MJE371

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

- DC Current Gain − h_{FE} = 40 (Min) @ I_C = 1.0 Adc
- MJE371 is Complementary to NPN MJE521
- Pb−Free Package is Available*

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 − Peak	I_C	4.0 8.0	Adc
Base Current − Continuous	I_B	2.0	Adc
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	40 320	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Case	θ_{JC}	3.12	°C/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Sustaining Voltage (I_C = 100 mAdc, I_B = 0) (Note 1)	$V_{CEO(sus)}$	40	−	Vdc
Collector−Base Cutoff Current (V_{CB} = 40 Vdc, I_E = 0)	I_{CBO}	−	100	μAdc
Emitter−Base Cutoff Current (V_{EB} = 4.0 Vdc, I_C = 0)	I_{EBO}	−	100	μAdc
ON CHARACTERISTICS				
DC Current Gain (Note 1) (I_C = 1.0 Adc, V_{CE} = 1.0 Vdc)	h_{FE}	40	−	−

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 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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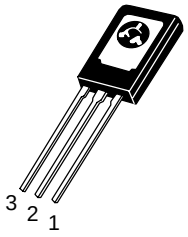
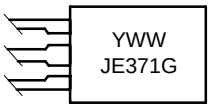
4 AMPERES
POWER TRANSISTOR
PNP SILICON
40 VOLTS, 40 WATTS



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
MJE371	TO−225	500 Units/Box
MJE371G	TO−225 (Pb−Free)	500 Units/Box

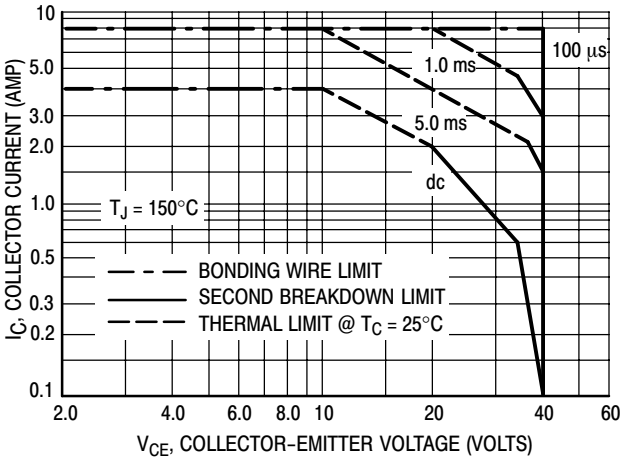


Figure 1. Active−Region Safe Operating Area

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°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°C. At high case temperatures, thermal limitations will reduce the power that can be handled to values less then the limitations imposed by second breakdown.

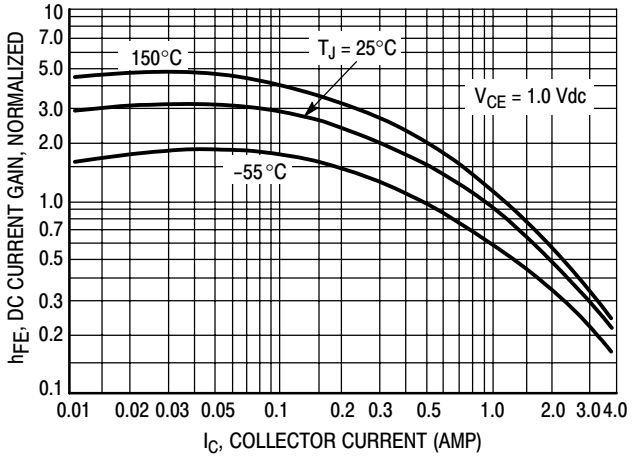


Figure 2. DC Current Gain

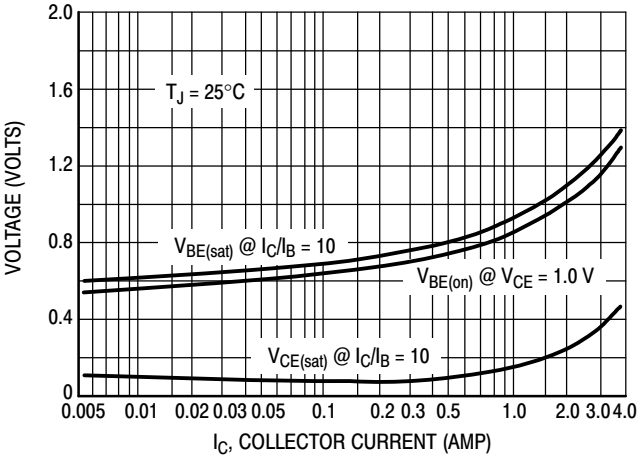


Figure 3. “On” Voltage

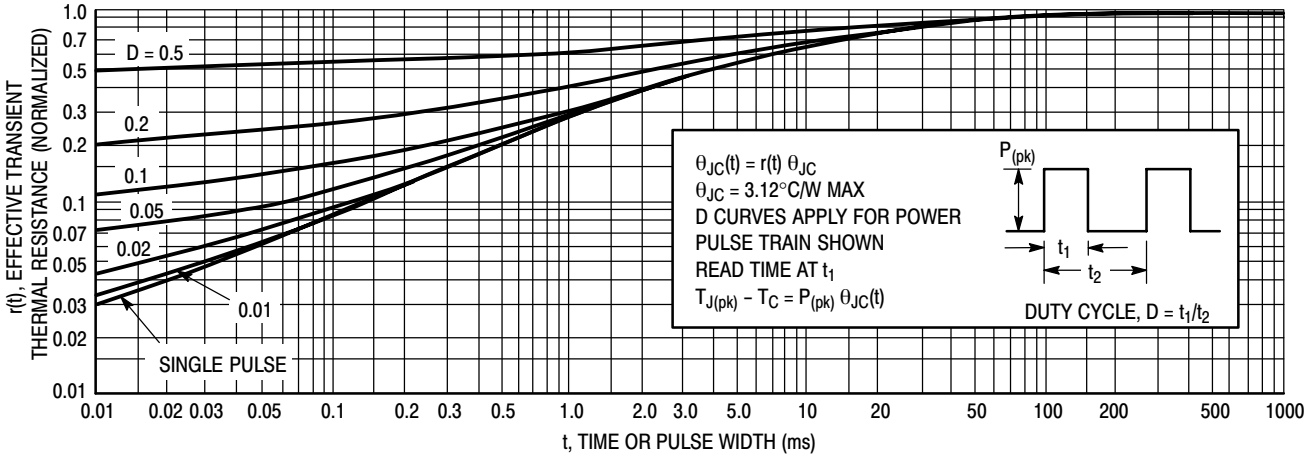
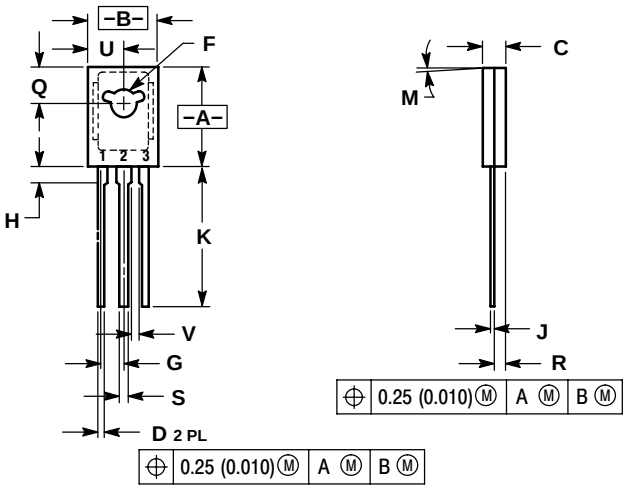


Figure 4. Thermal Response

MJE371

PACKAGE DIMENSIONS

TO−225
CASE 77−09
ISSUE Z



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 077−01 THRU −08 OBSOLETE, NEW STANDARD 077−09.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.425	0.435	10.80	11.04
B	0.295	0.305	7.50	7.74
C	0.095	0.105	2.42	2.66
D	0.020	0.026	0.51	0.66
F	0.115	0.130	2.93	3.30
G	0.094 BSC		2.39 BSC	
H	0.050	0.095	1.27	2.41
J	0.015	0.025	0.39	0.63
K	0.575	0.655	14.61	16.63
M	5° TYP		5° TYP	
Q	0.148	0.158	3.76	4.01
R	0.045	0.065	1.15	1.65
S	0.025	0.035	0.64	0.88
U	0.145	0.155	3.69	3.93
V	0.040	---	1.02	---

STYLE 1:
PIN 1. EMITTER
2. COLLECTOR
3. BASE

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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