

Features and Benefits

- 240 Volt VDS
- $R_{DS(on)}$ = 8.8W typical at $V_{GS} = -3.5V$
- Low Threshold and Fast Switching
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

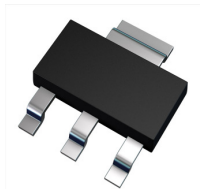
Applications

- Electronic Hook Switches
- Telecoms and Battery Powered Equipment

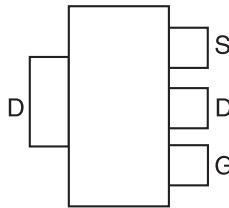
Mechanical Data

- Case: SOT223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish (E3)
- Weight: 0.112 grams (Approximate)

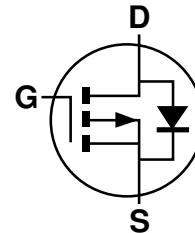
SOT223



Top View



Pin Out - Top



Equivalent Circuit

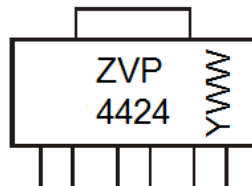
Ordering Information (Note 4)

| Part Number | Marking | Reel size (inches) | Tape width (mm) | Quantity per reel |
|-------------|---------|--------------------|-----------------|-------------------|
| ZVP4424GTA | ZVP4424 | 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

SOT223



ZVP4424 = 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)

ABSOLUTE MAXIMUM RATINGS

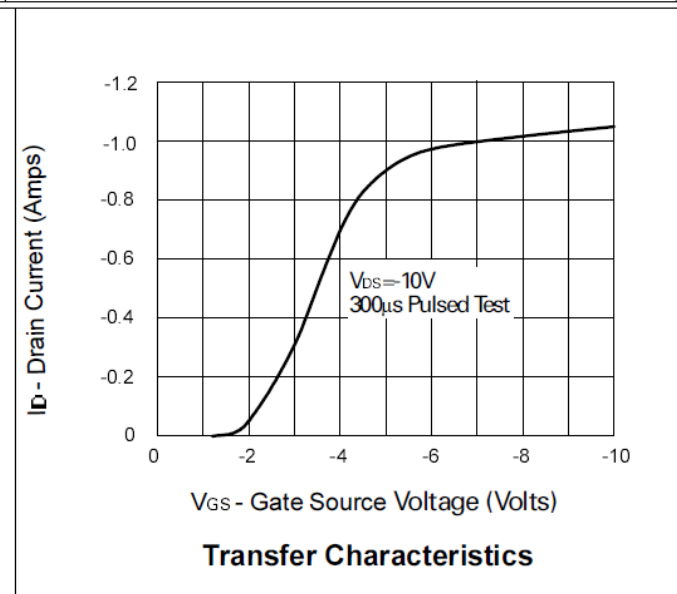
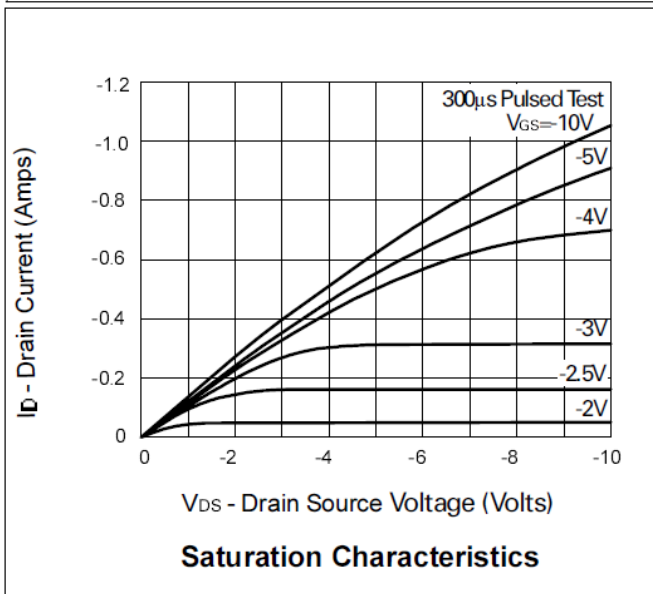
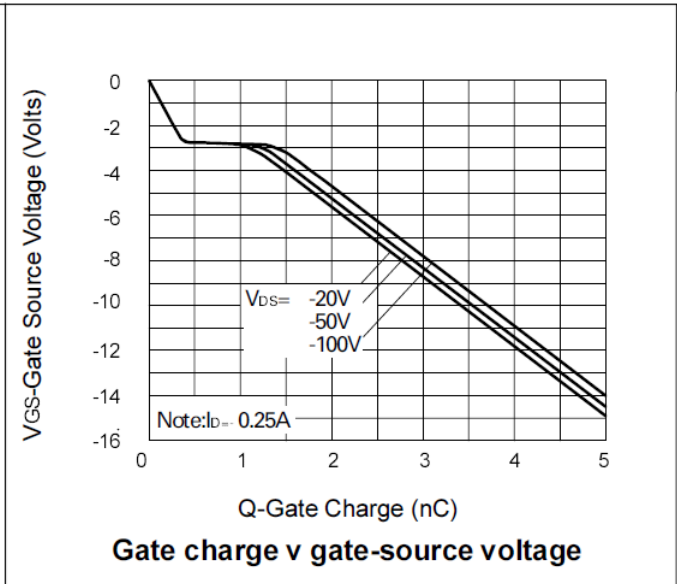
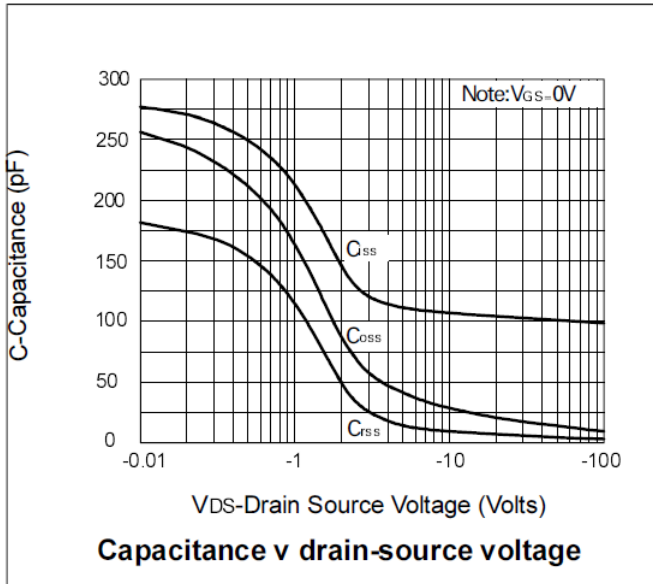
| Characteristic | Symbol | Value | Unit |
|---|----------------|-------------|------------------|
| Drain-Source Voltage | V_{DSS} | -240 | V |
| Gate-Source Voltage | V_{GSS} | ± 40 | V |
| Continuous Drain Current (@ $T_A = +25^\circ\text{C}$) | I_D | -480 | mA |
| Pulsed Drain Current | I_{DM} | -1.0 | A |
| Power Dissipation (@ $T_A = +25^\circ\text{C}$) | P_D | 2.5 | W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS (@ $T_A = +25^\circ\text{C}$, unless otherwise stated.)

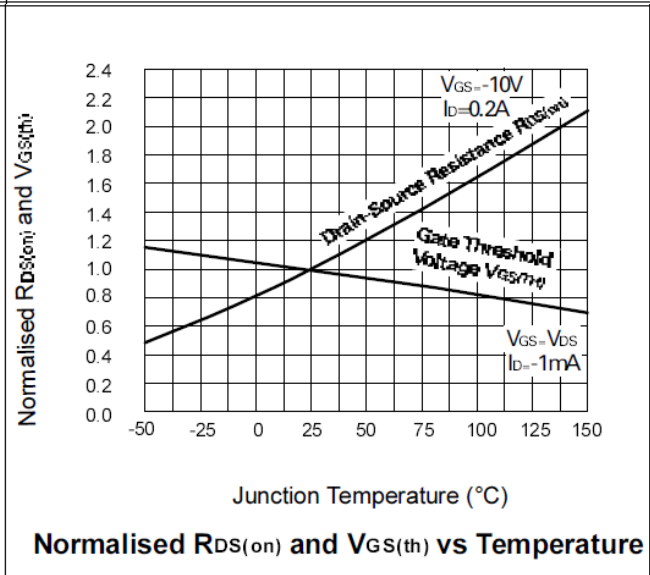
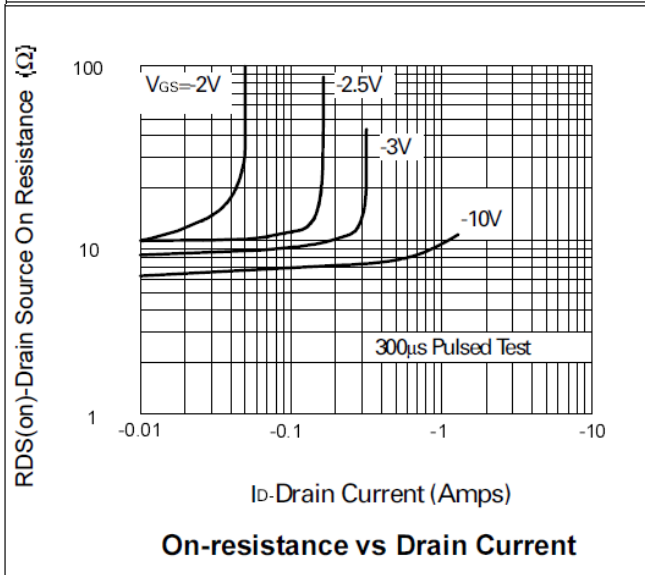
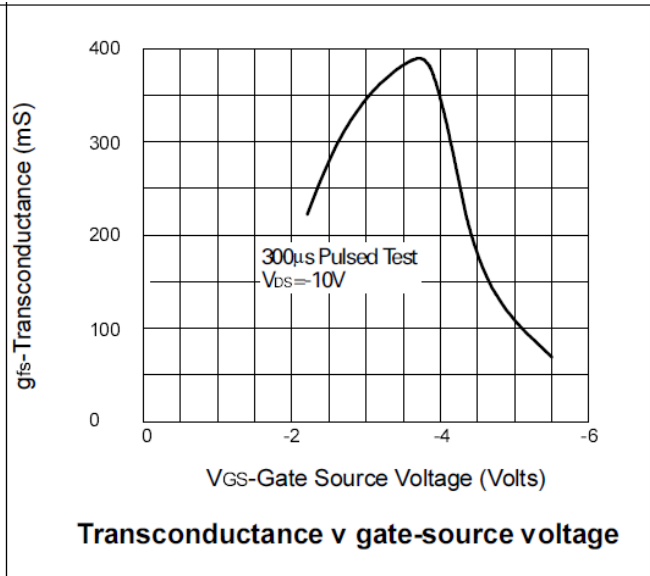
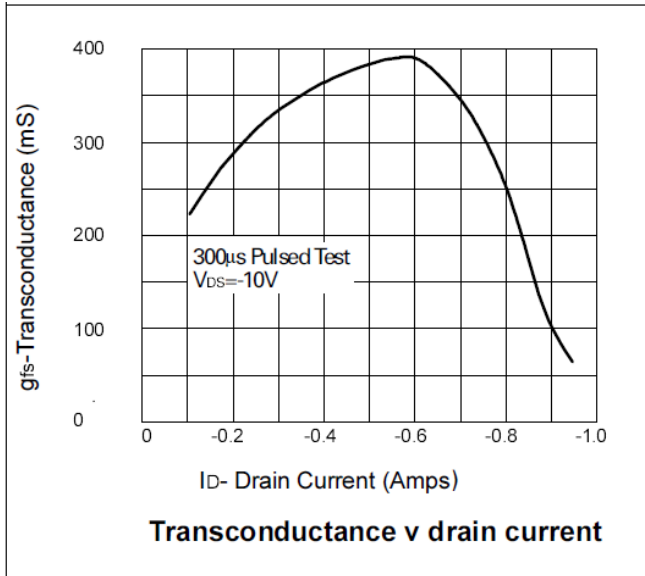
| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|--------------|-------|------------|-------------|--------------------------------|--|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | -240 | - | - | V | $V_{GS} = 0V, I_D = -1mA$ |
| Zero Gate Voltage Drain Current $T_J = +25^\circ\text{C}$ | I_{DSS} | - | - | -10 -100 | μA μA | $V_{DS} = -240V, V_{GS} = 0V$ $V_{DS} = -190V, V_{GS} = 0V, T_A = +125^\circ\text{C}$ |
| Gate-Source Leakage | I_{GSS} | - | - | 100 | nA | $V_{GS} = \pm 40V, V_{DS} = 0V$ |
| On-State Drain Current | $I_{D(ON)}$ | -0.75 | -1.0 | - | A | $V_{GS} = -10V, V_{DS} = -10V$ |
| ON CHARACTERISTICS | | | | | | |
| Gate Threshold Voltage | $V_{GS(TH)}$ | -0.7 | -1.4 | -2.0 | V | $V_{DS} = V_{GS}, I_D = -1mA$ |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | - | 7.1 8.8 | 9 11 | Ω Ω | $V_{GS} = -10V, I_D = -200mA$ $V_{GS} = -3.5V, I_D = -100mA$ |
| Forward Transconductance (Notes 5 & 6) | g_{fs} | 125 | - | - | mS | $V_{DS} = -10V, I_D = -0.2A$ |
| DYNAMIC CHARACTERISTICS (Note 6) | | | | | | |
| Input Capacitance | C_{iss} | - | 100 | 200 | pF | $V_{DS} = -25V, V_{GS} = 0V,$ $f = 1.0MHz$ |
| Output Capacitance | C_{oss} | - | 18 | 25 | pF | |
| Reverse Transfer Capacitance | C_{rss} | - | 5 | 15 | pF | |
| Turn-On Delay Time (Note 7) | $t_{D(ON)}$ | - | 8 | 15 | ns | |
| Turn-On Rise Time (Note 7) | t_R | - | 8 | 15 | ns | |
| Turn-Off Delay Time (Note 7) | $t_{D(OFF)}$ | - | 26 | 40 | ns | |
| Turn-Off Fall Time (Note 7) | t_F | - | 20 | 30 | ns | |

- Notes: 5. Measured under pulsed conditions. Width=300ms. Duty cycle $\leq 2\%$.
6. Sample test.
7. Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator
spice parameter data is available upon request for this device.

Typical Characteristics

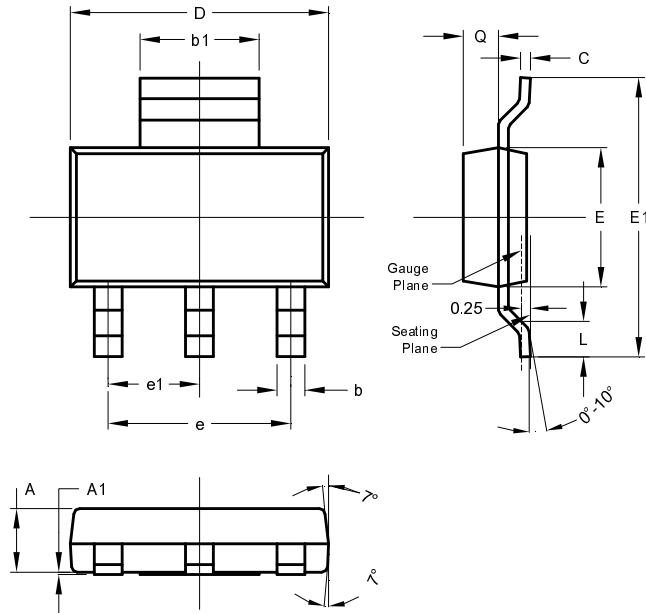


Typical Characteristics (continued)



Package Outline Dimensions

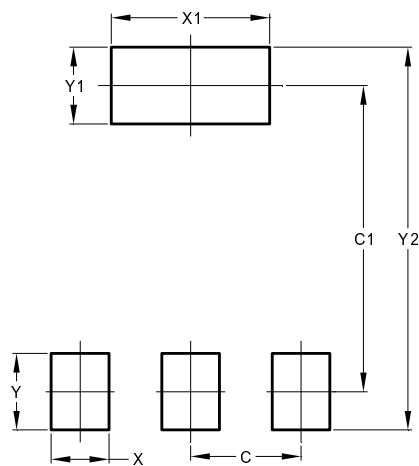
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| 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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