

Silicon NPN Power Transistor

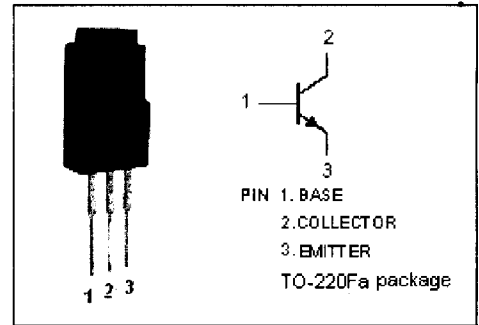
2SC4533

DESCRIPTION

- Collector-Base Breakdown Voltage-
: $V_{(BR)CBO} = 500V(\text{Min.})$
- Wide Area of Safe Operation
- High Speed Switching

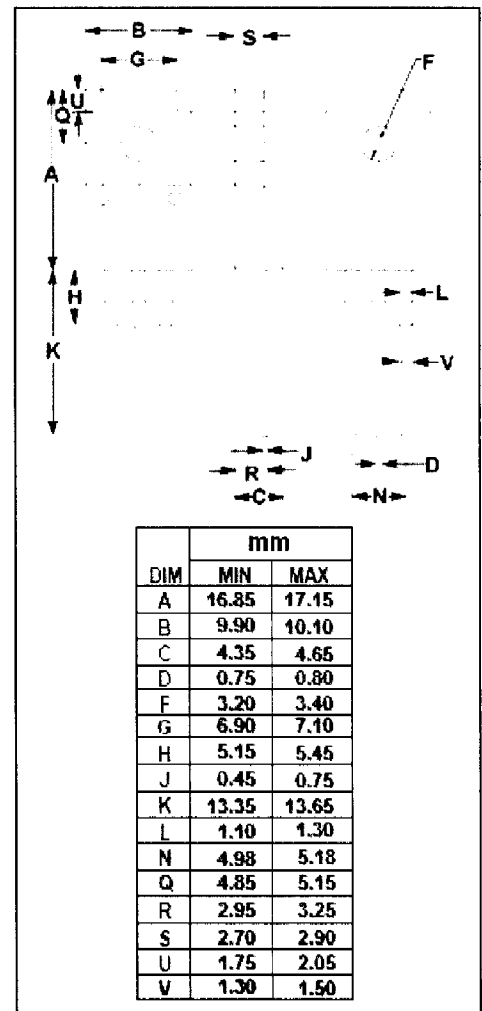
APPLICATIONS

- Designed for high speed switching applications.

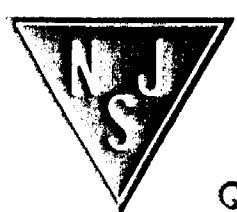


ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 500 | V |
| V_{CES} | Collector-Emitter Voltage | 500 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 3 | A |
| I_{CM} | Collector Current-Peak | 6 | A |
| I_B | Base Current-Continuous | 1.2 | A |
| P_C | Collector Power Dissipation @ $T_a=25^\circ\text{C}$ | 2 | W |
| | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 30 | |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



Silicon NPN Power Transistor

2SC4533

ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=10\text{mA}; I_B=0$ | 400 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=1.5\text{A}; I_B=0.3\text{A}$ | | | 1.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=1.5\text{A}; I_B=0.3\text{A}$ | | | 1.5 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=500\text{V}; I_E=0$ | | | 100 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 100 | μA |
| h_{FE-1} | DC Current Gain | $I_C=0.1\text{A}; V_{CE}=5\text{V}$ | 10 | | | |
| h_{FE-2} | DC Current Gain | $I_C=1.5\text{A}; V_{CE}=5\text{V}$ | 8 | | 40 | |
| f_T | Current-Gain—Bandwidth Product | $I_C=0.2\text{A}; V_{CE}=10\text{V}; f=1\text{MHz}$ | | 10 | | MHz |

Switching Times

| | | | | | | |
|----------|--------------|---|--|--|-----|---------------|
| t_{on} | Turn-on Time | $I_C=1.5\text{A}; I_{B1}=0.15\text{A}; I_{B2}=-0.3\text{A}; V_{CC}=200\text{V}$ | | | 1.0 | μs |
| t_s | Storage Time | | | | 3.0 | μs |
| t_f | Fall Time | | | | 0.3 | μs |