

isc Silicon NPN Power Transistor

MJE3055T

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 20-100@I_C = 4A$
- Complement to Type MJE2955T

APPLICATIONS

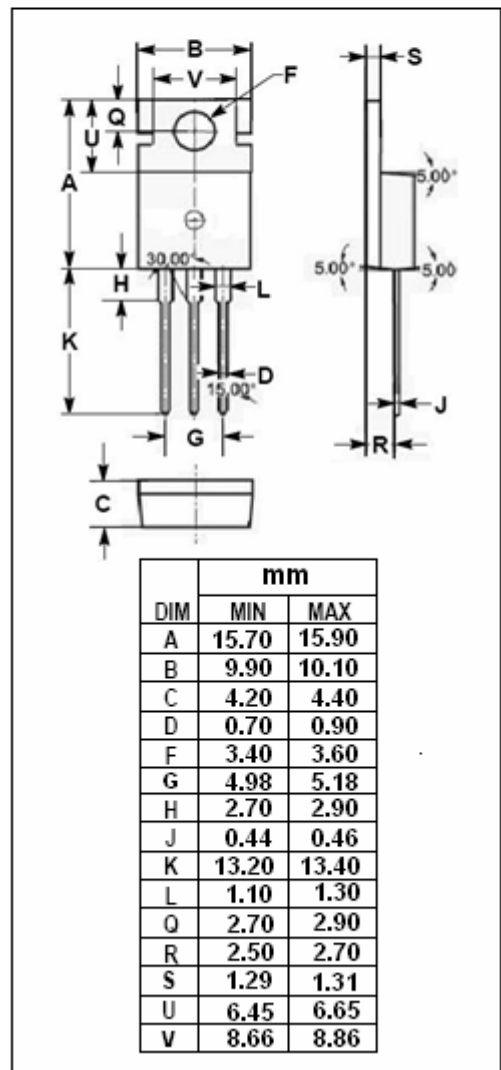
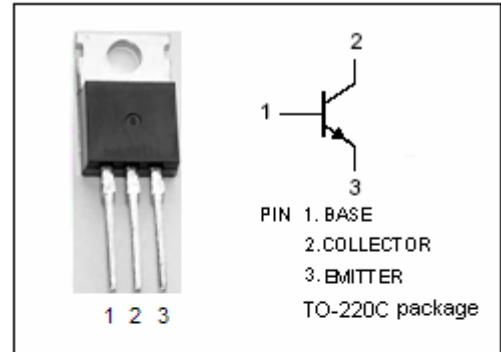
- Designed for use in general-purpose amplifier and switching applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 70 | V |
| V_{CEO} | Collector-Emitter Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 10 | A |
| I_B | Base Current-Continuous | 6 | A |
| P_C | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 75 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.67 | $^\circ\text{C/W}$ |



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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 | $I_C=200\text{mA}; I_B=0$ | -60 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=4\text{A}; I_B=0.4\text{A}$ | | | 1.1 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=3.3\text{A}$ | | | 8.0 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C=4\text{A}; V_{CE}=4\text{V}$ | | | 1.8 | V |
| I_{CEX} | Collector Cutoff Current | $V_{CE}=70\text{V}; V_{EB(off)}=-1.5\text{V}$ $V_{CE}=70\text{V}; V_{EB(off)}=-1.5\text{V}; T_C=150^{\circ}\text{C}$ | | | 1.0 5.0 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=30\text{V}; I_B=0$ | | | 0.7 | mA |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=70\text{V}; I_E=0$ $V_{CB}=70\text{V}; I_E=0; T_C=150^{\circ}\text{C}$ | | | 1.0 10 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 5.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C=4\text{A}; V_{CE}=4\text{V}$ | 20 | | 100 | |
| h_{FE-2} | DC Current Gain | $I_C=10\text{A}; V_{CE}=4\text{V}$ | 5 | | | |
| f_T | Current Gain-Bandwidth Product | $I_C=0.5\text{A}; V_{CE}=10\text{V}; f=500\text{kHz}$ | 2.0 | | | MHz |