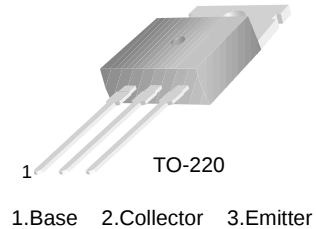


# MJE3055T

MJE3055T

## General Purpose and Switching Applications

- DC Current Gain Specified to  $I_C = 10A$
- High Current Gain-Bandwidth Product :  $f_T = 2MHz$  (Min.)



## NPN Silicon Transistor

### Absolute Maximum Ratings $T_C = 25^\circ C$ unless otherwise noted

| Symbol    | Parameter                                    | Value      | Units      |
|-----------|----------------------------------------------|------------|------------|
| $V_{CBO}$ | Collector -Base Voltage                      | 70         | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                    | 60         | V          |
| $V_{EBO}$ | Emitter-Base Voltage                         | 5          | V          |
| $I_C$     | Collector Current                            | 10         | A          |
| $I_B$     | Base Current                                 | 6          | A          |
| $P_C$     | Collector Dissipation ( $T_C = 25^\circ C$ ) | 75         | W          |
| $P_C$     | Collector Dissipation ( $T_a = 25^\circ C$ ) | 0.6        | W          |
| $T_J$     | Junction Temperature                         | 150        | $^\circ C$ |
| $T_{STG}$ | Storage Temperature                          | - 55 ~ 150 | $^\circ C$ |

### Electrical Characteristics $T_C = 25^\circ C$ unless otherwise noted

| Symbol                   | Parameter                             | Test Condition                                                                                      | Min.    | Max.     | Units    |
|--------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------|---------|----------|----------|
| $BV_{CEO}$               | Collector-Emitter Breakdown Voltage   | $I_C = 200mA, I_B = 0$                                                                              | 60      |          | V        |
| $I_{CEO}$                | Collector Cut-off Current             | $V_{CE} = 30V, I_B = 0$                                                                             |         | 700      | $\mu A$  |
| $I_{CEX1}$<br>$I_{CEX2}$ | Collector Cut-off Current             | $V_{CE} = 70V, V_{BE}(off) = -1.5V$<br>$V_{CE} = 70V, V_{BE}(off) = -1.5V$<br>@ $T_C = 150^\circ C$ |         | 1<br>5   | mA<br>mA |
| $I_{EBO}$                | Emitter Cut-off Current               | $V_{EB} = 5V, I_C = 0$                                                                              |         | 5        | mA       |
| $h_{FE}$                 | *DC Current Gain                      | $V_{CE} = 4V, I_C = 4A$<br>$V_{CE} = 4V, I_C = 10A$                                                 | 20<br>5 | 100      |          |
| $V_{CE(sat)}$            | *Collector-Emitter Saturation Voltage | $I_C = 4A, I_B = 0.4A$<br>$I_C = 10A, I_B = 3.3A$                                                   |         | 1.1<br>8 | V<br>V   |
| $V_{BE(on)}$             | *Base-Emitter On Voltage              | $V_{CE} = 4V, I_C = 4A$                                                                             |         | 1.8      | V        |
| $f_T$                    | Current Gain Bandwidth Product        | $V_{CE} = 10V, I_C = 500mA$                                                                         | 2       |          | MHz      |

\* Pulse test:  $PW \leq 300\mu s$ , duty cycle  $\leq 2\%$  Pulse

## Typical Characteristics

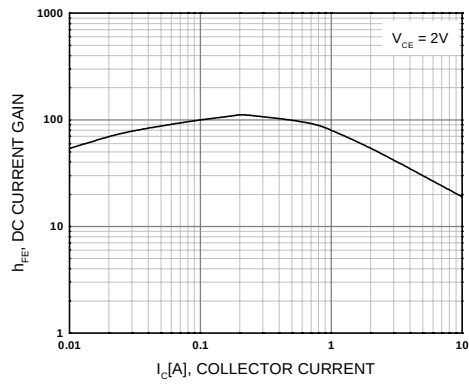


Figure 1. DC current Gain

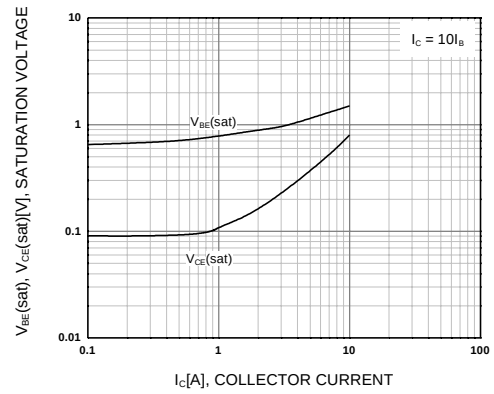


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

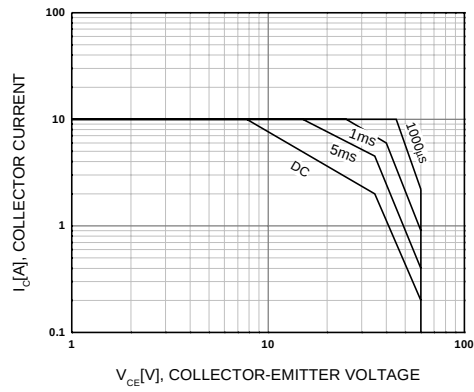


Figure 3. Safe Operating Area

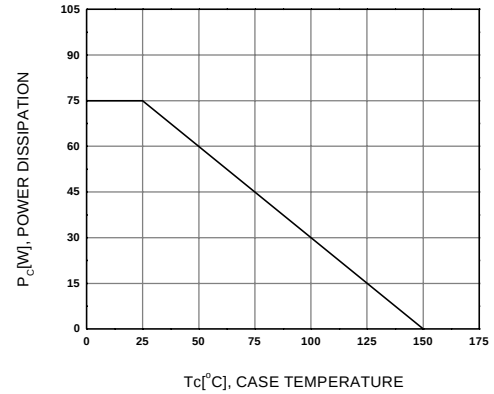
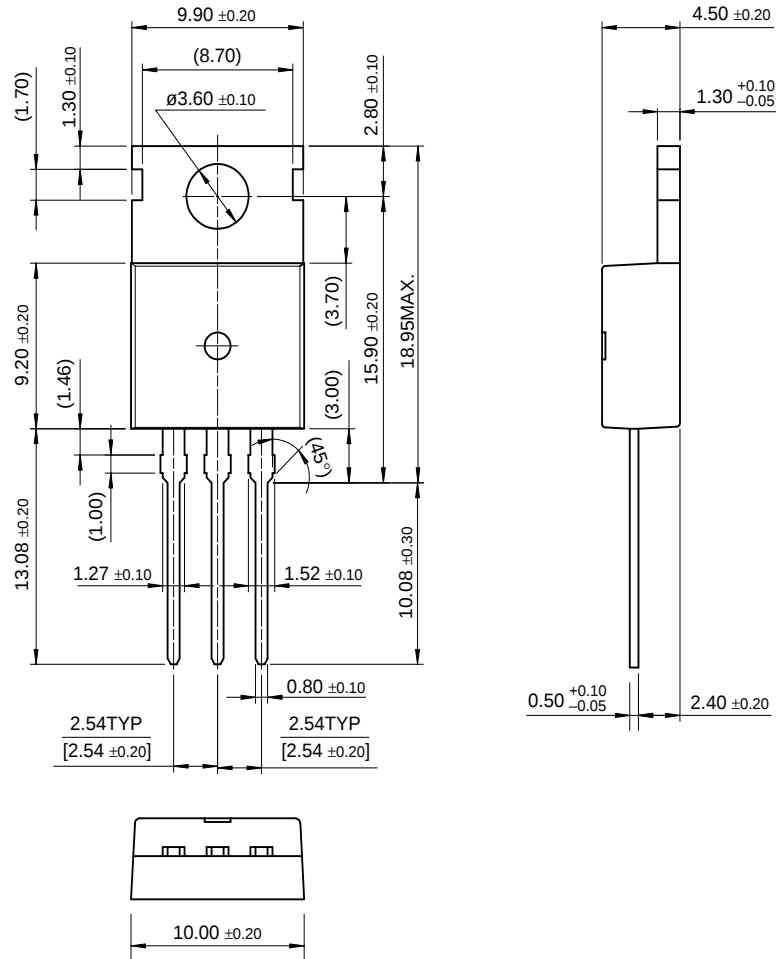


Figure 4. Power Derating

# Package Dimensions

## TO-220



Dimensions in Millimeters

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| Bottomless™          | GlobalOptoisolator™ | QFET™               | TinyLogic™ |
| CoolFET™             | GTO™                | QS™                 | VCX™       |
| CROSSVOLT™           | HiSeC™              | QT Optoelectronics™ | UHC™       |
| DOME™                | ISOPLANAR™          | Quiet Series™       |            |
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