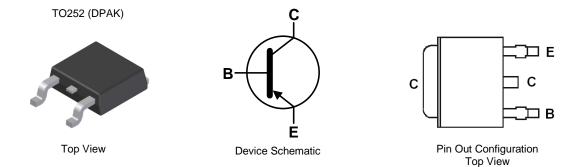


### **Features**

- BV<sub>CEO</sub> > -300V
- I<sub>C</sub> = -0.5A Continuous Collector Current
- I<sub>CM</sub> = -0.75A Peak Pulse Current
- Ideal for Power Switching or Amplification Applications
- Complementary NPN Type: MJD340
- 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 <sup>(63)</sup>
- Weight: 0.34 grams (Approximate)



## Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
MJD350-13	AEC-Q101	MJD350	13	16	2,500

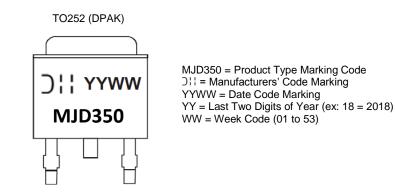
Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.

 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**





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

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

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

Characteristic	Symbol	Value	Unit	
Power Dissipation $@T_C = +25^{\circ}C$	P	15	w	
Power Dissipation $@T_A = +25^{\circ}C$ (Note 5)	PD PD	1.56	vv	
Thermal Resistance, Junction to Case	R <sub>0JC</sub>	8.33	°C/W	
Thermal Resistance, Junction to Ambient Air	R <sub>0JA</sub>	81	0.700	
Operating and Storage Temperature Range	TJ, TSTG	-55 to +150	°C	

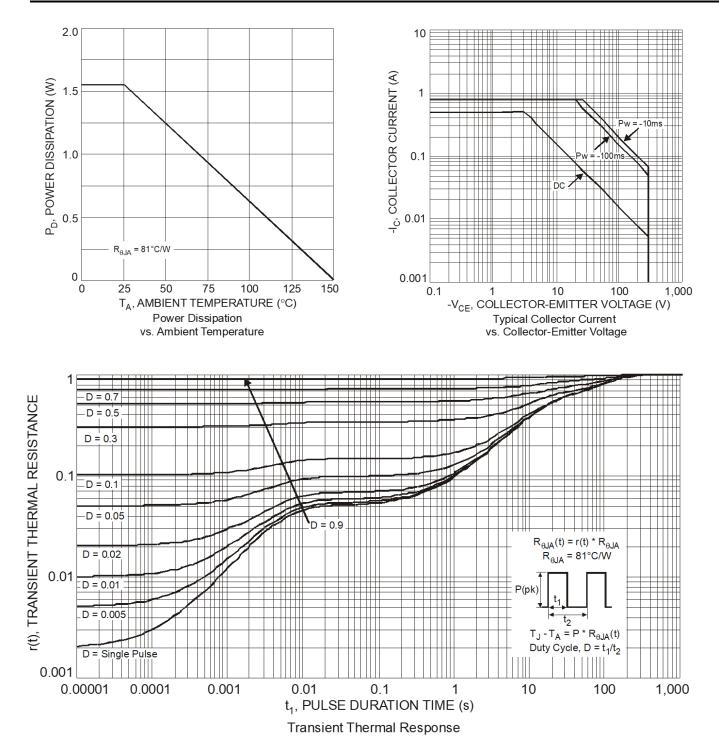
# ESD Ratings (Note 6)

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	С

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



# **Thermal Characteristics and Derating Information**





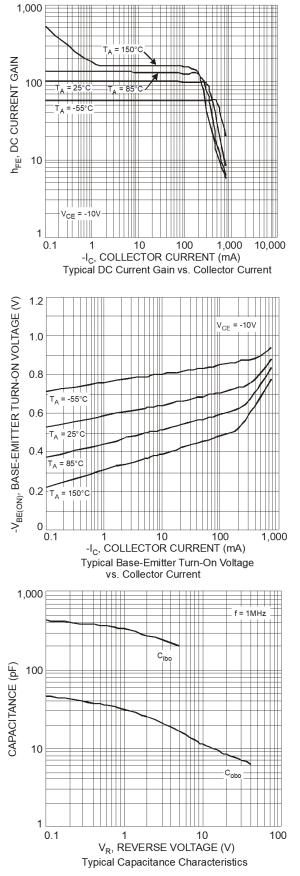
# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

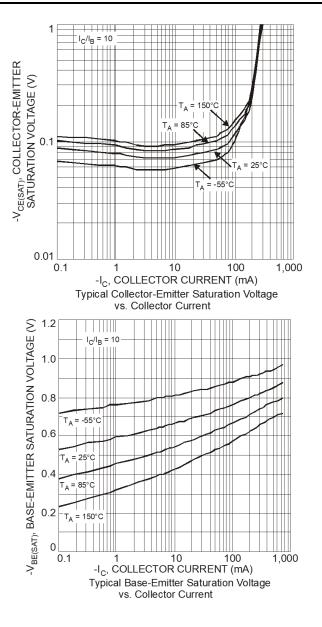
Characteristic		Min	Тур	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 7)	BV <sub>CEO</sub>	-300			V	$I_{\rm C} = -1 {\rm mA}, \ I_{\rm B} = 0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-7		_	V	$I_{\rm C} = -100 \mu A, I_{\rm E} = 0$
Collector Cut-off Current	I <sub>CBO</sub>		_	-100	nA	$V_{CB} = -300V, I_E = 0$
Emitter Cut-off Current	I <sub>EBO</sub>	_		-100	nA	$V_{EB} = -5.6V, I_{C} = 0$
Collector-Emitter Saturation Voltage (Note 7)	V <sub>CE(SAT)</sub>	_	_	-0.5	V	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA
Base-Emitter Saturation Voltage (Note 7)	V <sub>BE(SAT)</sub>	_		-1.0	V	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA
Base-Emitter Turn-On Voltage (Note 7)	V <sub>BE(ON)</sub>	_	_	-1.0	V	I <sub>C</sub> = -100mA, V <sub>CE</sub> = -5V
DC Current Gain (Note 7)	h <sub>FE</sub>	30		240		$V_{CE} = -10V, I_{C} = -50mA$
Current Gain-Bandwidth Product	f⊤	10		_	MHz	I <sub>C</sub> = -50mA, V <sub>CE</sub> = -10V, f = 10MHz

Note: 7. Measured under pulsed conditions. Pulse width  $\leq$  300µs. Duty cycle  $\leq$ 2%.



## Typical Electrical Characteristics (@TA = +25°C, unless otherwise specified.)



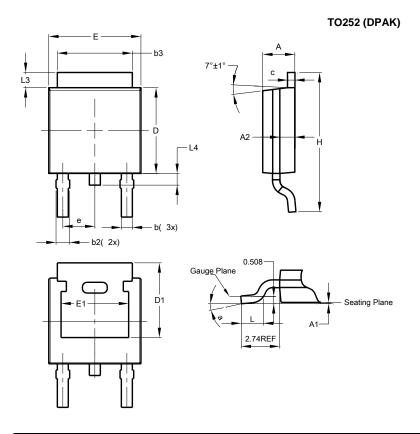




**MJD350** 

# **Package Outline Dimensions**

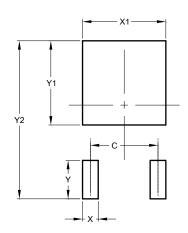
Please see http://www.diodes.com/package-outlines.html for the latest version.



TO252 (DPAK)					
Dim	Min	Max	Тур		
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		
С	0.45	0.58	0.531		
D	6.00	6.20	6.10		
D1	5.21	-	-		
е	-	-	2.286		
Е	6.45	6.70	6.58		
E1	4.32	-	-		
Н	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		
а	0°	10°	-		
All	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)
С	4.572
Х	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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