# PNP TIP125-126-127

# SILICON DARLINGTON POWER TRANSISTORS

PNP epitaxial-base transistors in a monolithic Dalrington circuit and housed in a TO-220 enveloppe. They are intended for use in power linear and switching applications.
NPN complements are TIP120-121-122
Compliance to RoHS.

## ABSOLUTE MAXIMUM RATINGS

| Symbol | Ratings | | | Value | Unit |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | | TIP125 | -60 | V |
| | | | TIP126 | -80 | |
| | | | TIP127 | -100 | |
| $V_{CEO}$ | Collector-Emitter Voltage | | TIP125 | -60 | V |
| | | | TIP126 | -80 | |
| | | | TIP127 | -100 | |
| $V_{EBO}$ | Emitter-Base Voltage | | TIP125 | -5 | V |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $I_C$ | Collector Current | | TIP125 | -5 | A |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $I_{CM}$ | Collector Peak Current | | TIP125 | -8 | A |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $I_B$ | Base Current | | TIP125 | -120 | mA |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $P_T$ | Power Dissipation | @ $T_c$ < 25° | TIP125 | 65 | W |
| | | | TIP126 | | |
| | | | TIP127 | | |
| | | @ $T_a$ < 25° | TIP125 | 2 | |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $T_J$ | Junction Temperature | | TIP125 | 150 | °C |
| | | | TIP126 | | |
| | | | TIP127 | | |
| $T_S$ | Storage Temperature range | | TIP125 | -65 to +150 | |
| | | | TIP126 | | |
| | | | TIP127 | | |

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## THERMAL CHARACTERISTICS

| Symbol | Ratings | Value | Unit |
|---|---|---|---|
| $R_{thJ\text{-}case}$ | From junction-case | 1.92 | °C/W |
| $R_{thJ\text{-}amb}$ | From junction-ambient | 62.5 | °C/W |

## ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol | Ratings | Test Condition(s) | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cutoff Current | $I_E$= 0<br>$V_{CB}$ = -$V_{CBO}$max | TIP125<br>TIP126<br>TIP127 | - | - | -0.2 | mA |
| $I_{CEO}$ | Collector Cutoff Current | $I_E$= 0<br>$V_{CE}$ = 1/2 -$V_{CEO}$max | TIP125<br>TIP126<br>TIP127 | - | - | -0.5 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= -5 V<br>$I_C$= 0 | TIP125<br>TIP126<br>TIP127 | - | - | -2 | mA |
| $V_{CEO}$ | Collector-Emitter Breakdown Voltage (*) | $I_C$= -30 mA<br>$I_B$= 0 | TIP125<br>TIP126<br>TIP127 | -60<br>-80<br>-100 | -<br>-<br>- | -<br>-<br>- | V |
| $V_{CE(SAT)}$ | Collector-Emitter saturation Voltage (*) | $I_C$= -3 A<br>$I_B$= -12 mA | TIP125<br>TIP126<br>TIP127 | - | - | -2 | V |
| | | $I_C$= -5 A<br>$I_B$= -20 mA | TIP125<br>TIP126<br>TIP127 | - | - | -4 | |
| $V_{BE(on)}$ | Base-Emitter Voltage (*) | $I_C$= -3 A<br>$V_{CE}$= -3 V | TIP125<br>TIP126<br>TIP127 | - | - | -2.5 | V |
| $h_{FE}$ | DC Current Gain (*) | $V_{CE}$= -3.0 V<br>$I_C$= -0.5 A | TIP125<br>TIP126<br>TIP127 | 1000 | - | - | - |
| | | $V_{CE}$= -3.0 V<br>$I_C$= -3 A | TIP125<br>TIP126<br>TIP127 | 1000 | - | - | |
| $C_{OB}$ | Output Capacitance | $I_E$= 0, $V_{CB}$ = -10 V<br>$f_{test}$= 1MHz | TIP125<br>TIP126<br>TIP127 | - | - | 200 | pF |

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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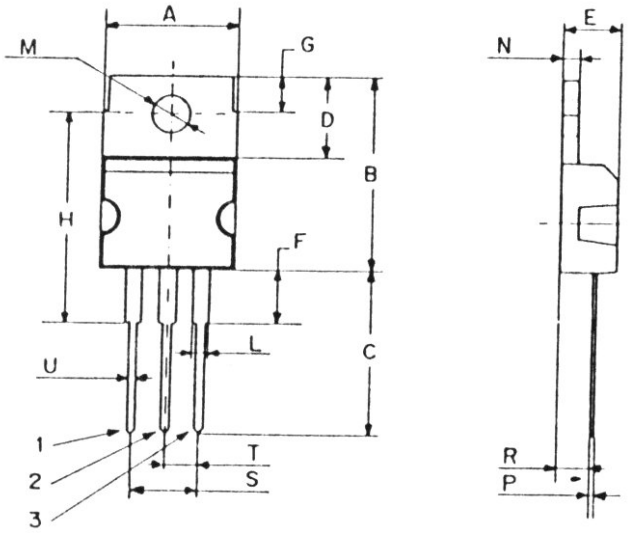
## MECHANICAL DATA CASE TO-220

| DIMENSIONS (mm) | | |
|---|---|---|
| | Min. | Max. |
| A | 9,90 | 10,30 |
| B | 15,65 | 15,90 |
| C | 13,20 | 13,40 |
| D | 6,45 | 6,65 |
| E | 4,30 | 4,50 |
| F | 2,70 | 3,15 |
| G | 2,60 | 3,00 |
| H | 15,75 | 17.15 |
| L | 1,15 | 1,40 |
| M | 3,50 | 3,70 |
| N | - | 1,37 |
| P | 0,46 | 0,55 |
| R | 2,50 | 2,70 |
| S | 4,98 | 5,08 |
| T | 2.49 | 2.54 |
| U | 0,70 | 0,90 |




| | |
|---|---|
| Pin 1 : | Base |
| Pin 2 : | Collector |
| Pin 3 : | Emitter |
| Case : | Collector |

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