

**Silicon PNP Power Transistor**

**2SA1328**

**DESCRIPTION**

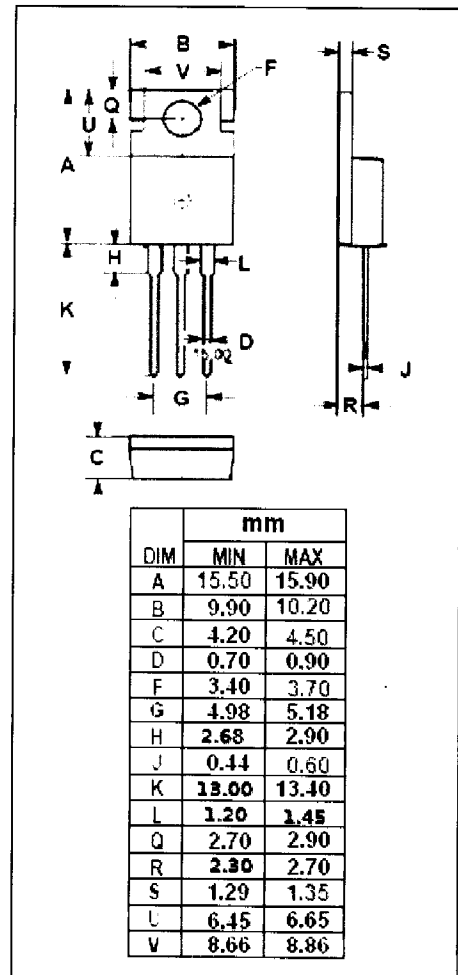
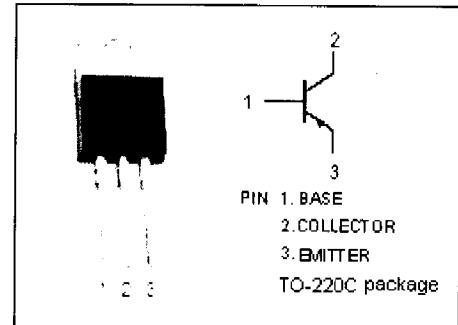
- Low Collector Saturation Voltage  
 $V_{CE(sat)} = -0.4(V)(Max) @ I_C = -6A$
- High Switching Speed
- Complement to Type 2SC3345

**APPLICATIONS**

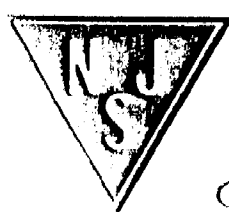
- Designed for high current switching applications.

**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                  | -12     | A          |
| $I_B$     | Base Current-Continuous                       | -2      | A          |
| $P_C$     | Total Power Dissipation<br>@ $T_C=25^\circ C$ | 40      | W          |
| $T_J$     | Junction Temperature                          | 150     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature Range                     | -55~150 | $^\circ C$ |



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# Silicon PNP Power Transistor

# 2SA1328

## 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  | $I_C = -50\text{mA}; I_B = 0$                           | -50 |      |      | V             |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -6\text{A}; I_B = -0.3\text{A}$                  |     |      | -0.4 | V             |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = -6\text{A}; I_B = -0.3\text{A}$                  |     |      | -1.2 | V             |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB} = -60\text{V}; I_E = 0$                         |     |      | -10  | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB} = -6\text{V}; I_C = 0$                          |     |      | -10  | $\mu\text{A}$ |
| $h_{FE-1}$    | DC Current Gain                      | $I_C = -1\text{A}; V_{CE} = -1\text{V}$                 | 70  |      | 240  |               |
| $h_{FE-2}$    | DC Current Gain                      | $I_C = -6\text{A}; V_{CE} = -1\text{V}$                 | 40  |      |      |               |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C = -1\text{A}; V_{CE} = -5\text{V}$                 |     | 70   |      | MHz           |
| $C_{OB}$      | Output Capacitance                   | $I_E = 0; V_{CB} = -10\text{V}; f_{test} = 1\text{MHz}$ |     | 320  |      | pF            |

### Switching Times

|           |              |   |  |     |  |               |
|-----------|--------------|---|--|-----|--|---------------|
| $t_{on}$  | Turn-on Time | $I_C = -6\text{A}, R_L = 5\Omega,$<br>$I_{B1} = -I_{B2} = -0.3\text{A}, V_{CC} = -30\text{V}$ |  | 0.3 |  | $\mu\text{s}$ |
| $t_{stg}$ | Storage Time |   |  | 1.0 |  | $\mu\text{s}$ |
| $t_f$     | Fall Time    |   |  | 0.5 |  | $\mu\text{s}$ |

### ◆ $h_{FE-1}$ Classifications

|        |         |
|--------|---------|
| O      | Y       |
| 70-140 | 120-240 |