

Silicon PNP Power Transistor

2SB1507

DESCRIPTION

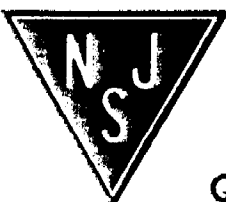
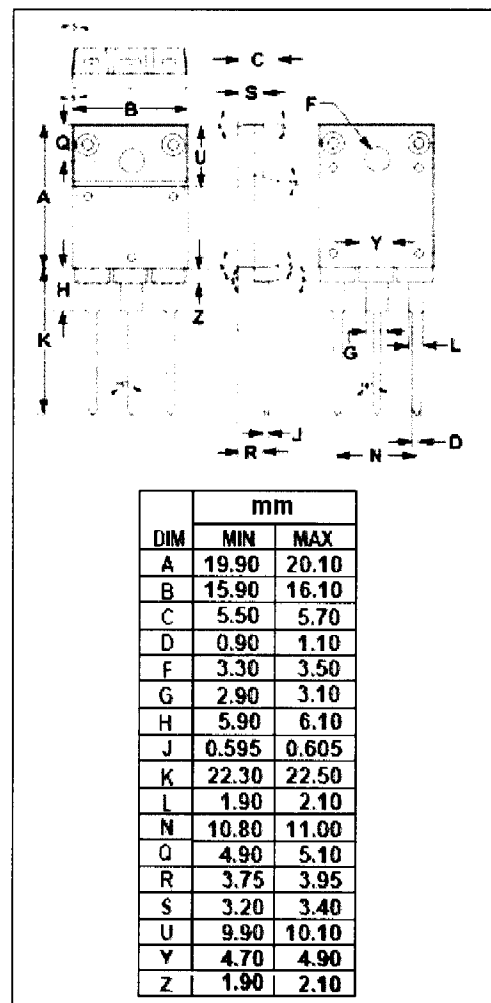
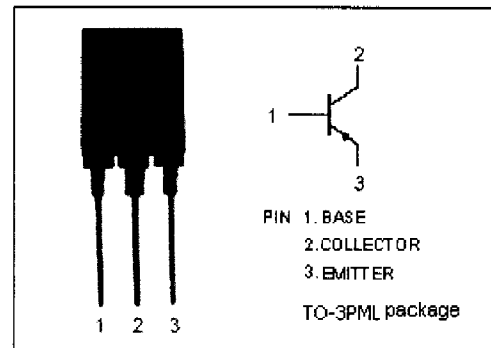
- Low Collector Saturation Voltage
 $V_{CE(sat)} = -0.4(V)(Max) @ I_C = -4A$
- Good Linearity of h_{FE}
- Wide Area of Safe Operation
- Complement to Type 2SD2280

APPLICATIONS

- Designed for relay drivers, high-speed inverters, converters.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | -60 | V |
| V_{CEO} | Collector-Emitter Voltage | -50 | V |
| V_{EBO} | Emitter-Base Voltage | -6 | V |
| I_C | Collector Current-Continuous | -7 | A |
| I_{CM} | Collector Current-Peak | -20 | A |
| P_C | Collector Power Dissipation @ $T_a = 25^\circ C$ | 3 | W |
| | Collector Power Dissipation @ $T_C = 25^\circ C$ | 40 | |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |



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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 | $I_C = -1\text{mA}; R_{BE} = \infty$ | -50 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C = -1\text{mA}; I_E = 0$ | -60 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E = -1\text{mA}; I_C = 0$ | -6 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -4\text{A}; I_B = -0.4\text{A}$ | | | -0.4 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = -40\text{V}; I_E = 0$ | | | -100 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -4\text{V}; I_C = 0$ | | | -100 | μA |
| h_{FE-1} | DC Current Gain | $I_C = -1\text{A}; V_{CE} = -2\text{V}$ | 70 | | 280 | |
| h_{FE-2} | DC Current Gain | $I_C = -5\text{A}; V_{CE} = -2\text{V}$ | 30 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C = -1\text{A}; V_{CE} = -5\text{V}$ | | 10 | | MHz |

Switching Times

| | | | | | | |
|-----------|--------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C = -2\text{A}; R_L = 10\ \Omega,$ $I_{B1} = -I_{B2} = -0.2\text{A}, V_{CC} = -20\text{V}$ | | 0.2 | | μs |
| t_{stg} | Storage Time | | | 0.7 | | μs |
| t_f | Fall Time | | | 0.1 | | μs |

◆ h_{FE-1} Classifications

| Q | R | S |
|--------|---------|---------|
| 70-140 | 100-200 | 140-280 |