

# MJE340G

## Plastic Medium-Power NPN Silicon Transistor

This device is useful for high-voltage general purpose applications.

### Features

- Suitable for Transformerless, Line-Operated Equipment
- High Power Dissipation Rating for High Reliability
- These Devices are Pb-Free and are RoHS Compliant\*
- Complementary to MJE350

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	300	Vdc
Emitter-Base Voltage	$V_{EB}$	3.0	Vdc
Collector Current – Continuous	$I_C$	500	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	$^\circ\text{C/W}$

### 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 ( $I_C = 1.0$ mAdc, $I_B = 0$ )	$V_{CEO(sus)}$	300	–	Vdc
Collector Cutoff Current ( $V_{CB} = 300$ Vdc, $I_E = 0$ )	$I_{CBO}$	–	100	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 3.0$ Vdc, $I_C = 0$ )	$I_{EBO}$	–	100	$\mu\text{Adc}$

#### ON CHARACTERISTICS

DC Current Gain ( $I_C = 50$ mAdc, $V_{CE} = 10$ Vdc)	$h_{FE}$	30	240	–
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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.

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

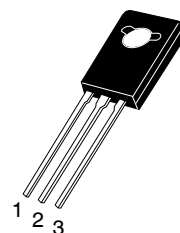
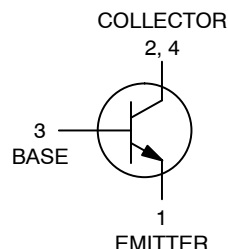


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**0.5 AMPERE  
POWER TRANSISTOR  
NPN SILICON  
300 VOLTS, 20 WATTS**

### SCHEMATIC



TO-225  
CASE 77-09  
STYLE 1

### MARKING DIAGRAM



Y = Year  
WW = Work Week  
JE340 = Device Code  
G = Pb-Free Package

### ORDERING INFORMATION

Device	Package	Shipping
MJE340G	TO-225 (Pb-Free)	500 Units/Box

## MJE340G

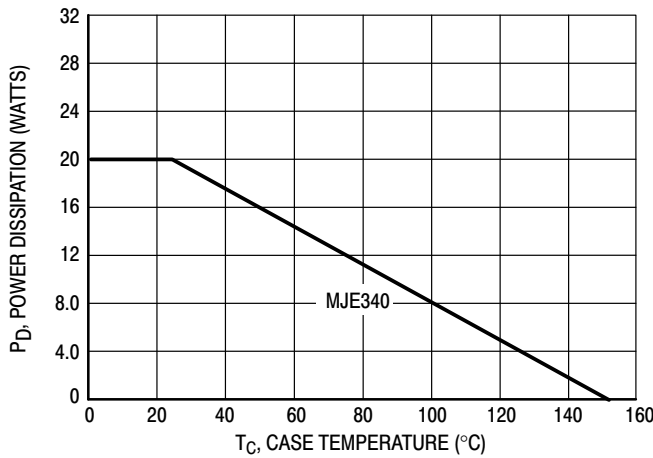


Figure 1. Power Temperature Derating

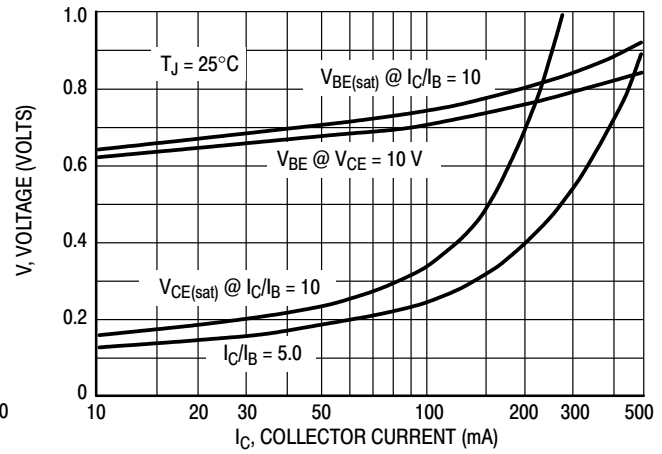


Figure 2. "On" Voltages

### ACTIVE-REGION SAFE OPERATING AREA

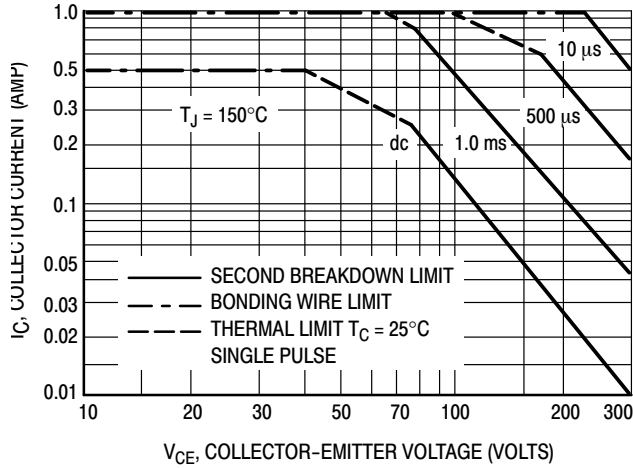


Figure 3. MJE340

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 3 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.

# MJE340G

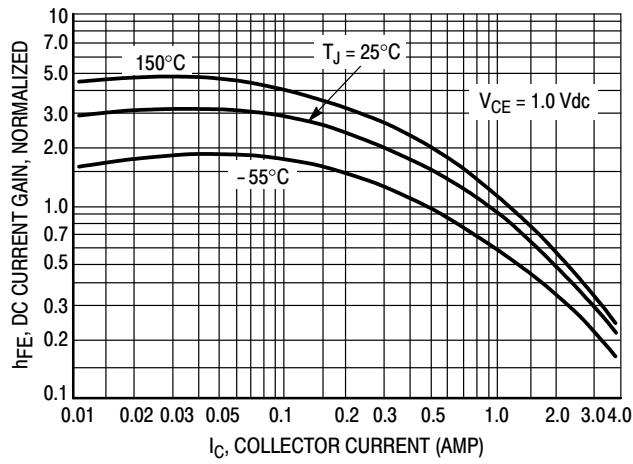


Figure 4. DC Current Gain

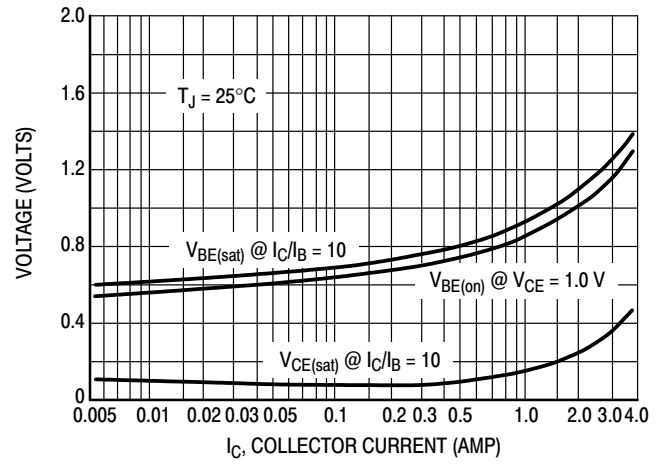


Figure 5. "On" Voltage

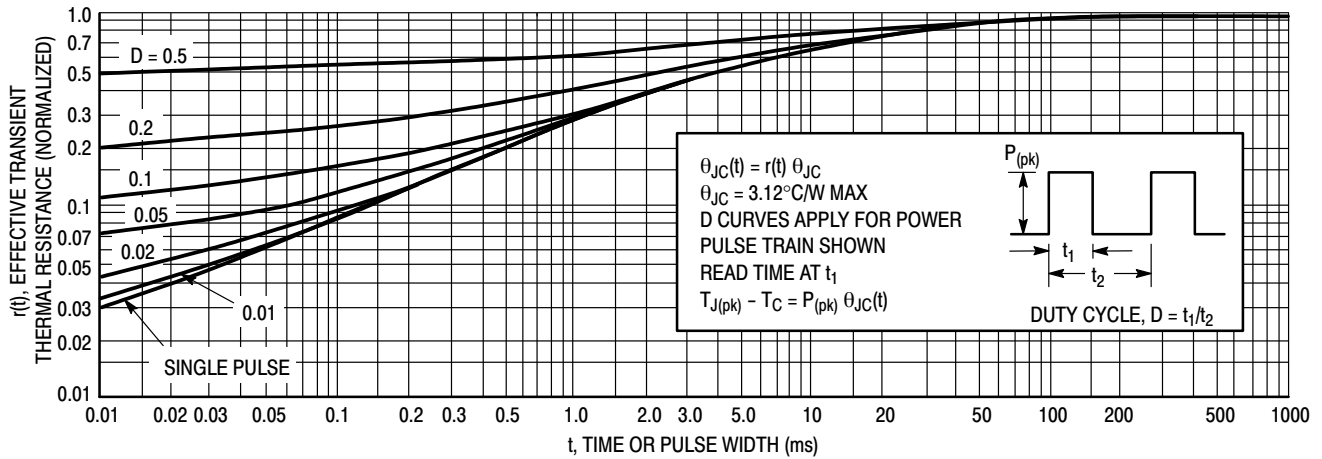


Figure 6. Thermal Response

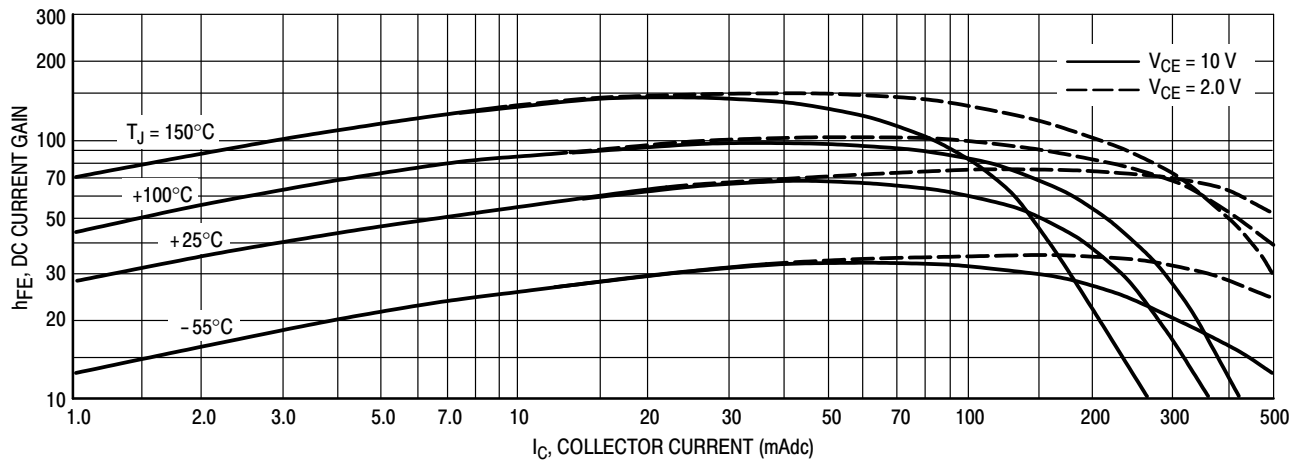
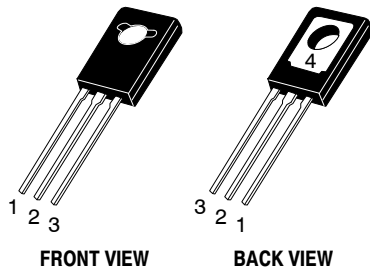


Figure 7. DC Current Gain

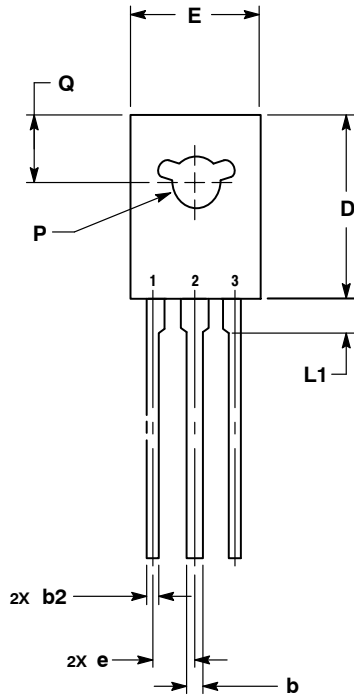
# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

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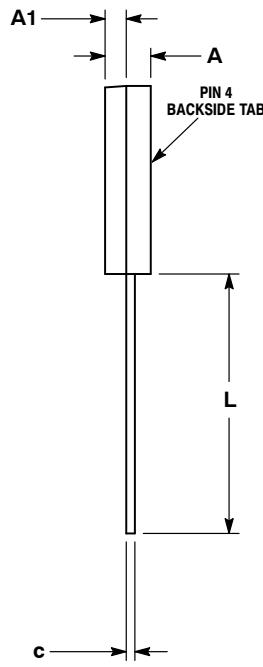
ON



SCALE 1:1



FRONT VIEW



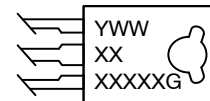
SIDE VIEW

## 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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DESCRIPTION: TO-225

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