

isc Silicon PNP Darlington Power Transistor

TIP127B

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 1000(\text{Min}) @ I_C = -3A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = -100V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})} = -2.0V(\text{Max}) @ I_C = -3A$
= $-4.0V(\text{Max}) @ I_C = -5A$
- Complement to Type TIP122B
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

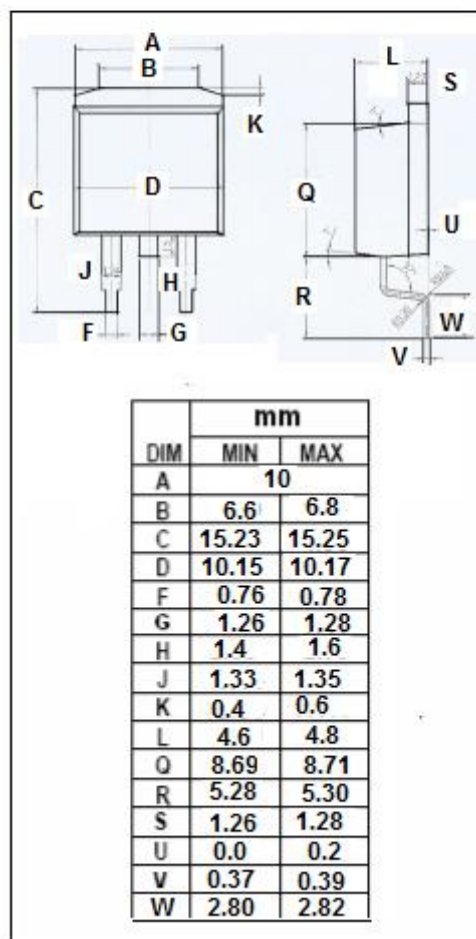
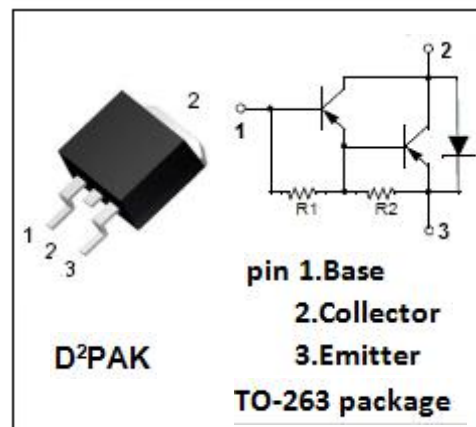
- Designed for general purpose amplifier and low speed switching applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | -100 | V |
| V_{CEO} | Collector-Emitter Voltage | -100 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current-Continuous | -5 | A |
| I_{CM} | Collector Current-Peak | -8 | A |
| I_B | Base Current-DC | -120 | mA |
| P_C | Collector Power Dissipation $T_C = 25^\circ\text{C}$ | 65 | W |
| | Collector Power Dissipation $T_a = 25^\circ\text{C}$ | 2 | |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -65~150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.92 | $^\circ\text{C/W}$ |



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|------------------------|--------------------------------------|---|------|------|------|------|
| V _{CEO(SUS)} | Collector-Emitter Sustaining Voltage | I _C = -30mA, I _B = 0 | -100 | | | V |
| V _{CE(sat)-1} | Collector-Emitter Saturation Voltage | I _C = -3A, I _B = -12mA | | | -2.0 | V |
| V _{CE(sat)-2} | Collector-Emitter Saturation voltage | I _C = -5A, I _B = -20mA | | | -4.0 | V |
| V _{BE(on)} | Base-Emitter On Voltage | I _C = -3.0A ; V _{CE} = -3V | | | -2.5 | V |
| I _{CBO} | Collector Cutoff Current | V _{CB} = -100V, I _E = 0 | | | -0.2 | mA |
| I _{CEO} | Collector Cutoff Current | V _{CE} = -50V, I _B = 0 | | | -0.5 | mA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = -5V; I _C = 0 | | | -2 | mA |
| h _{FE-1} | DC Current Gain | I _C = -0.5A ; V _{CE} = -3V | 1000 | | | |
| h _{FE-2} | DC Current Gain | I _C = -3.0A ; V _{CE} = -3V | 1000 | | | |
| C _{OB} | Output Capacitance | I _E = 0; V _{CB} = -10V, f= 0.1MHz | | | 300 | pF |

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