

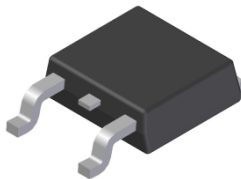
## Features

- $BV_{CEO} > 300V$
- $I_C = 0.5A$  High Continuous Collector Current
- $I_{CM} = 0.75A$  Peak Pulse Current
- Ideal for Power Switching or Amplification Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

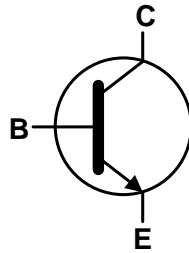
## Mechanical Data

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, "Green" Molding Compound  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per  
MIL-STD-202, Method 208 Ⓔ
- Weight: 0.34 grams (Approximate)

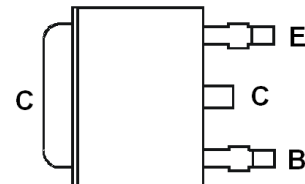
TO252 (DPAK)



Top View



Device Schematic



Pin Out Configuration  
Top View

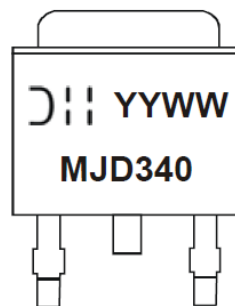
## Ordering Information (Note 4)


Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
MJD340-13	AEC-Q101	MJD340	13	16	2,500

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information

TO252 (DPAK)



MJD340 = Product Type Marking Code  
 = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 18 = 2018)  
 WW = Week Code (01 to 53)

### Absolute Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	300	V
Collector-Emitter Voltage	V <sub>CEO</sub>	300	V
Emitter-Base Voltage	V <sub>EBO</sub>	7	V
Continuous Collector Current	I <sub>C</sub>	0.5	A
Peak Pulse Collector Current	I <sub>CM</sub>	0.75	A

### Thermal Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation @T <sub>C</sub> = +25°C	P <sub>D</sub>	15	W
Power Dissipation @T <sub>A</sub> = +25°C (Note 5)		1.56	
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	8.33	°C/W
Thermal Resistance, Junction to Ambient Air	R <sub>θJA</sub>	80	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

- Notes:
5. For a device mounted on FR-4 PCB with minimum recommended pad layout.
  6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

**Typical Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

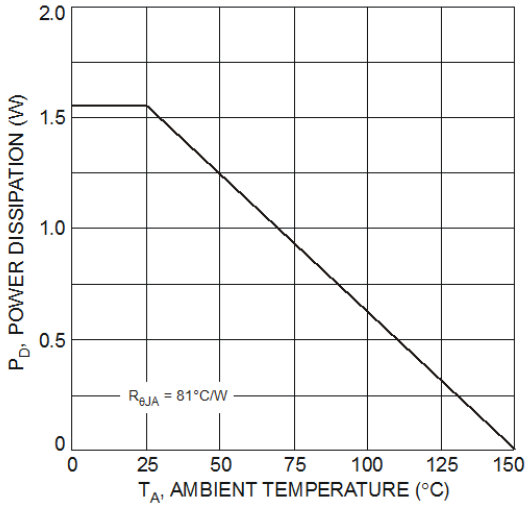


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 5)

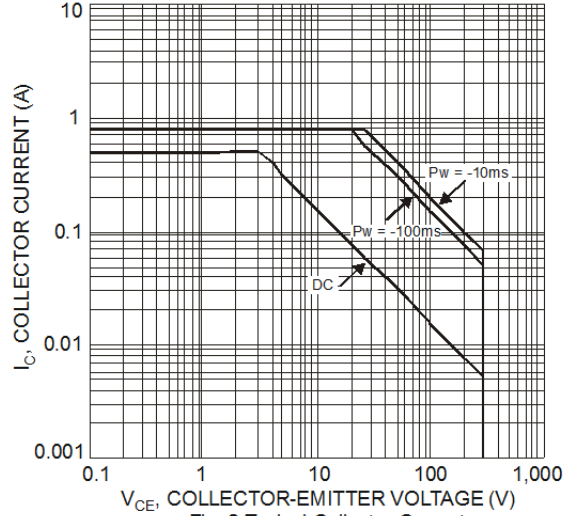


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (Note 5)

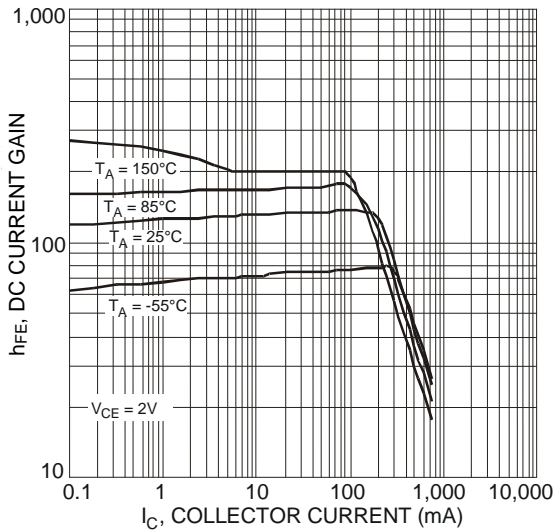


Fig. 3 Typical DC Current Gain vs. Collector Current

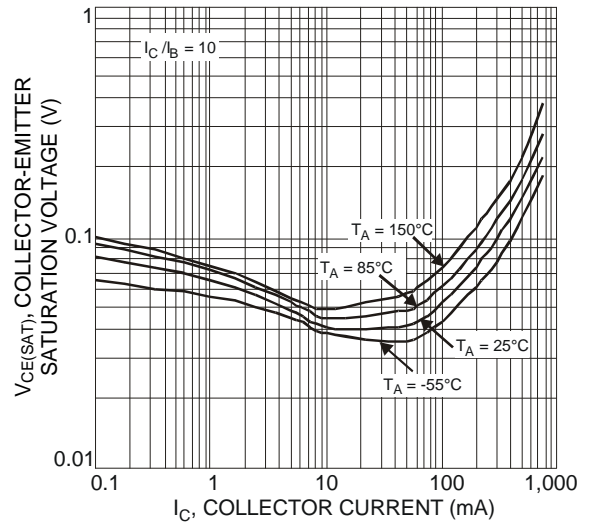


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

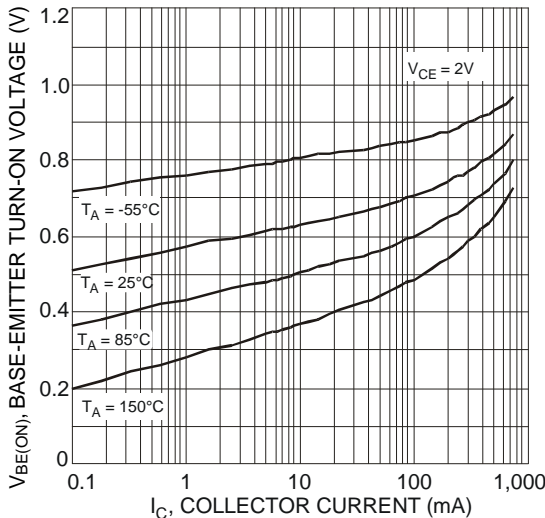


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

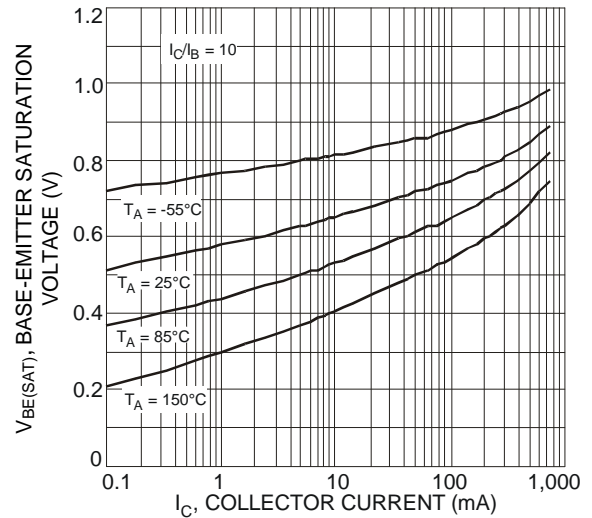


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

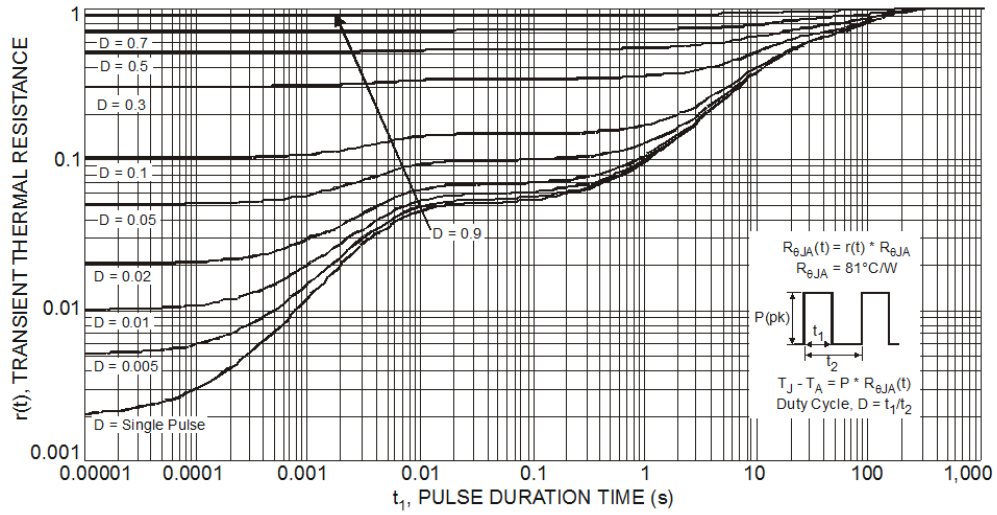


Fig. 7 Transient Thermal Response (Note 5)

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

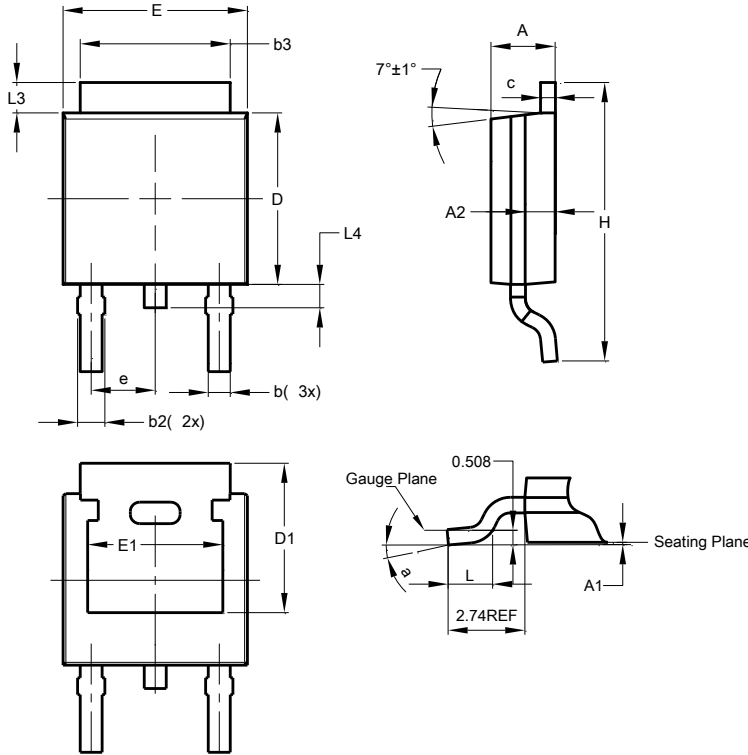
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 7)	$BV_{CEO}$	300	—	—	V	$I_C = 1\text{mA}$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	7	—	—	V	$I_C = 100\mu\text{A}$
Collector Cut-off Current	$I_{CBO}$	—	—	100	nA	$V_{CB} = 300\text{V}$
Emitter Cut-off Current	$I_{EBO}$	—	—	100	nA	$V_{EB} = 5.6\text{V}$
Collector-Emitter Saturation Voltage (Note 7)	$V_{CE(SAT)}$	—	—	0.5	V	$I_C = 100\text{mA}$ , $I_B = 10\text{mA}$
Base-Emitter Saturation Voltage (Note 7)	$V_{BE(SAT)}$	—	—	1.0	V	$I_C = 100\text{mA}$ , $I_B = 10\text{mA}$
Base-Emitter Turn-On Voltage (Note 7)	$V_{BE(ON)}$	—	—	1.0	V	$I_C = 100\text{mA}$ , $V_{CE} = 5\text{V}$
DC Current Gain (Note 7)	$h_{FE}$	30	—	240	—	$V_{CE} = 10\text{V}$ , $I_C = 50\text{mA}$
Current Gain-Bandwidth Product	$f_T$	10	—	—	MHz	$I_C = 50\text{mA}$ , $V_{CE} = 10\text{V}$ , $f = 10\text{MHz}$

Notes: 7. Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO252 (DPAK)

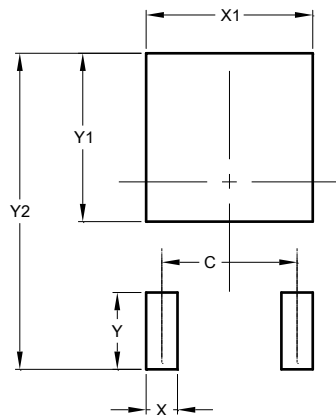


TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
All Dimensions in mm			

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO252 (DPAK)



Dimensions	Value (in mm)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

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