

MJE371G

Plastic Medium-Power PNP Silicon Transistor

This device is designed for use in general-purpose amplifier and switching circuits. Recommended for use in 5 to 20 Watt audio amplifiers utilizing complementary symmetry circuitry.

Features

- High DC Current Gain
- MJE371 is Complementary to NPN MJE521
- These Devices are Pb-Free and are RoHS Compliant*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|----------------|-------------|---------------------------|
| Collector-Emitter Voltage | V_{CEO} | 40 | Vdc |
| Collector-Base Voltage | V_{CB} | 40 | Vdc |
| Emitter-Base Voltage | V_{EB} | 4.0 | Vdc |
| Collector Current – Continuous | I_C | 4.0 | Adc |
| Collector Current – Peak | I_{CM} | 8.0 | Adc |
| Base Current – Continuous | I_B | 2.0 | Adc |
| Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C | P_D | 40 320 | W mW/ $^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|-----------------|------|--------------------|
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 3.12 | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|--|----------------|----|-----|-----------------|
| Collector-Emitter Sustaining Voltage ($I_C = 100\text{ mAdc}$, $I_B = 0$) (Note 1) | $V_{CEO(sus)}$ | 40 | – | Vdc |
| Collector-Base Cutoff Current ($V_{CB} = 40\text{ Vdc}$, $I_E = 0$) | I_{CBO} | – | 100 | μAdc |
| Emitter-Base Cutoff Current ($V_{EB} = 4.0\text{ Vdc}$, $I_C = 0$) | I_{EBO} | – | 100 | μAdc |

ON CHARACTERISTICS

| | | | | |
|--|----------|----|---|---|
| DC Current Gain (Note 1) ($I_C = 1.0\text{ Adc}$, $V_{CE} = 1.0\text{ Vdc}$) | h_{FE} | 40 | – | – |
|--|----------|----|---|---|

1. Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

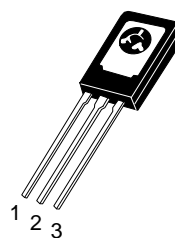
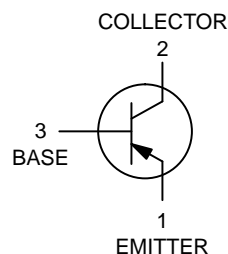
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



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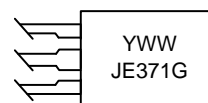
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**4 AMPERES
POWER TRANSISTOR
PNP SILICON
40 VOLTS, 40 WATTS**



**TO-225
CASE 77
STYLE 1**

MARKING DIAGRAM



Y = Year
WW = Work Week
JE371 = Device Code
G = Pb-Free Package

ORDERING INFORMATION

| Device | Package | Shipping |
|---------|---------------------|-----------------|
| MJE371G | TO-225 (Pb-Free) | 500 Units / Box |

MJE371G

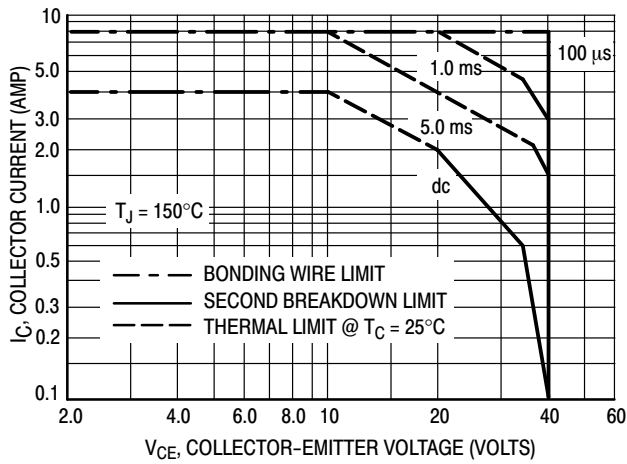


Figure 1. Active-Region Safe Operating Area

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 1 is based on $T_{J(pk)} = 150^\circ\text{C}$; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150^\circ\text{C}$. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

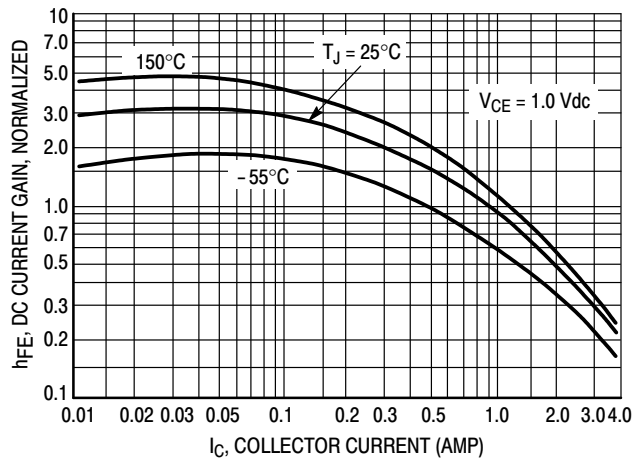


Figure 2. DC Current Gain

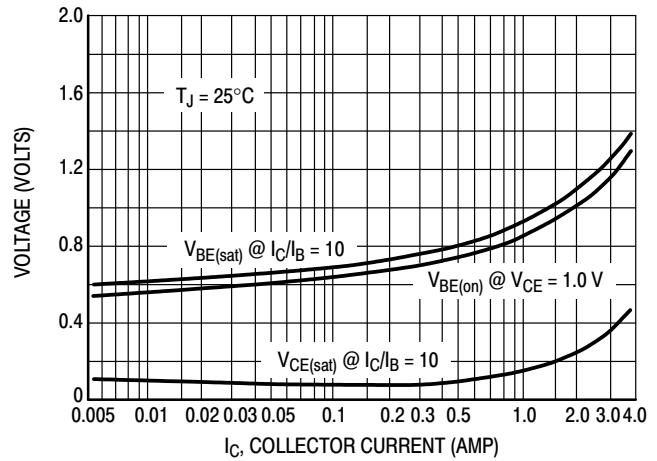


Figure 3. "On" Voltage

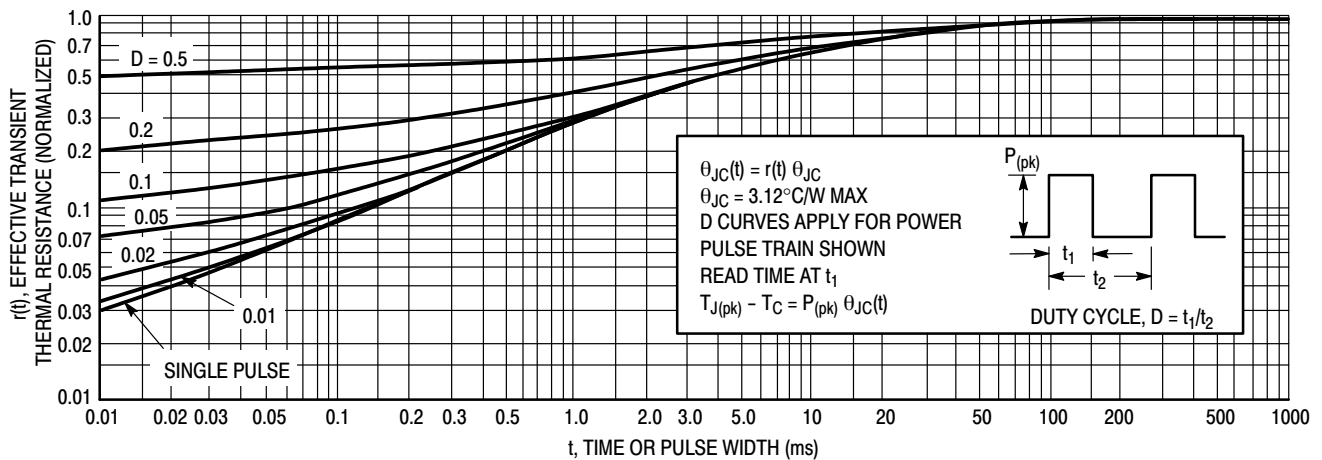
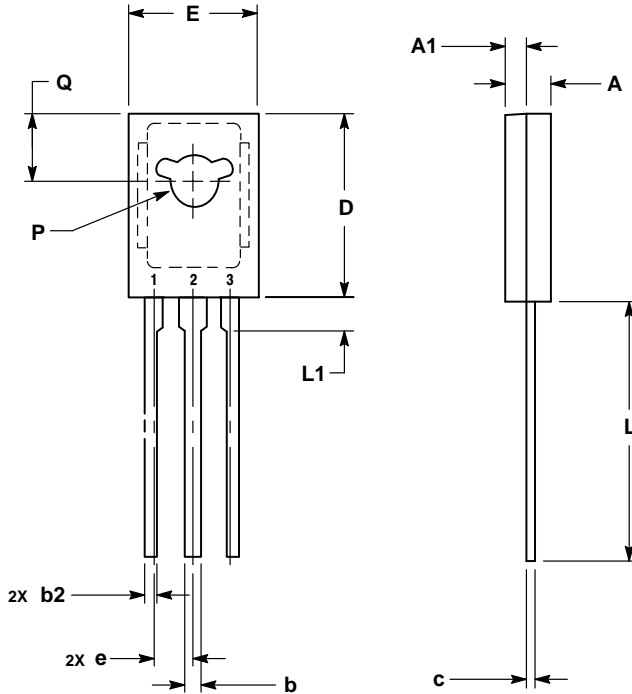


Figure 4. Thermal Response

MJE371G

PACKAGE DIMENSIONS

TO-225
CASE 77-09
ISSUE AB




NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. NUMBER AND SHAPE OF LUGS OPTIONAL.

| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 2.40 | 3.00 |
| A1 | 1.00 | 1.50 |
| b | 0.60 | 0.90 |
| b2 | 0.51 | 0.88 |
| c | 0.39 | 0.63 |
| D | 10.60 | 11.10 |
| E | 7.40 | 7.80 |
| e | 2.04 | 2.54 |
| L | 14.50 | 16.63 |
| L1 | 1.27 | 2.54 |
| P | 2.90 | 3.30 |
| Q | 3.80 | 4.20 |

STYLE 1:

- PIN 1. EMITTER
2. COLLECTOR
3. BASE

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