

Silicon NPN Power Transistor

2N6835

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min})$
- High Switching Speed

APPLICATIONS

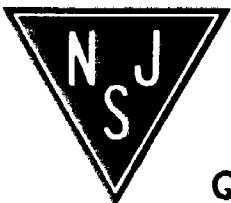
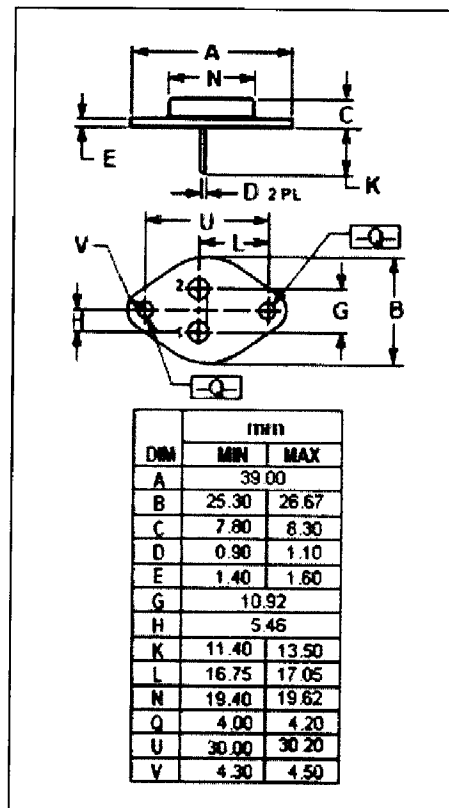
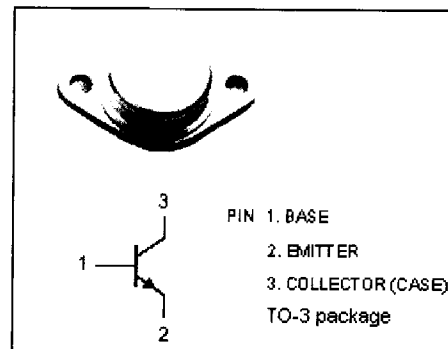
- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications.
- Typical applications:
- Switching regulators
- Inverters
- Motor controls
- Deflection circuits

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|----------------|---|---------|------------------|
| V_{CEV} | Collector-Emitter Voltage | 850 | V |
| $V_{CEO(SUS)}$ | Collector-Emitter Voltage | 450 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current-Continuous | 8 | A |
| I_{CM} | Collector Current-Peak | 16 | A |
| I_B | Base Current-Continuous | 6 | A |
| I_{BM} | Base Current-Peak | 12 | A |
| P_C | Collector Power Dissipation@ $T_c=25^\circ\text{C}$ | 150 | W |
| T_J | Junction Temperature | 200 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -65~200 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|--------------|--------------------------------------|------|--------------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 1.17 | $^\circ\text{C/W}$ |



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Quality Semi-Conductors

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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 | $I_C=100\text{mA}; I_B=0$ | 450 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C= 3A; I_B= 0.4A$ | | | 1.2 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C= 5A; I_B= 0.66A$ $I_C= 5A; I_B= 0.66A, T_C=100^\circ\text{C}$ | | | 2.5 3.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C= 5A; I_B= 0.66A$ $I_C= 5A; I_B= 0.66A, T_C=100^\circ\text{C}$ | | | 1.5 1.5 | V |
| I_{CEV} | Collector Cutoff Current | $V_{CEV}= 850V; V_{BE(off)}= 1.5V$ $V_{CEV}= 850V; V_{BE(off)}= 1.5V; T_C=100^\circ\text{C}$ | | | 0.25 1.5 | mA |
| I_{CER} | Collector Cutoff Current | $V_{CE}= 850V; R_{BE}= 50\ \Omega, T_C= 100^\circ\text{C}$ | | | 2.5 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}= 6.0V; I_C=0$ | | | 1.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C= 5A; V_{CE}= 5V$ | 7.5 | | 30 | |
| h_{FE-2} | DC Current Gain | $I_C= 8A; V_{CE}= 5V$ | 4 | | | |
| f_T | Current Gain-Bandwidth Product | $I_C= 0.25A; V_{CE}= 10V; f_{test}=10\text{MHz}$ | 10 | | 75 | MHz |
| C_{OB} | Output Capacitance | $I_E= 0; V_{CB}= 10V; f_{test}=1.0\text{kHz}$ | 50 | | 350 | pF |

Switching times;Resistive Load

| | | | | | | |
|-------|--------------|---|--|------|------|----|
| t_d | Delay Time | $I_C= 5A, V_{CC}= 250V;$ $I_{B1}= 0.66A; I_{B2}= -1.3A;$ $P_W= 30\ \mu\text{s}; R_{B2}= 4\ \Omega$ Duty Cycle $\leq 2.0\%$ | | 20 | 50 | ns |
| t_r | Rise Time | | | 85 | 250 | ns |
| t_s | Storage Time | | | 1000 | 2500 | ns |
| t_f | Fall Time | | | 70 | 250 | ns |