

# MJE344G

## Plastic NPN Silicon Medium-Power Transistor

This device is useful for medium voltage applications requiring high  $f_T$  such as converters and extended range amplifiers.

### Features

- These Devices are Pb-Free and are RoHS Compliant\*

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	200	Vdc
Collector-Base Voltage	$V_{CB}$	200	Vdc
Emitter Base Voltage	$V_{EB}$	5.0	Vdc
Collector Current – Continuous	$I_C$	500	mAdc
Base Current	$I_B$	250	mAdc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	20 0.16	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

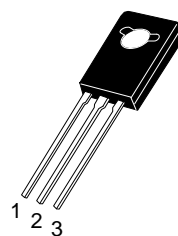
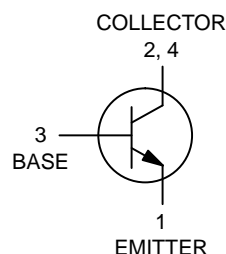
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	$\theta_{JC}$	6.25	$^\circ\text{C/W}$



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## 0.5 AMPERE POWER TRANSISTORS NPN SILICON 150–200 VOLTS, 20 WATTS



TO-225  
CASE 77-09  
STYLE 1

### MARKING DIAGRAM



Y = Year  
WW = Work Week  
JE344 = Device Code  
G = Pb-Free Package

### ORDERING INFORMATION

Device	Package	Shipping
MJE344G	TO-225 (Pb-Free)	500 Units/Box

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

# MJE344G

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector–Emitter Sustaining Voltage ( $I_C = 1.0\text{ mAdc}$ , $I_B = 0$ )	$V_{CEQ(sus)}$	200	–	Vdc
Collector Cutoff Current ( $V_{CE} = 200\text{ Vdc}$ , $I_B = 0$ )	$I_{CEO}$	–	1.0	mAdc
Collector Cutoff Current ( $V_{CB} = 200\text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	–	0.1	mAdc
Emitter Cutoff Current ( $V_{EB} = 5.0\text{ Vdc}$ , $I_C = 0$ )	$I_{EBO}$	–	0.1	mAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 50\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ )	$h_{FE}$	30	300	–
Collector–Emitter Saturation Voltage ( $I_C = 50\text{ mAdc}$ , $I_B = 5.0\text{ mAdc}$ )	$V_{CE(sat)}$	–	1.0	Vdc
Base–Emitter On Voltage ( $I_C = 50\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ )	$V_{BE(on)}$	–	1.0	Vdc
<b>DYNAMIC CHARACTERISTICS</b>				
Current–Gain – Bandwidth Product ( $I_C = 50\text{ mAdc}$ , $V_{CE} = 25\text{ Vdc}$ , $f = 10\text{ MHz}$ )	$f_T$	15	–	MHz
Output Capacitance ( $V_{CB} = 20\text{ Vdc}$ , $I_E = 0$ , $f = 100\text{ kHz}$ )	$C_{ob}$	–	15	pF
Small–Signal Current Gain ( $I_C = 50\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ , $f = 1.0\text{ kHz}$ )	$h_{fe}$	25	–	–

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.

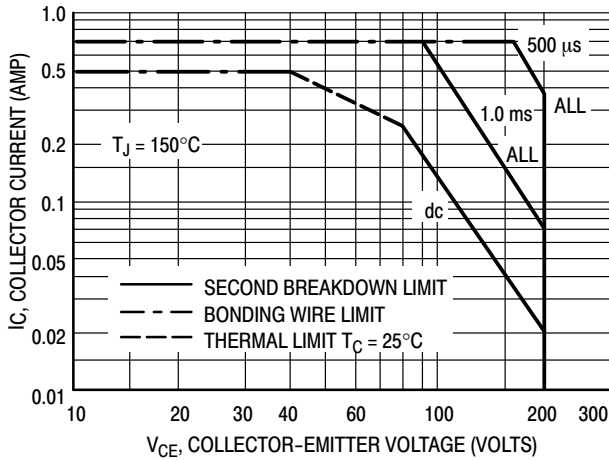


Figure 1. Active Region Safe Operating Area

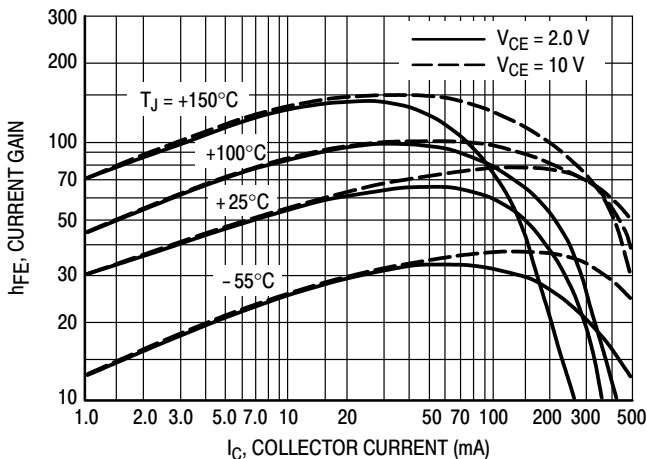


Figure 2. DC Current Gain

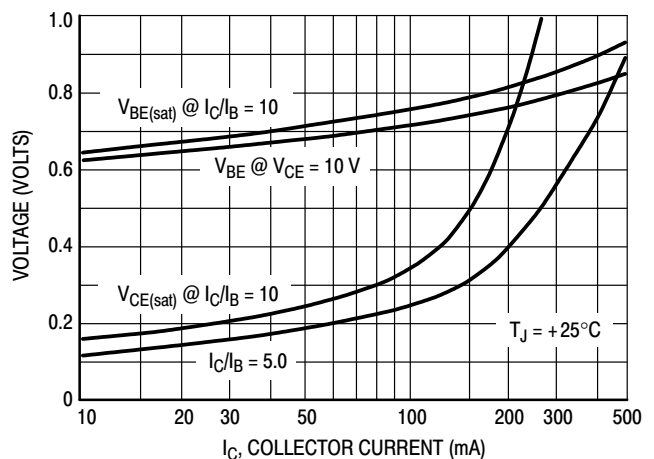
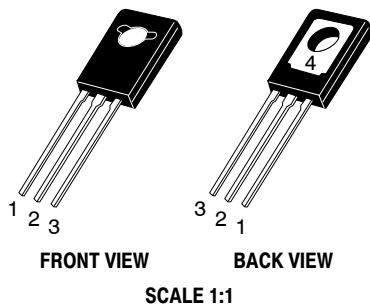


Figure 3. "On" Voltages

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

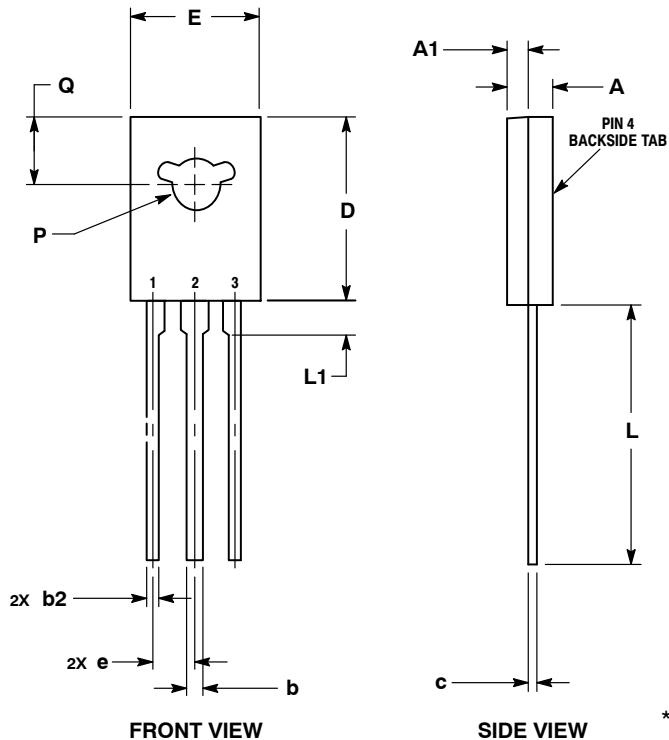
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ON



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ISSUE AD

DATE 25 MAR 2015

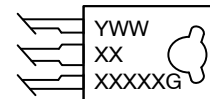


## NOTES:

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

MILLIMETERS		
DIM	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 "▪", may or may not be present.

STYLE 1: PIN 1. EMITTER 2., 4. COLLECTOR 3. BASE	STYLE 2: PIN 1. CATHODE 2., 4. ANODE 3. GATE	STYLE 3: PIN 1. BASE 2., 4. COLLECTOR 3. EMITTER	STYLE 4: PIN 1. ANODE 1 2., 4. ANODE 2 3. GATE	STYLE 5: PIN 1. MT 1 2., 4. MT 2 3. GATE
STYLE 6: PIN 1. CATHODE 2., 4. GATE 3. ANODE	STYLE 7: PIN 1. MT 1 2., 4. GATE 3. MT 2	STYLE 8: PIN 1. SOURCE 2., 4. GATE 3. DRAIN	STYLE 9: PIN 1. GATE 2., 4. DRAIN 3. SOURCE	STYLE 10: PIN 1. SOURCE 2., 4. DRAIN 3. GATE

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