

Product Summary

| | | |
|----------------------------|-------------------------------|--|
| V_{(BR)DSS} | Max R_{DS(on)} | Max I_D T_A = +25°C |
| -100V | 8Ω @ V _{GS} = 10V | -310mA |

Features and Benefits

- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

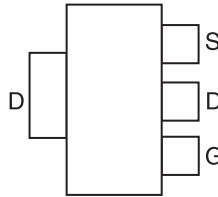
Mechanical Data

- 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 Leadframe; Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.112 grams (Approximate)

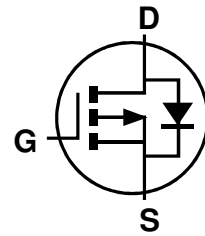
SOT223



Top View



Pin Out Top-View



Equivalent Circuit

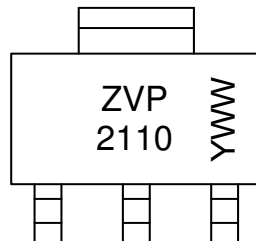
Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|--------|-----------|
| ZVP2110GTA | Standard | SOT223 | 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

SOT223



ZVP 2110 = Product Type Marking Code
 YWW = Date Code Marking
 Y or \bar{Y} = Last Digit of Year (ex: 5= 2015)
 WW or $\bar{W}W$ = Week Code (01~53)

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

| Characteristic | Symbol | Value | Unit |
|--------------------------|-----------------|-------|------|
| Drain-Source Voltage | V _{DS} | -100 | V |
| Gate-Source Voltage | V _{GS} | ±20 | V |
| Continuous Drain Current | I _D | -310 | mA |
| Pulsed Drain Current | I _{DM} | -3 | A |

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

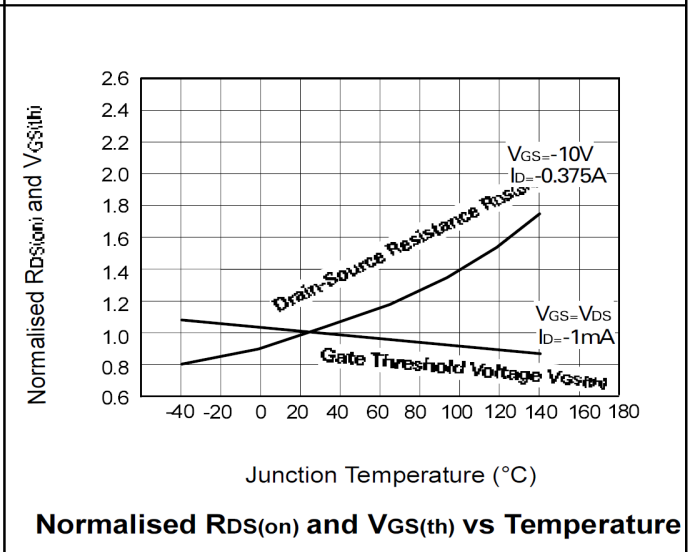
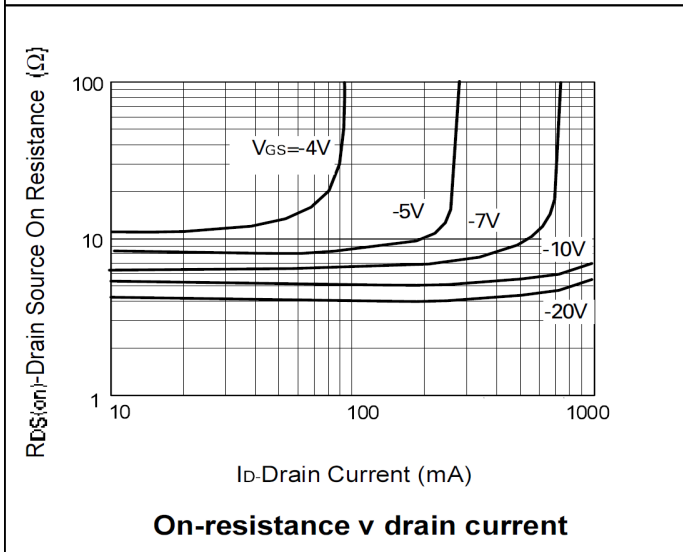
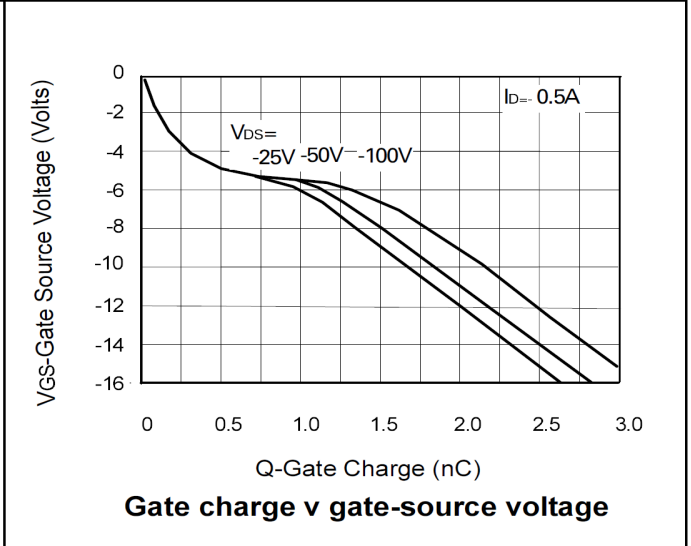
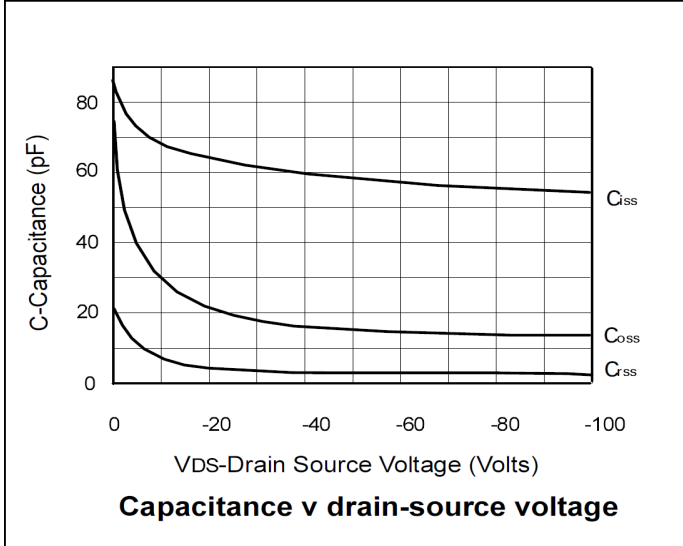
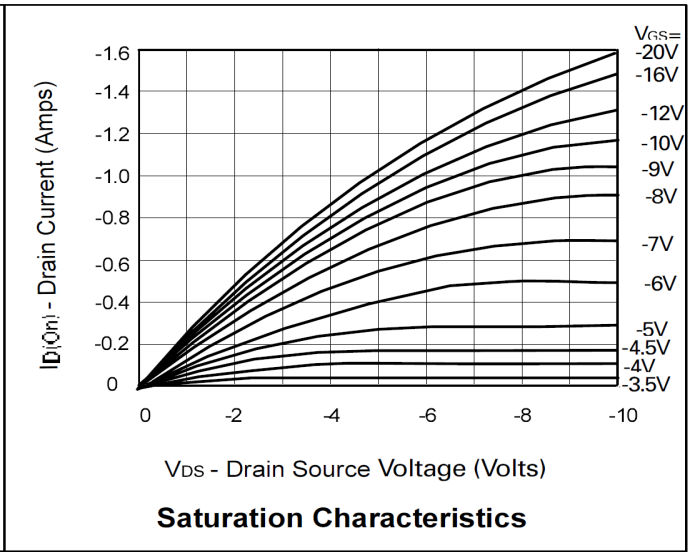
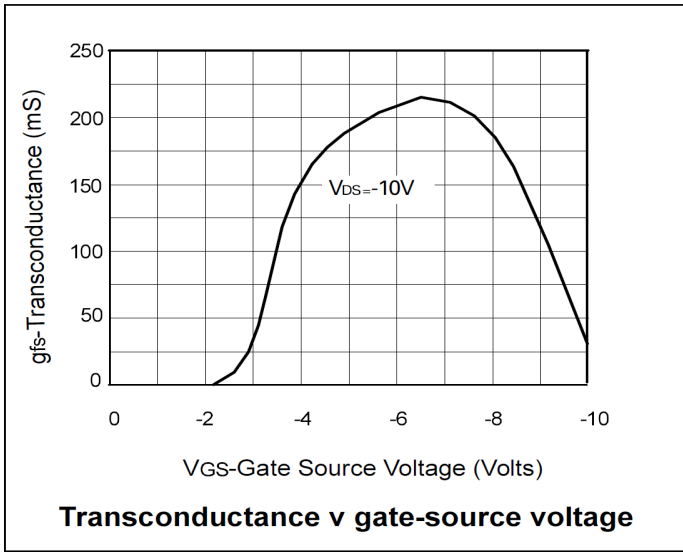
| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation at T _A = +25°C | P _{tot} | 2 | W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

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} | -100 | — | — | V | I _D = -1mA, V _{GS} = 0V |
| Zero Gate Voltage Drain Current | I _{DSS} | — | — | -1 -100 | µA | V _{DS} = -100V, V _{GS} = 0V V _{DS} = -80V, V _{GS} = 0V, T = +125°C (Notes 6) |
| Gate-Body Leakage | I _{GSS} | — | — | -20 | nA | V _{GS} = ±20V, V _{DS} = 0V |
| Gate-Source Threshold Voltage | V _{GS(th)} | -1.5 | — | -3.5 | V | I _D = -1mA, V _{DS} = V _{GS} |
| ON CHARACTERISTICS | | | | | | |
| On-State Drain Current (Note 5) | I _{D(on)} | -750 | — | — | mA | V _{DS} = -25V, V _{GS} = -10V |
| Static Drain-Source On-State Resistance (Note 5) | R _{DS(ON)} | — | — | 8 | Ω | V _{GS} = -10V, I _D = -375mA |
| Forward Transconductance (Notes 5 & 6) | g _{fs} | 125 | — | — | mS | V _{DS} = -25V, I _D = -375mA |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Input Capacitance (Note 6) | C _{iss} | — | — | 100 | pF | V _{DS} = -25V, V _{GS} = 0V f = 1MHz |
| Output Capacitance (Note 6) | C _{oss} | — | — | 35 | pF | |
| Reverse Transfer Capacitance (Note 6) | C _{rss} | — | — | 10 | pF | |
| Turn-On Delay Time (Notes 6 & 7) | t _{d(on)} | — | — | 7 | ns | V _{DD} ≈ -25V, I _D = -375mA |
| Turn-On Rise Time (Notes 6 & 7) | t _r | — | — | 15 | ns | |
| Turn-Off Delay Time (Notes 6 & 7) | t _{d(off)} | — | — | 12 | Ns | |
| Turn-Off Fall Time (Notes 6 & 7) | t _f | — | — | 15 | Ns | |

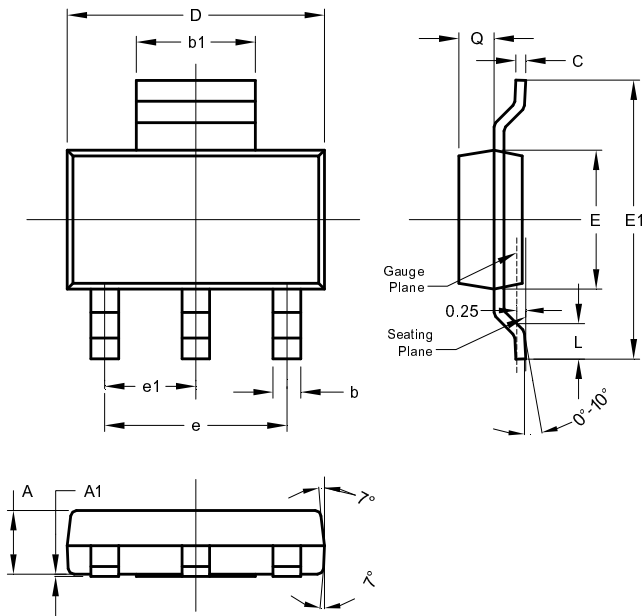
- Notes:
5. Measured under pulsed conditions. Width = 300µs. Duty cycle ≤ 2%.
 6. Sample Test.
 7. Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator.

Typical Characteristics



Package Outline Dimensions

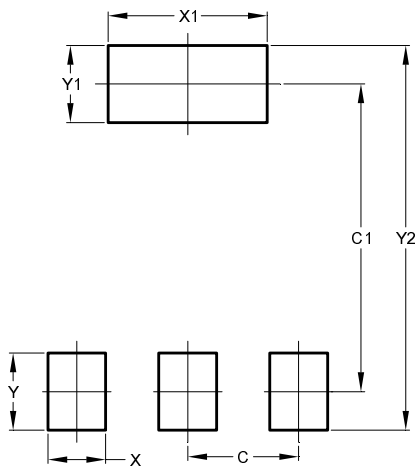
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| 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 |
| C2 | 8.00 |

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