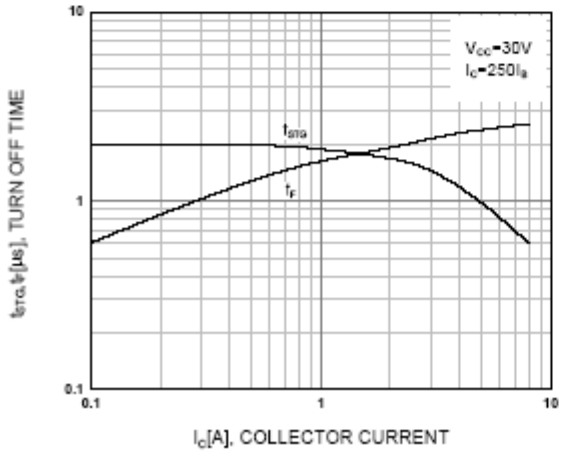



Figure 5. Turn Off Time

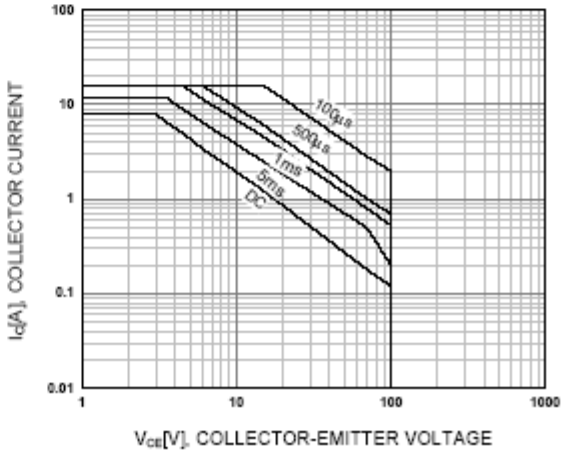



Figure 6. Safe Operating Area

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## Ordering Information

| Device | Packing |
|---|---|
| (Part Number)-TP | Tape&Reel;2.5Kpcs/Reel |

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