

isc Silicon PNP Power Transistor

TIP513

DESCRIPTION

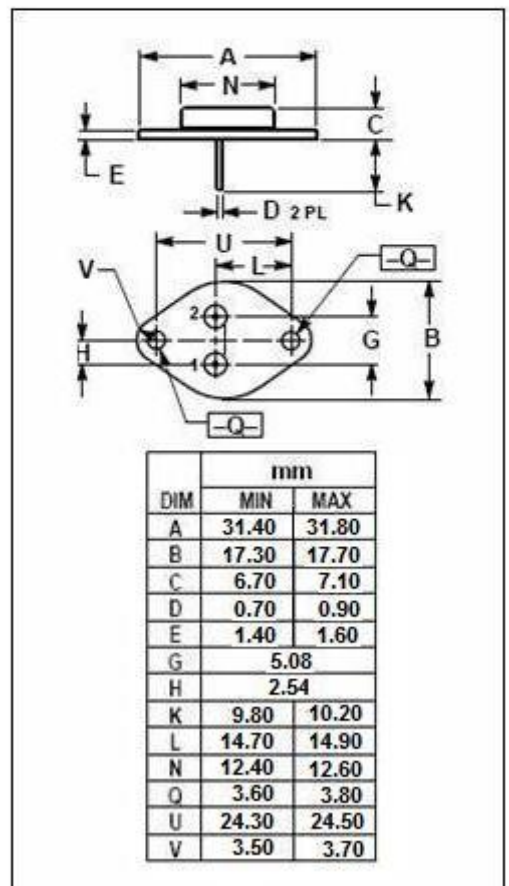
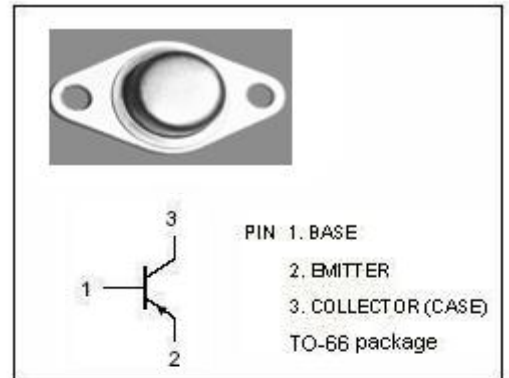
- Continuous Collector Current- $I_C = -5A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = -150V(\text{Min.})$
- Collector Power Dissipation-
: $P_C = 30W @ T_C \leq 100^\circ C$

APPLICATIONS

- Designed for power amplifier and high speed switching applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | -150 | V |
| V_{CEO} | Collector-Emitter Voltage | -150 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current-Continuous | -5 | A |
| I_{CM} | Collector Current-Peak | -7.5 | A |
| I_B | Base Current-Continuous | -2 | A |
| P_C | Collector Power Dissipation @ $T_a = 25^\circ C$ | 2 | W |
| | Collector Power Dissipation @ $T_C \leq 100^\circ C$ | 30 | |
| T_J | Junction Temperature | 200 | $^\circ C$ |
| T_{stg} | Storage Temperature | -65~200 | $^\circ C$ |



THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 3.33 | $^\circ C/W$ |

isc Silicon NPN Power Transistor**TIP513****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|-----------------|--------------------------------------|--|------|--------------|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = -30\text{mA}; I_B = 0$ | -150 | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C = -2.5\text{A}; I_B = -0.25\text{A}$ | | -1.0 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C = -5\text{A}; I_B = -0.5\text{A}$ | | -2.0 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = -5\text{A}; V_{CE} = -4\text{V}$ | | -2.2 | V |
| I_{CEO} | Collector Cutoff Current | $V_{CE} = -75\text{V}; I_B = 0$ | | -0.3 | mA |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = -150\text{V}; I_E = 0$ | | -1.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -2.5\text{V}; I_C = 0$ $V_{EB} = -5\text{V}; I_C = 0$ | | -0.1 -1.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C = -2.5\text{A}; V_{CE} = -4\text{V}$ | 30 | 150 | |
| h_{FE-2} | DC Current Gain | $I_C = -5\text{A}; V_{CE} = -4\text{V}$ | 15 | | |