

Product Summary

| | | |
|-------------------------|-----------------------------|--|
| BV_{DSS} | R_{DS(ON)} | I_D T_A = +25°C |
| 450V | 50Ω @ V _{GS} = 10V | 140mA |

Features and Benefits

- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

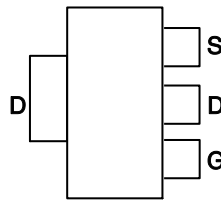
Mechanical Data

- Case: SOT223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals Connections: See Diagram Below
- Terminals: Finish - Matte Tin Annealed over Copper Lead Frame. Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.112 grams (Approximate)

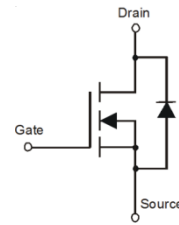
SOT223



Top View



Pin Out - Top View



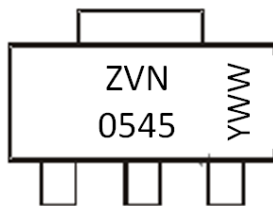
Equivalent Circuit

Ordering Information (Note 4)

| Part Number | Marking | Reel Size (inches) | Tape Width (mm) | Quantity Per Reel |
|-------------|---------|--------------------|-----------------|-------------------|
| ZVN0545GTA | ZVN0545 | 7 | 8 | 1,000 |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html 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 <http://www.diodes.com/products/packages.html>.

Marking Information



ZVN0545 =Product Type Marking Code
 YWW = Date Code Marking
 Y or Y = Last Digit of Year (ex: 5 = 2015)
 WW or WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|--|------------------|-------|------|
| Drain-Source Voltage | V _{DSS} | 450 | V |
| Gate-Source Voltage | V _{GSS} | ±20 | V |
| Continuous Drain Current V _{GS} = 10V | I _D | 140 | mA |
| Pulsed Drain Current | I _{DM} | 600 | mA |

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

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Total Power Dissipation | P _D | 2 | W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

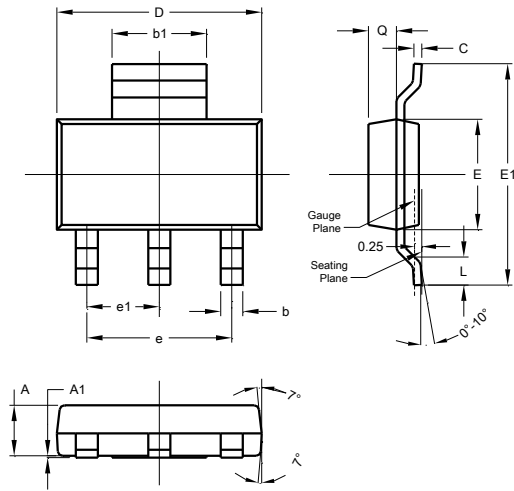
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|---------------------|-----|-----|-----|------|--|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | 450 | – | – | V | V _{GS} = 0V, I _D = 1mA |
| Zero Gate Voltage Drain Current | I _{DSS} | – | – | 10 | µA | V _{DS} = 450V, V _{GS} = 0V |
| Gate-Source Leakage | I _{GSS} | – | – | ±20 | nA | V _{GS} = ±20V, V _{DS} = 0V |
| ON CHARACTERISTICS | | | | | | |
| Gate Threshold Voltage | V _{GS(TH)} | 1 | – | 3 | V | V _{DS} = V _{GS} , I _D = 1mA |
| Static Drain-Source On-State Resistance (Note 5) | R _{DS(ON)} | – | – | 50 | Ω | V _{GS} = 10V, I _D = 100mA |
| On-State Drain Current (Note 5) | I _{D(ON)} | 150 | – | – | mA | V _{DS} = 25V, V _{GS} = 10V |
| Forward Transconductance (Notes 5 and 6) | g _{fs} | 100 | – | – | mS | V _{DS} = 25V, I _D = 100mA |
| DYNAMIC CHARACTERISTICS (Note 6) | | | | | | |
| Input Capacitance | C _{iSS} | – | – | 70 | pF | V _{DS} = 25V, V _{GS} = 0V, f = 1MHz |
| Output Capacitance | C _{oss} | – | – | 10 | pF | |
| Reverse Transfer Capacitance | C _{rSS} | – | – | 4 | pF | |
| Turn-On Delay Time (Note 7) | t _{D(ON)} | – | – | 7 | ns | V _{DD} = 25V, I _D = 100mA |
| Turn-On Rise Time (Note 7) | t _R | – | – | 7 | ns | |
| Turn-Off Delay Time (Note 7) | t _{D(OFF)} | – | – | 16 | ns | |
| Turn-Off Fall Time (Note 7) | t _F | – | – | 10 | ns | |

- Notes:
5. Measured under pulsed conditions. Width=300µs. Duty cycle ≤ 2%.
 6. Sample test.
 7. Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator.

Package Outline Dimensions

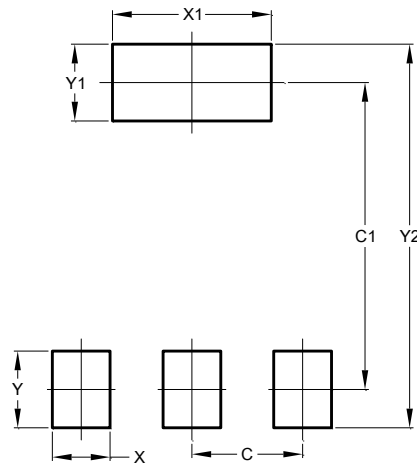
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| SOT223 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A | 1.55 | 1.65 | 1.60 |
| A1 | 0.010 | 0.15 | 0.05 |
| b | 0.60 | 0.80 | 0.70 |
| b1 | 2.90 | 3.10 | 3.00 |
| C | 0.20 | 0.30 | 0.25 |
| D | 6.45 | 6.55 | 6.50 |
| E | 3.45 | 3.55 | 3.50 |
| E1 | 6.90 | 7.10 | 7.00 |
| e | - | - | 4.60 |
| e1 | - | - | 2.30 |
| L | 0.85 | 1.05 | 0.95 |
| Q | 0.84 | 0.94 | 0.89 |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 2.30 |
| C1 | 6.40 |
| X | 1.20 |
| X1 | 3.30 |
| Y | 1.60 |
| Y1 | 1.60 |
| Y2 | 8.00 |

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