


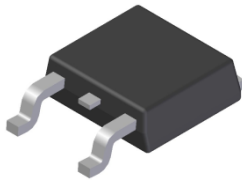
Features

- $BV_{CEO} > -300V$
- $I_C = -0.5A$ 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**

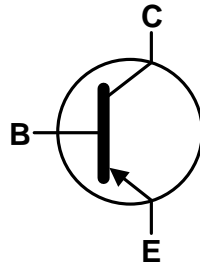
Mechanical Data

- 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 
- Weight: 0.34 grams (Approximate)

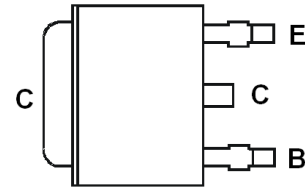
TO252 (DPAK)



Top View



Device Schematic



Pin Out Configuration
Top View

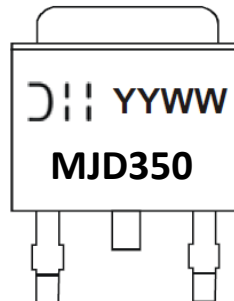
Ordering Information (Note 4)

| 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
 DII = 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 _{CB0} | -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.)

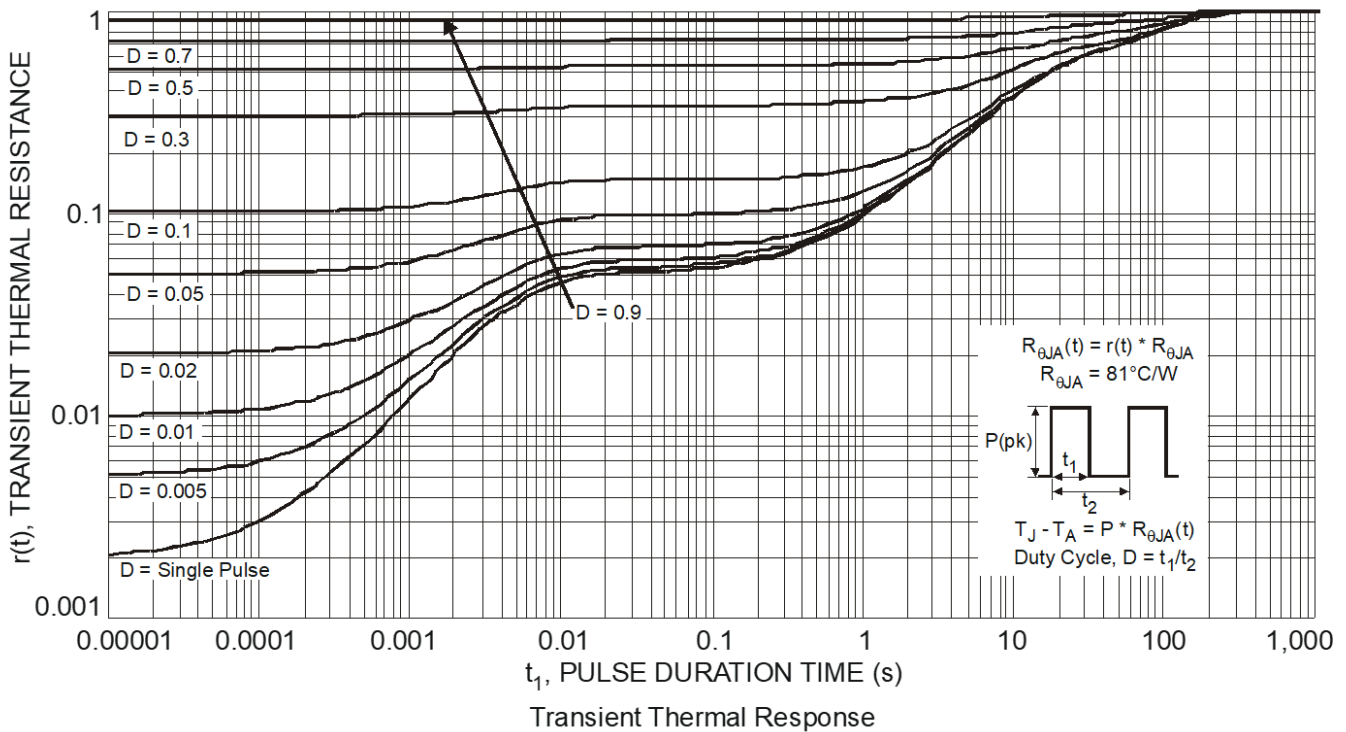
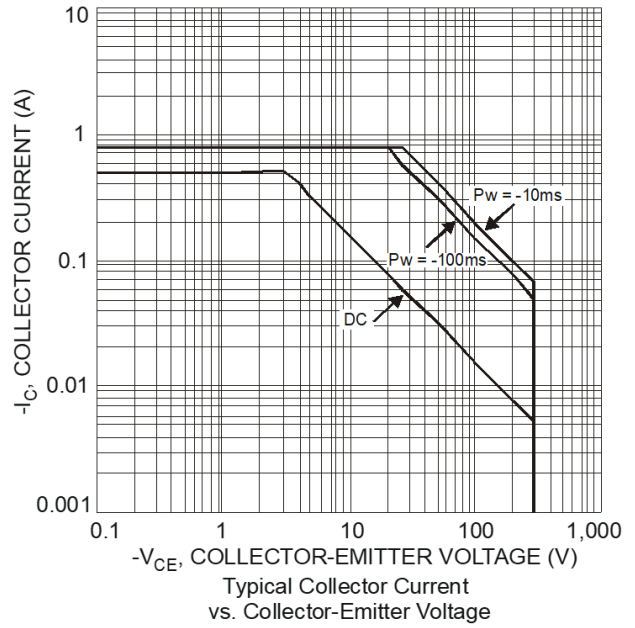
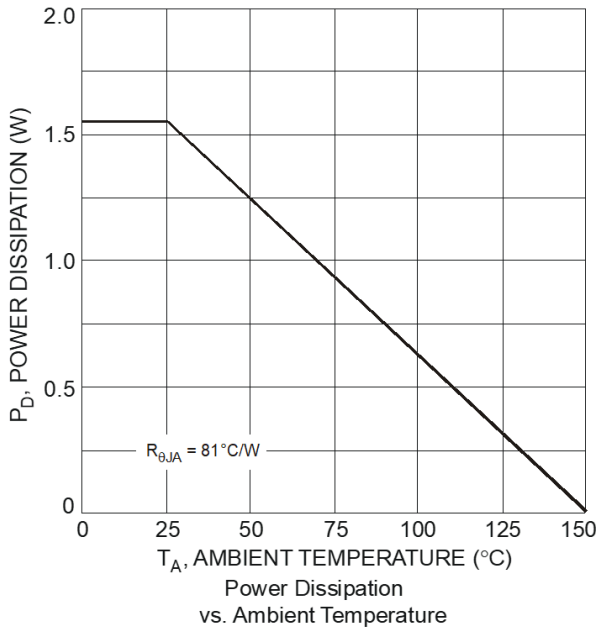
| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation @T _C = +25°C | P _D | 15 | W |
| Power Dissipation @T _A = +25°C (Note 5) | | 1.56 | |
| Thermal Resistance, Junction to Case | R _{θJC} | 8.33 | °C/W |
| Thermal Resistance, Junction to Ambient Air | R _{θJA} | 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

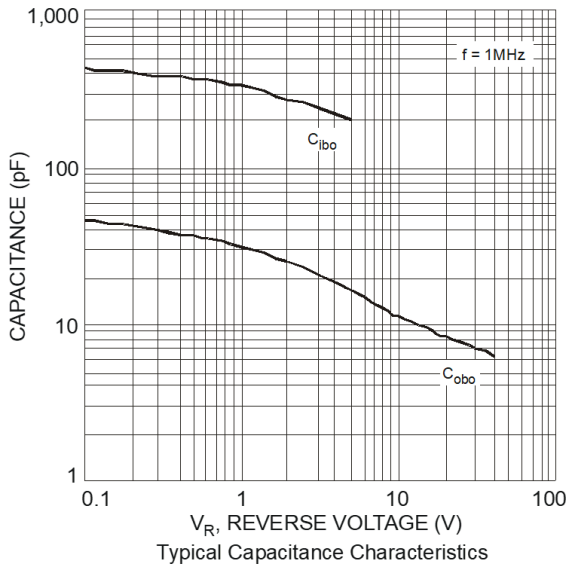
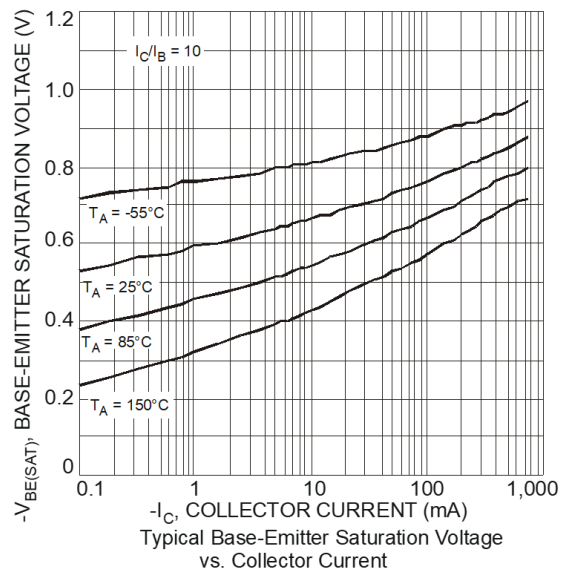
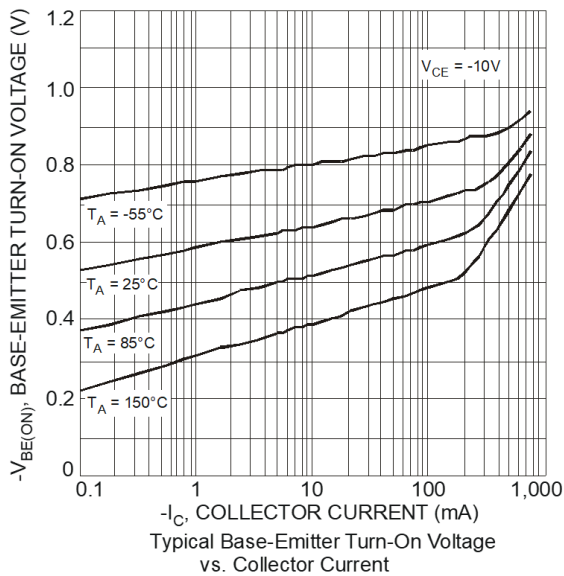
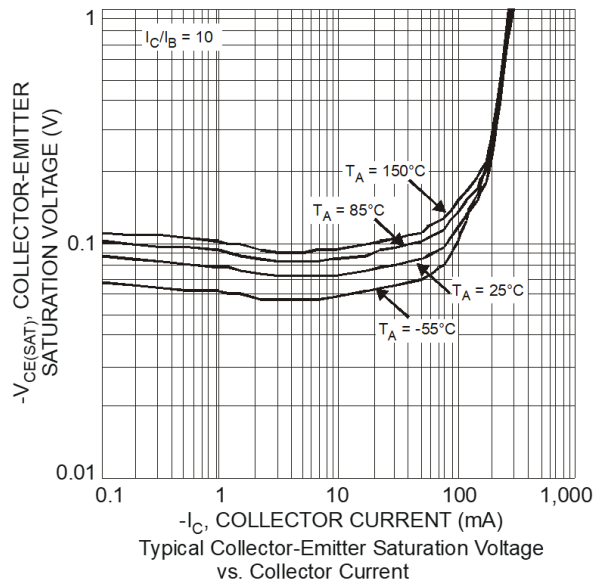
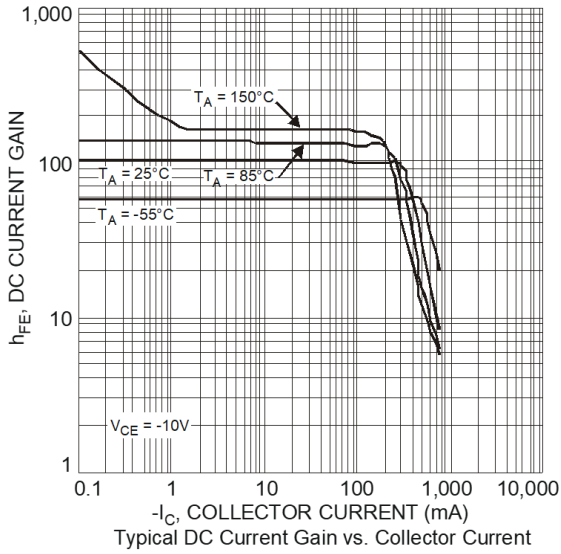


Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| 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%.

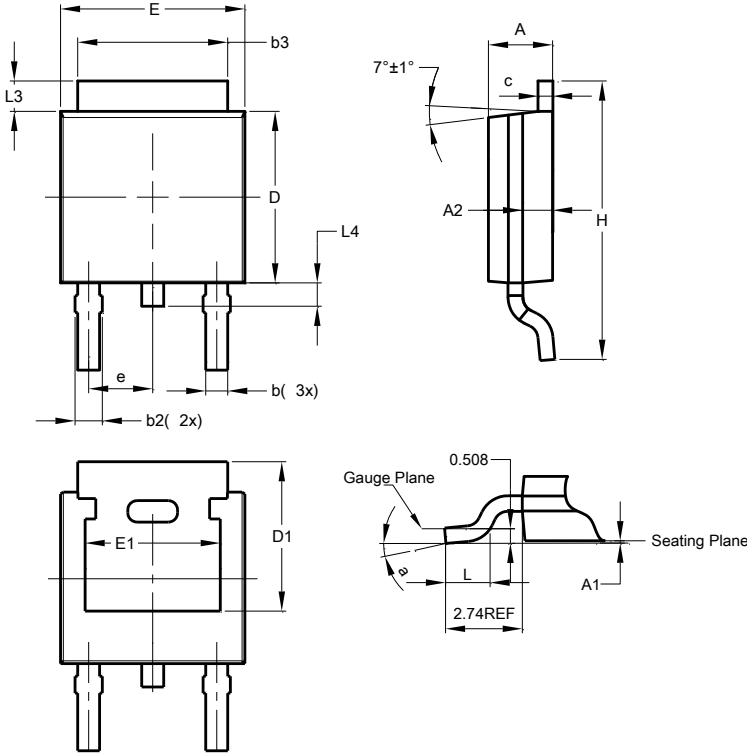
Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

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

TO252 (DPAK)

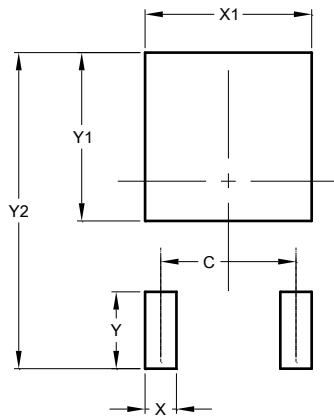


| TO252 (DPAK) | | | |
|-----------------------------|------|-------|-------|
| Dim | Min | Max | Typ |
| A | 2.19 | 2.39 | 2.29 |
| A1 | 0.00 | 0.13 | 0.08 |
| A2 | 0.97 | 1.17 | 1.07 |
| b | 0.64 | 0.88 | 0.783 |
| b2 | 0.76 | 1.14 | 0.95 |
| b3 | 5.21 | 5.46 | 5.33 |
| c | 0.45 | 0.58 | 0.531 |
| 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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