# NPN MJ4033 – MJ4034 – MJ4035

## MEDIUM POWER COMPLEMENTARY SILICON TRANSISTORS

They are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case.
They are intented for use as output devices in complementary general purpose amplifier applications.
The complementary PNP types are the MJ4030, MJ4031, MJ4032.
Compliance to RoHS

### ABSOLUTE MAXIMUM RATINGS

| Symbol | Ratings | | | Value | Unit |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | $I_E$=0 | MJ4033 | 60 | V |
| | | | MJ4034 | 80 | |
| | | | MJ4035 | 100 | |
| $V_{CEO}$ | Collector-EmitterVoltage | $I_B$=0 | MJ4033 | 60 | V |
| | | | MJ4034 | 80 | |
| | | | MJ4035 | 100 | |
| $V_{EBO}$ | Emitter-Base Voltage | $I_C$=0 | MJ4033 | 5.0 | V |
| | | | MJ4034 | | |
| | | | MJ4035 | | |
| $I_C$ | Collector Current | | | 16 | A |
| $I_B$ | Base Current | | | 0.5 | A |
| $P_T$ | Power Dissipation | @ $T_C$ < 25° | | 150 | W |
| $T_J$ | Junction Temperature | | | 200 | °C |
| $T_s$ | Storage Temperature | | | -65 to +200 | |

### THERMAL CHARACTERISTICS

| Symbol | Ratings | Value | Unit |
|---|---|---|---|
| $R_{thJ\text{-}C}$ | Thermal Resistance, Junction to Case | 1.17 | °C/W |

# NPN MJ4033 – MJ4034 – MJ4035

## ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol | Ratings | Test Condition(s) | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage (*) | $I_C$=100 mA, $I_B$=0 | MJ4033 | 60 | - | - | V |
| | | | MJ4034 | 80 | - | - | |
| | | | MJ4035 | 100 | | | |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CE}$=30 Vdc, $I_B$=0 | MJ4033 | - | - | 3.0 | mA |
| | | $V_{CE}$=40 Vdc, $I_B$=0 | MJ4034 | - | - | | |
| | | $V_{CE}$=50 V, $I_B$=0 | MJ4035 | - | - | | |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{BE}$=5.0 V, $I_C$=0 | MJ4033 | - | - | 5.0 | mA |
| | | | MJ4034 | | | | |
| | | | MJ4035 | | | | |
| $I_{CER}$ | Collector-Emitter Leakage Current | $V_{CB}$=60 V<br>$R_{BE}$=1.0 kΩ | MJ4033 | - | - | 1.0 | mAdc |
| | | $V_{CB}$=80 V<br>$R_{BE}$=1.0 kΩ | MJ4034 | - | - | | |
| | | $V_{CB}$=100 V<br>$R_{BE}$=1.0 kΩ | MJ4035 | | | | |
| | | $V_{CB}$=60 V<br>$R_{BE}$=1.0 kΩ<br>$T_C$=150°C | MJ4033 | - | - | 5.0 | |
| | | $V_{CB}$=80 V<br>$R_{BE}$=1.0 kΩ<br>$T_C$=150°C | MJ4034 | - | - | | |
| | | $V_{CB}$=100 V<br>$R_{BE}$=1.0 kΩ<br>$T_C$=150°C | MJ4035 | | | | |
| $V_{CE(SAT)}$ | Collector-Emitter saturation Voltage (*) | $I_C$=10 A<br>$I_B$=40 mA | MJ4033 | - | - | 2.5 | Vdc |
| | | | MJ4034 | | | | |
| | | | MJ4035 | | | | |
| | | $I_C$=16 A<br>$I_B$=80 mA | MJ4033 | - | - | 4.0 | |
| | | | MJ4034 | | | | |
| | | | MJ4035 | | | | |
| $V_{BE}$ | Base-Emitter Voltage (*) | $I_C$=10 A<br>$V_{CE}$=3.0V | MJ4033 | - | - | 3 | V |
| | | | MJ4034 | | | | |
| | | | MJ4035 | | | | |
| $h_{FE}$ | DC Current Gain (*) | $V_{CE}$=10 V<br>$I_C$=3.0 A | MJ4033 | 1000 | - | - | - |
| | | | MJ4034 | | | | |
| | | | MJ4035 | | | | |

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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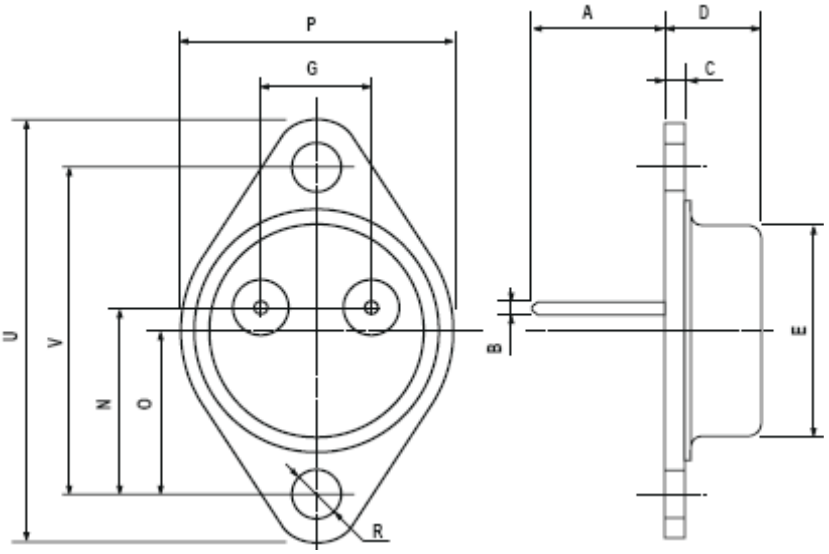
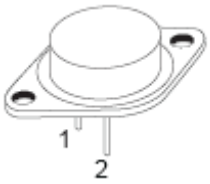
## MECHANICAL DATA CASE TO-3

| DIMENSIONS (mm) | | |
|---|---|---|
| | min | max |
| A | 11 | 13.10 |
| B | 0.97 | 1.15 |
| C | 1.5 | 1.65 |
| D | 8.32 | 8.92 |
| F | 19 | 20 |
| G | 10.70 | 11.1 |
| N | 16.50 | 17.20 |
| P | 25 | 26 |
| R | 4 | 4.09 |
| U | 38.50 | 39.30 |
| V | 30 | 30.30 |




| | |
|---|---|
| Pin 1 : | Base |
| Pin 2 : | Emitter |
| Case : | Collector |

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