300V PNP HIGH VOLTAGE TRANSISTOR IN TO252 (DPAK)

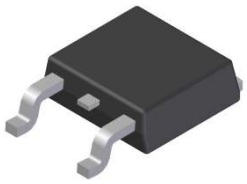
Features

- BV_{CEO} > -300V
- I_C = -0.5A Continuous Collector Current
- I_{CM} = -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**

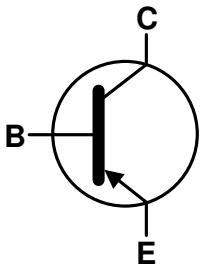
Mechanical Data

- 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 e3
- Weight: 0.34 grams (Approximate)

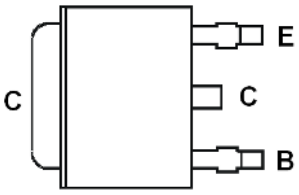
TO252 (DPAK)



Top View



Device Schematic



Pin Out Configuration
Top View

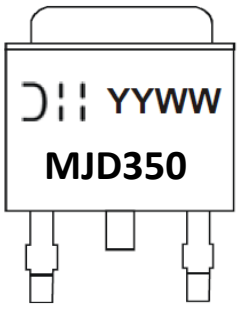
Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
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.
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)



MJD350 = 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_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-300	V
Collector-Emitter Voltage	V_{CEO}	-300	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	I_C	-0.5	A
Peak Pulse Collector Current	I_{CM}	-0.75	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

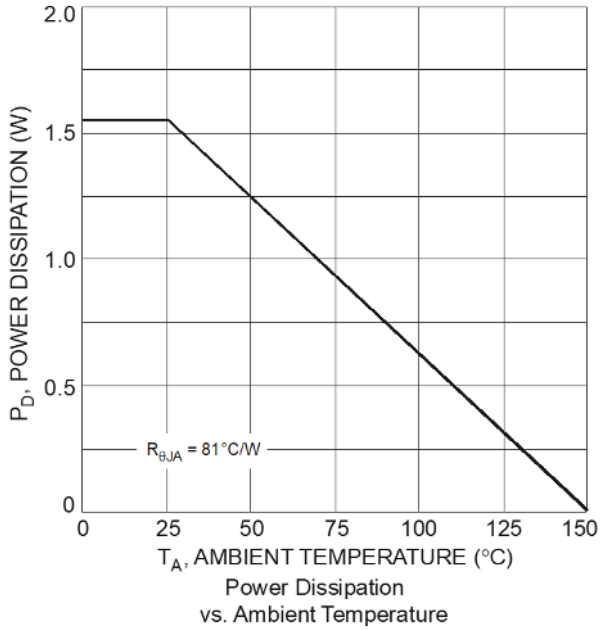
Characteristic	Symbol	Value	Unit
Power Dissipation @T_C = +25°C	P_D	15	W
Power Dissipation @T_A = +25°C (Note 5)		1.56	
Thermal Resistance, Junction to Case	$R_{\theta JC}$	8.33	°C/W
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	81	
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 6)

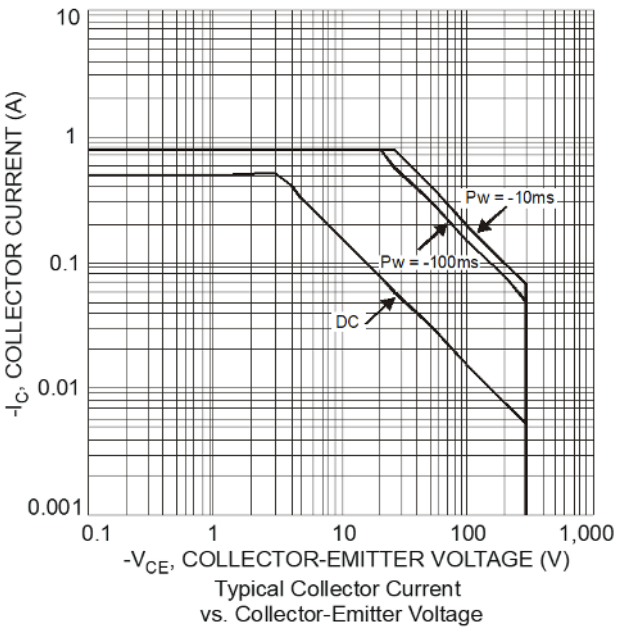
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

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.

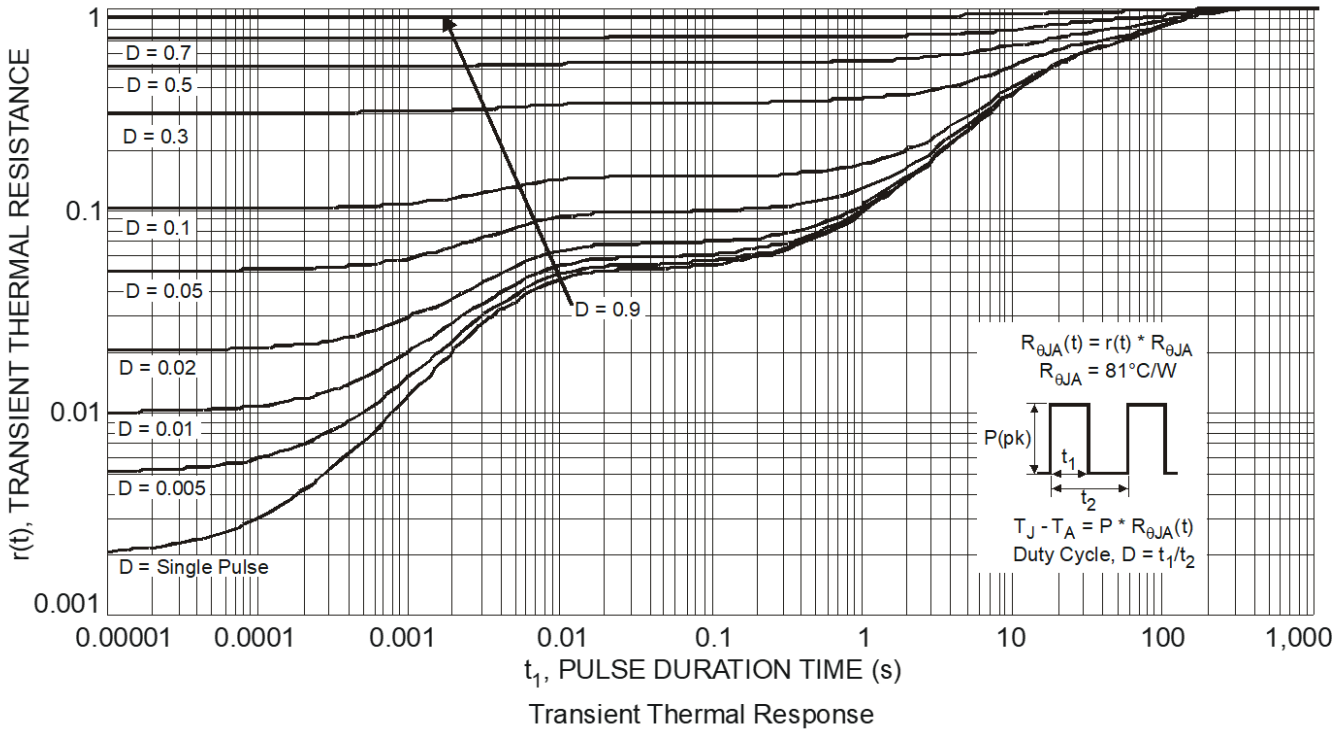
Thermal Characteristics and Derating Information



Power Dissipation
vs. Ambient Temperature



Typical Collector Current
vs. Collector-Emitter Voltage



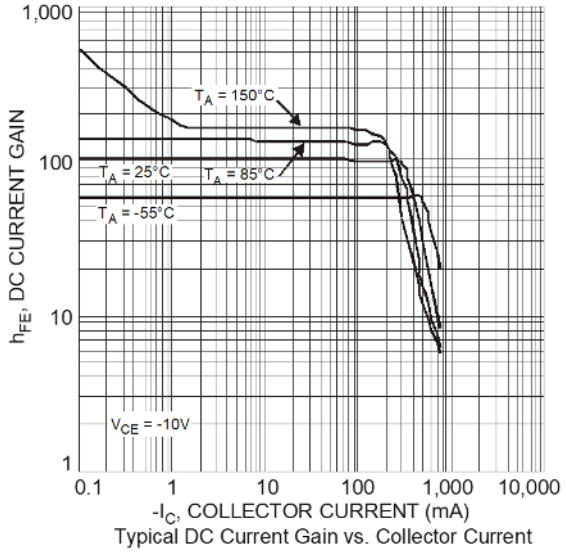
Transient Thermal Response

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

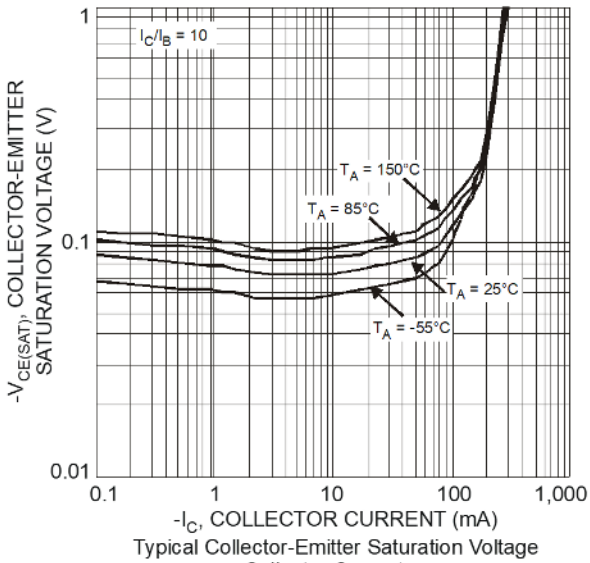
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	-300	—	—	V	I_C = -1mA, I_B = 0
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	—	—	V	I_C = -100μA, I_E = 0
Collector Cut-off Current	I_{CBO}	—	—	-100	nA	V_{CB} = -300V, I_E = 0
Emitter Cut-off Current	I_{EBO}	—	—	-100	nA	V_{EB} = -5.6V, I_C = 0
Collector-Emitter Saturation Voltage (Note 7)	$V_{CE(SAT)}$	—	—	-0.5	V	I_C = -100mA, I_B = -10mA
Base-Emitter Saturation Voltage (Note 7)	$V_{BE(SAT)}$	—	—	-1.0	V	I_C = -100mA, I_B = -10mA
Base-Emitter Turn-On Voltage (Note 7)	$V_{BE(ON)}$	—	—	-1.0	V	I_C = -100mA, V_{CE} = -5V
DC Current Gain (Note 7)	h_{FE}	30	—	240	—	V_{CE} = -10V, I_C = -50mA
Current Gain-Bandwidth Product	f_T	10	—	—	MHz	I_C = -50mA, V_{CE} = -10V, f = 10MHz

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

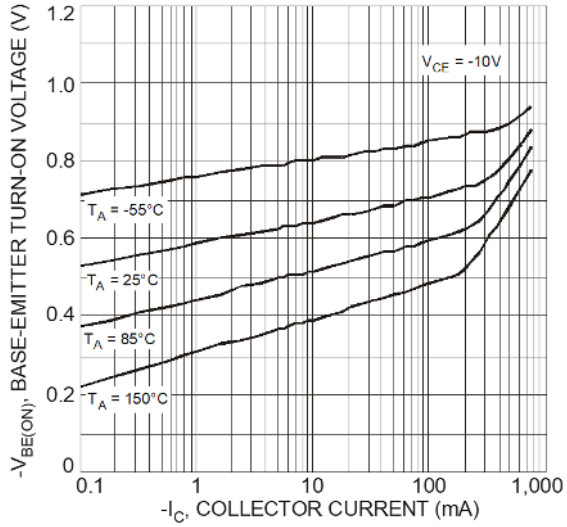
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



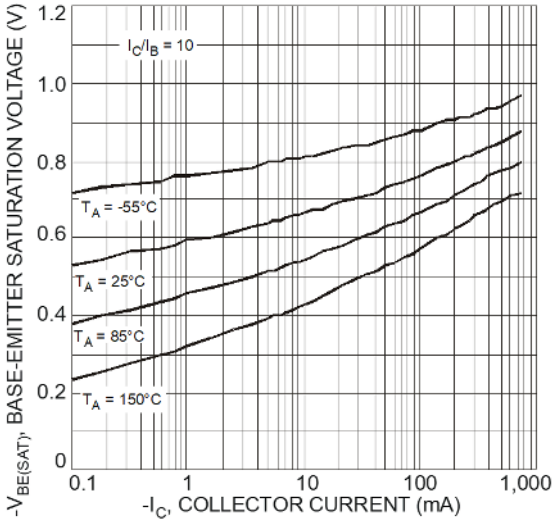
Typical DC Current Gain vs. Collector Current



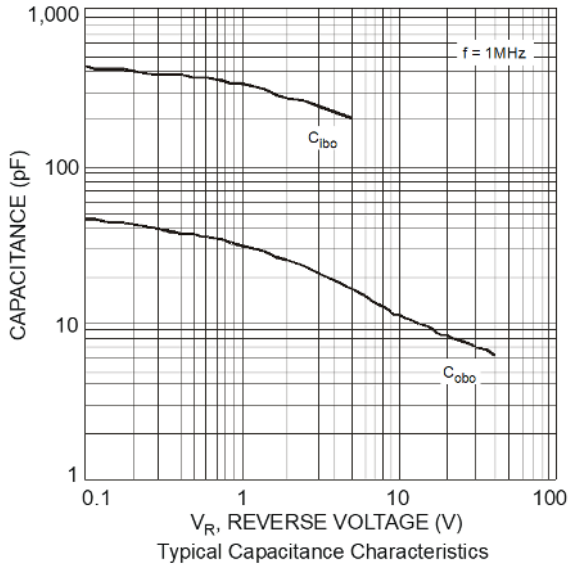
Typical Collector-Emitter Saturation Voltage vs. Collector Current



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



Typical Base-Emitter Saturation Voltage vs. Collector Current

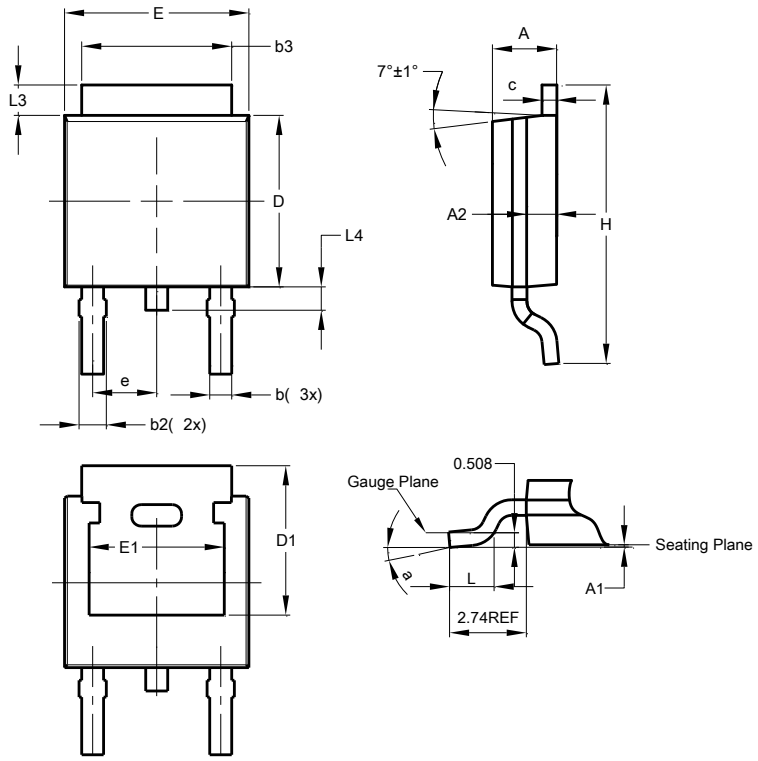


Typical Capacitance Characteristics

Package Outline Dimensions

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

TO252 (DPAK)

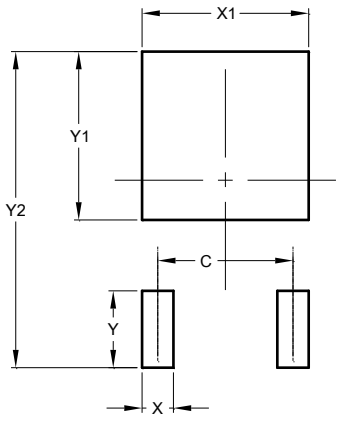


TO252 (DPAK)			
Dim	**Min**	**Max**	**Typ**
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02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