

Product Summary

BV_{DSS}	$R_{DS(ON)}$	I_D $T_A = +25^\circ C$
100V	1.5Ω @ $V_{GS} = 10V$	800mA

Features and Benefits

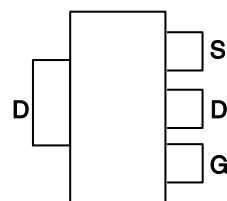
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

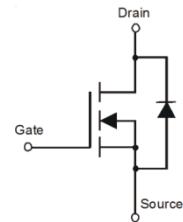
- Case: SOT223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals Connections: See Diagram Below
- Terminals: Finish - Matte Tin Annealed over Copper Lead Frame. Solderable per MIL-STD-202, Method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



Top View



Pin Out - Top View



Equivalent Circuit

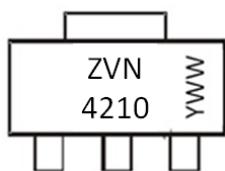
Ordering Information (Note 4)

Part Number	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
ZVN4210GTA	ZVN4210	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



ZVN4210 = Product Type Marking Code
 YWW = Date Code Marking
 Y or Y = Year (ex: 5 = 2015)
 WW or WW = Week (01 to 53)

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

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current $V_{GS} = 10\text{V}$	$T_A = +25^\circ\text{C}$	I_D	800 mA
Pulsed Drain Current	I_{DM}	6	A

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

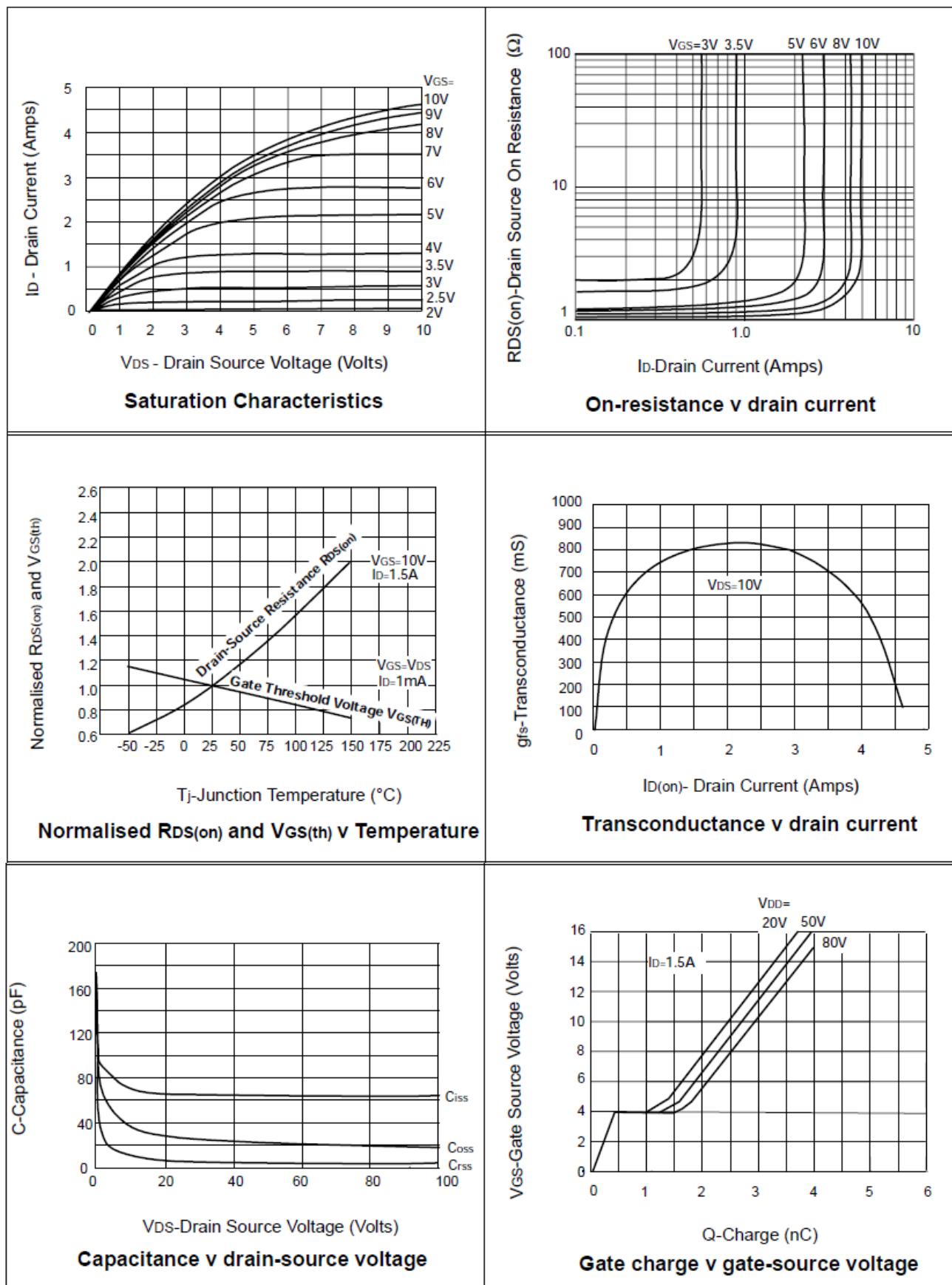
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	100	—	—	V	$V_{GS} = 0\text{V}, I_D = 1\text{mA}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	10	μA	$V_{DS} = 100\text{V}, V_{GS} = 0\text{V}$
		—	—	100	μA	$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}, T = 125^\circ\text{C}$ (Note 6)
Gate-Source Leakage	I_{GSS}	—	—	± 100	nA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	0.8	—	2.4	V	$V_{DS} = V_{GS}, I_D = 1\text{mA}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	—	1.5	Ω	$V_{GS} = 10\text{V}, I_D = 1.5\text{A}$
		—	—	1.8	Ω	$V_{GS} = 5\text{V}, I_D = 0.5\text{A}$
Diode Forward Voltage (Note 5)	V_{SD}	—	0.79	—	V	$I_S = 0.32\text{A}, V_{GS} = 0\text{V}$
		—	0.89	—		$I_S = 1.0\text{A}, V_{GS} = 0\text{V}$
On-State Drain Current (Note 5)	$I_{D(ON)}$	2.5	—	—	A	$V_{DS} = 25\text{V}, V_{GS} = 10\text{V}$
Forward Transconductance (Notes 5 and 6)	g_{fs}	250	—	—	mS	$V_{DS} = 25\text{V}, I_D = 1.5\text{A}$
Reverse Recovery Time (to $I_R = 10\%$)	t_{RR}	—	135	—	ns	$I_F = 0.45\text{A}, V_{GS} = 0\text{V}, I_R = 100\text{mA}, V_R = 10\text{V}$
DYNAMIC CHARACTERISTICS (Note 6)						
Input Capacitance	C_{iss}	—	—	100	pF	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$
Output Capacitance	C_{oss}	—	—	40	pF	
Reverse Transfer Capacitance	C_{rss}	—	—	12	pF	
Turn-On Delay Time (Note 7)	$t_{D(ON)}$	—	—	4	ns	$V_{DD} = 25\text{V}, I_D = 1.5\text{A}$
Turn-On Rise Time (Note 7)	t_R	—	—	8	ns	
Turn-Off Delay Time (Note 7)	$t_{D(OFF)}$	—	—	20	ns	
Turn-Off Fall Time (Note 7)	t_F	—	—	30	ns	

Notes: 5. Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.

6. Sample test.

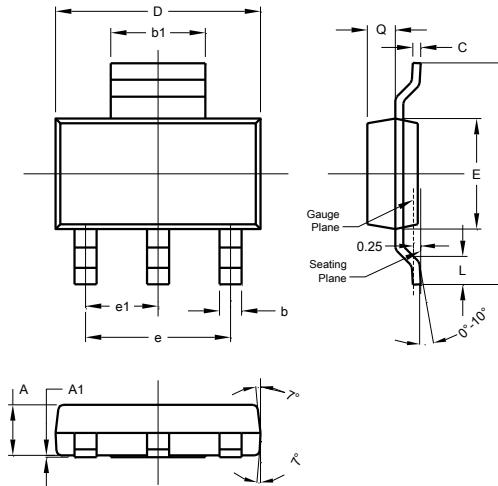
7. Switching times measured with 50 Ω source impedance and $<5\text{ns}$ rise time on a pulse generator. Spice parameter data is available upon request for this device

Electrical Characteristics



Package Outline Dimensions

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

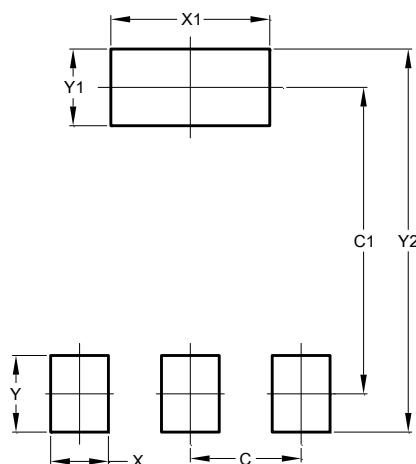


SOT223			
Dim	Min	Max	Typ
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b	0.60	0.80	0.70
b1	2.90	3.10	3.00
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	-	-	4.60
e1	-	-	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89

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
Y2	8.00

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