

# MJE340

## Plastic Medium-Power NPN Silicon Transistor

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

### Features

- Suitable for Transformerless, Line-Operated Equipment
- Thermopad Construction Provides High Power Dissipation Rating for High Reliability
- Pb-Free Package is Available\*

### 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	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

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

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 ( $T_C = 25^\circ\text{C}$ 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

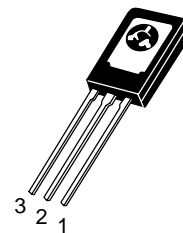
DC Current Gain ( $I_C = 50$ mAdc, $V_{CE} = 10$ Vdc)	$h_{FE}$	30	240	–
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ON Semiconductor®

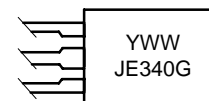
<http://onsemi.com>

0.5 AMPERE  
POWER TRANSISTOR  
NPN SILICON  
300 VOLTS, 20 WATTS



TO-225  
CASE 77  
STYLE 1

### MARKING DIAGRAM



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

### ORDERING INFORMATION

Device	Package	Shipping
MJE340	TO-225	500 Units/Box
MJE340G	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.

# MJE340

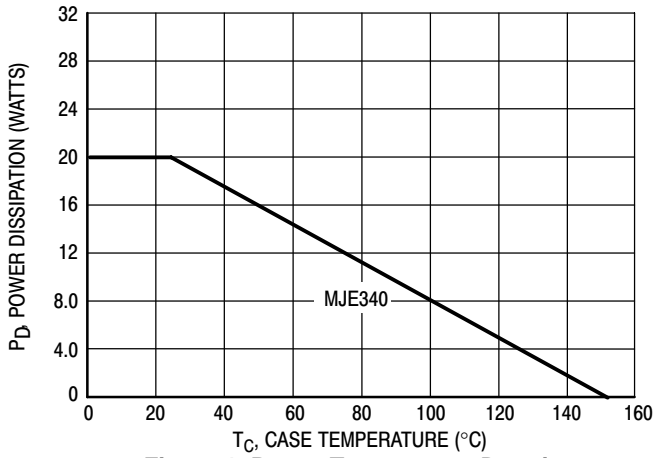


Figure 1. Power Temperature Derating

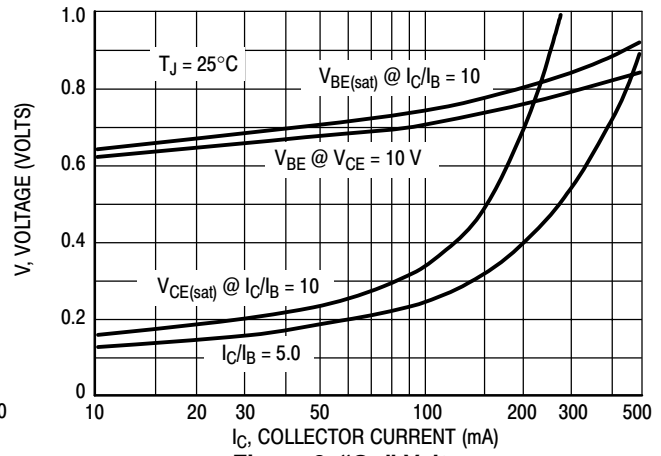


Figure 2. "On" Voltages

## ACTIVE-REGION SAFE OPERATING AREA

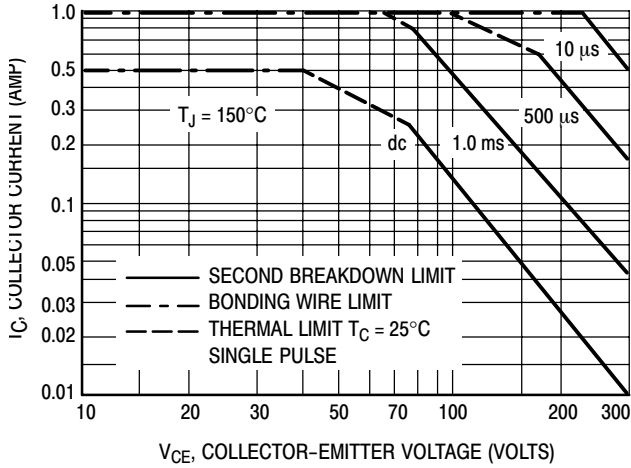


Figure 3. MJE340

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.

# MJE340

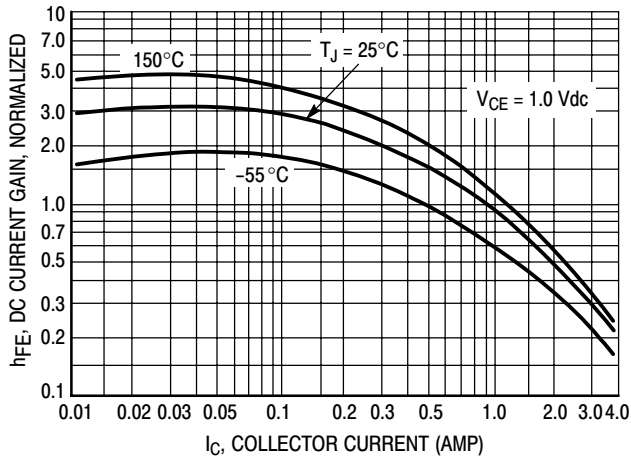


Figure 4. DC Current Gain

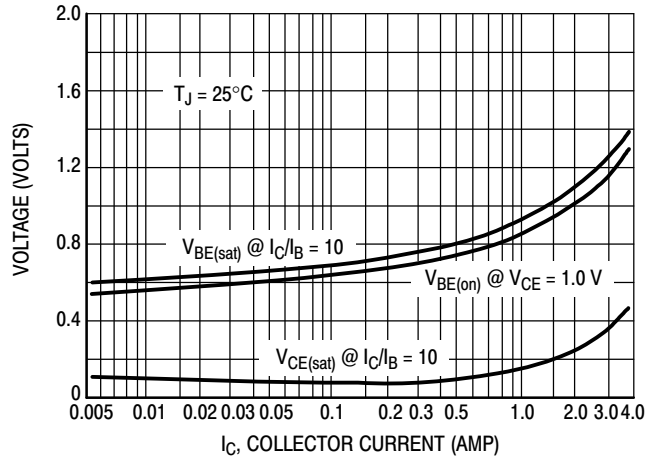


Figure 5. "On" Voltage

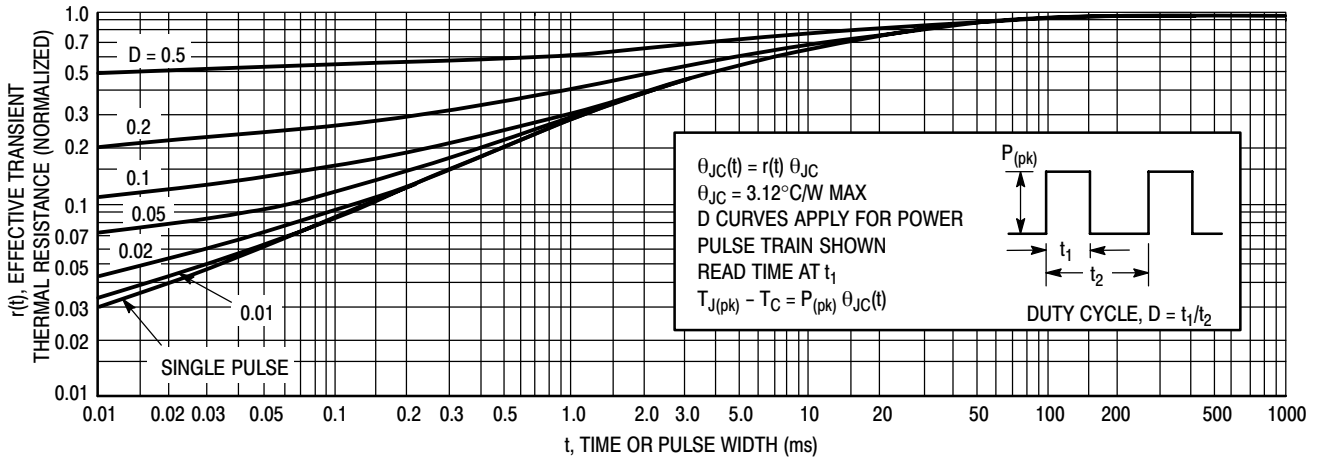


Figure 6. Thermal Response

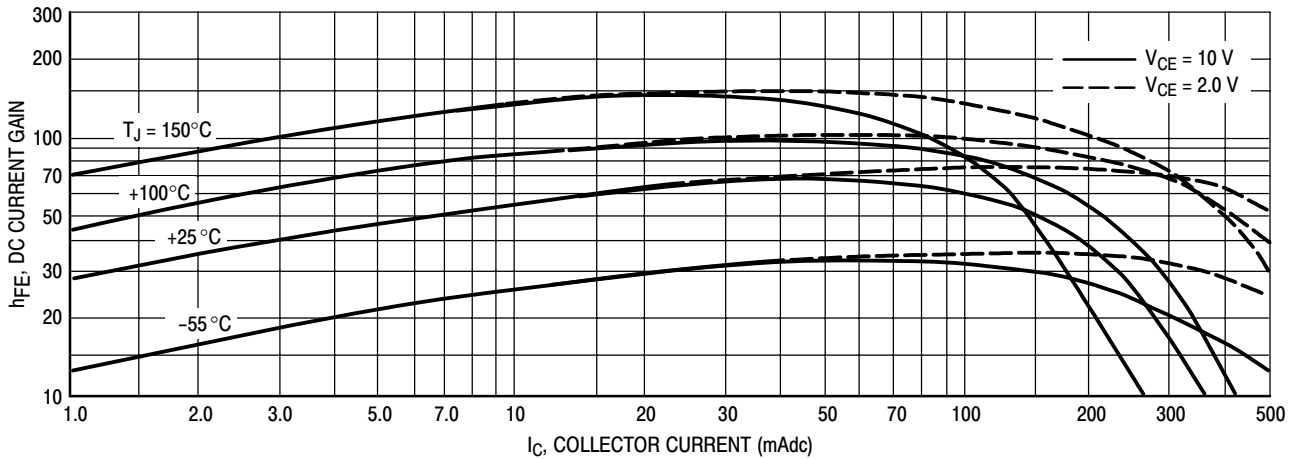
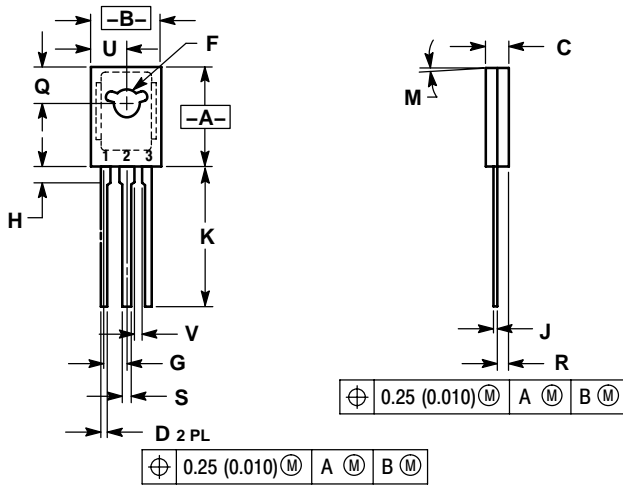


Figure 7. DC Current Gain

# MJE340

## 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.

DIM	INCHES		MILLIMETERS	
	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:

1. EMITTER
2. COLLECTOR
3. BASE

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