

isc Silicon NPN Power Transistor

2SC2507

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V(\text{Min})$
- Fast Switching Speed
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 0.7V(\text{Max.}) @ I_C = 10A$

APPLICATIONS

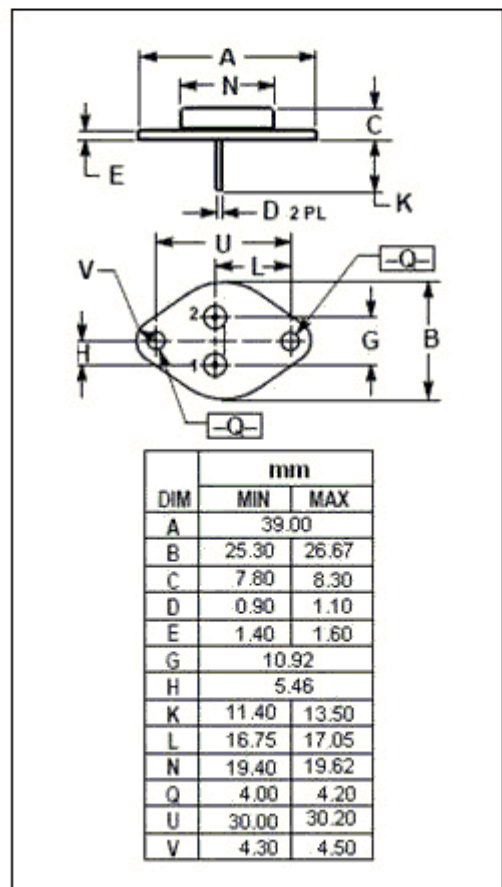
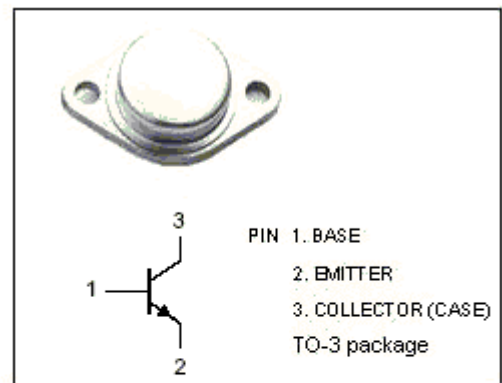
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulator's, inverters.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 500 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 20 | A |
| I_{CM} | Collector Current-Peak | 40 | A |
| I_B | Base Current-Continuous | 7 | A |
| I_{BM} | Base Current-Peak | 14 | A |
| P_C | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 200 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|-------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 0.625 | $^\circ\text{C/W}$ |



isc Silicon NPN Power Transistor**2SC2507****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------|--------------------------------------|------------------------------------|-----|------|-----|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=0.2\text{A}; I_B=0$ | 400 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=1\text{A}$ | | | 0.7 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=1\text{A}$ | | | 1.5 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=500\text{V}; I_E=0$ | | | 100 | μA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=320\text{V}; I_B=0$ | | | 100 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=7\text{V}; I_C=0$ | | | 1.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C=10\text{A}; V_{CE}=2\text{V}$ | 15 | | | |
| h_{FE-2} | DC Current Gain | $I_C=20\text{A}; V_{CE}=2\text{V}$ | 8 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C=1\text{A}; V_{CE}=10\text{V}$ | | 20 | | MHz |

Switching times

| | | | | | | |
|-----------|--------------|--|--|--|-----|---------------|
| t_{on} | Turn-on Time | $I_C=10\text{A}; I_{B1}=-I_{B2}=2\text{A}$ $R_L=3\Omega; V_{BB2}=4\text{V}$ | | | 1.0 | μs |
| t_{stg} | Storage Time | | | | 3.0 | μs |
| t_f | Fall Time | | | | 0.7 | μs |