

DESCRIPTION

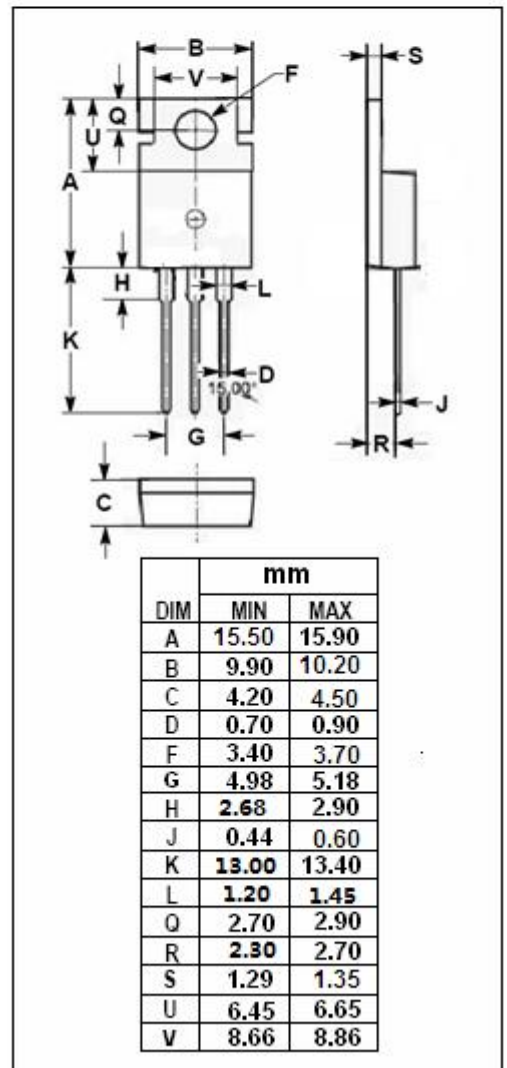
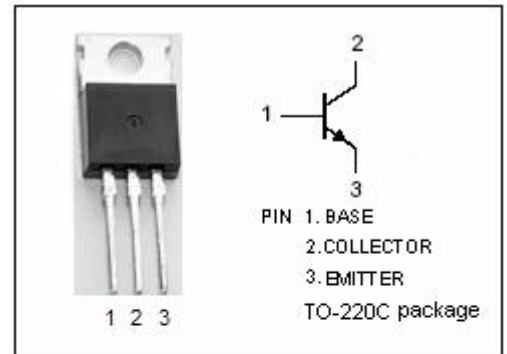
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 0.4V(\text{Max}) @ I_C = 3.0A$
- Complement to Type 2SB824

APPLICATIONS

- Designed for relay drivers, high-speed inverters, converters, and other general large-current switching applications.

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

| 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 | 5 | A |
| I_{CM} | Collector Current-Peak | 9 | A |
| P_C | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 30 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|-----|---------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C=1\text{mA}; I_E=0$ | 60 | | | V |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=1\text{mA}; R_{BE}=\infty$ | 50 | | | 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 | $I_C=3\text{A}; I_B=0.3\text{A}$ | | | 0.4 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=40\text{V}; I_E=0$ | | | 100 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=4\text{V}; I_E=0$ | | | 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 | $I_C=3\text{A}; V_{CE}=2\text{V}$ | 30 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C=1\text{A}; V_{CE}=5\text{V}$ | | 30 | | MHz |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}=10\text{V}, f=1\text{MHz}$ | | 100 | | pF |

Switching times

| | | | | | | |
|-----------|--------------|---|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C=2\text{A}, I_{B1}=I_{B2}=0.2\text{A}$ $R_L=10\Omega; V_{CC}=20\text{V}$ | | 0.1 | | μs |
| t_{stg} | Storage Time | | | 1.4 | | μs |
| t_f | Fall Time | | | 0.2 | | μs |

◆ **h_{FE-1} Classifications**

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

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