

# 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 $25^\circ\text{C}$	$P_D$	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 those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

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

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

Characteristic	Symbol	Min	Max	Unit
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### 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	$\mu\text{Adc}$
Emitter-Base Cutoff Current ( $V_{EB} = 4.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	-	100	$\mu\text{Adc}$

### ON CHARACTERISTICS

DC Current Gain (Note 1) ( $I_C = 1.0 \text{ Adc}, V_{CE} = 1.0 \text{ Vdc}$ )	$h_{FE}$	40	-	-
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Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

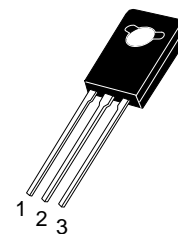
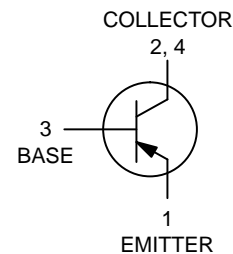
\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



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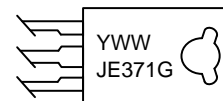
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**4 AMPERES  
POWER TRANSISTOR  
PNP SILICON  
40 VOLTS, 40 WATTS**



**TO-225  
CASE 77-09  
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

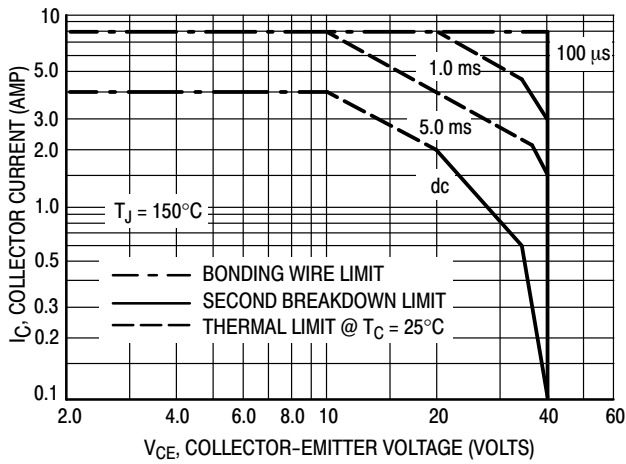


Figure 1. Active-Region Safe Operating Area

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.

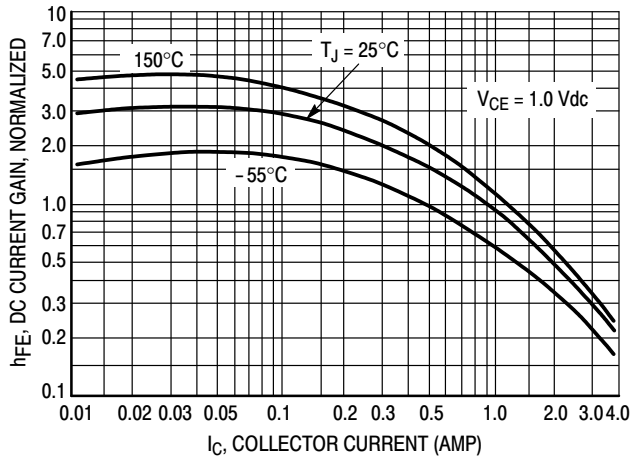


Figure 2. DC Current Gain

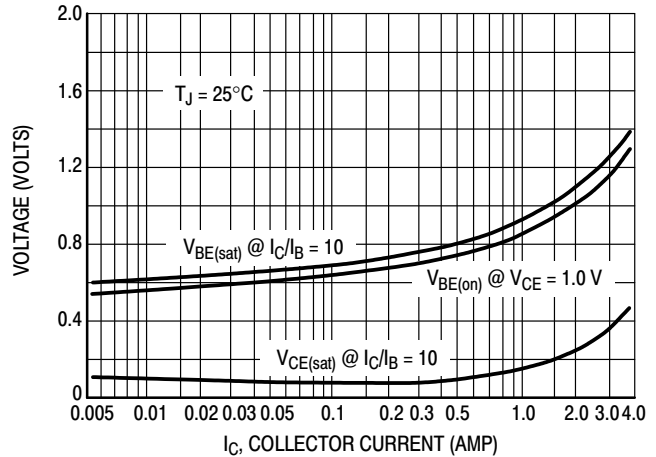


Figure 3. "On" Voltage

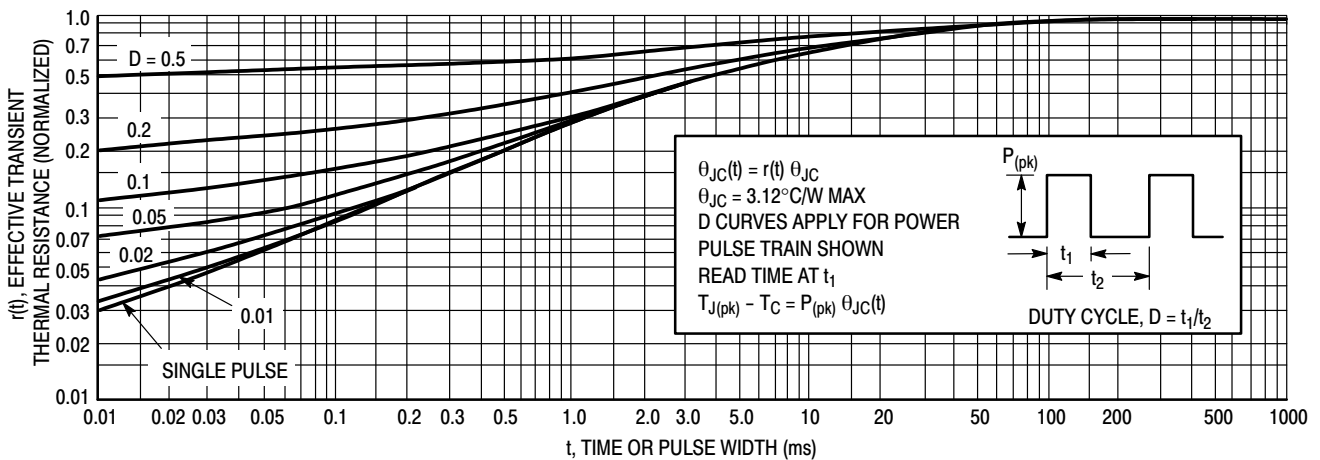
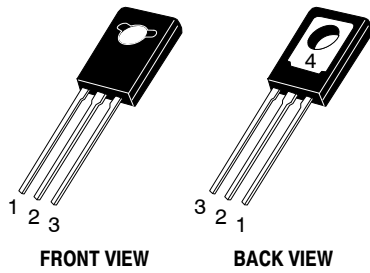


Figure 4. Thermal Response

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

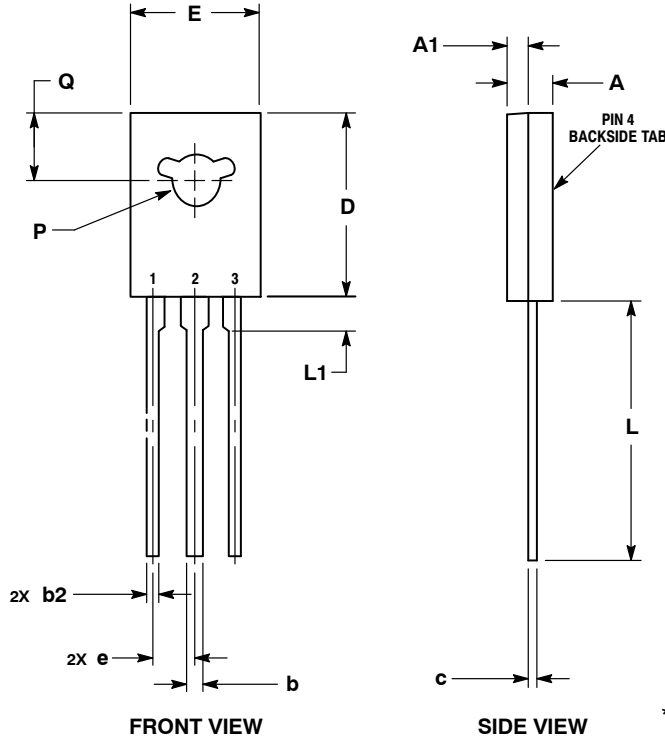
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CASE 77-09  
ISSUE AD

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SCALE 1:1

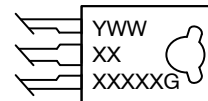


**NOTES:**

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

**GENERIC MARKING DIAGRAM\***



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

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "µ", may or may not be present.

- |   |   |   |   |   |
|---|---|---|---|---|
| <p>STYLE 1:<br/>PIN 1. EMITTER<br/>2., 4. COLLECTOR<br/>3. BASE</p> | <p>STYLE 2:<br/>PIN 1. CATHODE<br/>2., 4. ANODE<br/>3. GATE</p> | <p>STYLE 3:<br/>PIN 1. BASE<br/>2., 4. COLLECTOR<br/>3. EMITTER</p> | <p>STYLE 4:<br/>PIN 1. ANODE 1<br/>2., 4. ANODE 2<br/>3. GATE</p> | <p>STYLE 5:<br/>PIN 1. MT 1<br/>2., 4. MT 2<br/>3. GATE</p>     |
| <p>STYLE 6:<br/>PIN 1. CATHODE<br/>2., 4. GATE<br/>3. ANODE</p>     | <p>STYLE 7:<br/>PIN 1. MT 1<br/>2., 4. GATE<br/>3. MT 2</p>     | <p>STYLE 8:<br/>PIN 1. SOURCE<br/>2., 4. GATE<br/>3. DRAIN</p>      | <p>STYLE 9:<br/>PIN 1. GATE<br/>2., 4. DRAIN<br/>3. SOURCE</p>    | <p>STYLE 10:<br/>PIN 1. SOURCE<br/>2., 4. DRAIN<br/>3. GATE</p> |

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<b>DESCRIPTION:</b>	<b>TO-225</b>	<b>PAGE 1 OF 1</b>

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