



ZVN4210G

SOT223 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

Product Summary

BV _{DSS}	R _{DS(ON)}	I _D T _A = +25°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

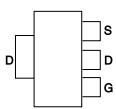
Mechanical Data

- 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 (3)
- Weight: 0.112 grams (Approximate)

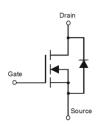
SOT223



Top View



Pin Out - Top View



Equivalent Circuit

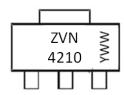
Ordering Information (Note 4)

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

February 2015

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Maximum Ratings (@ $T_A = +25^{\circ}C$, 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} = 10V	T _A = +25°C	l _D	800	mA
Pulsed Drain Current		I _{DM}	6	A

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

Characteristic	Symbol	Value	Unit	
Total Power Dissipation	T _A = +25°C	P_D	2	W
Operating and Storage Temperature Range	$T_{J_i} T_{STG}$	-55 to +150	°C	

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

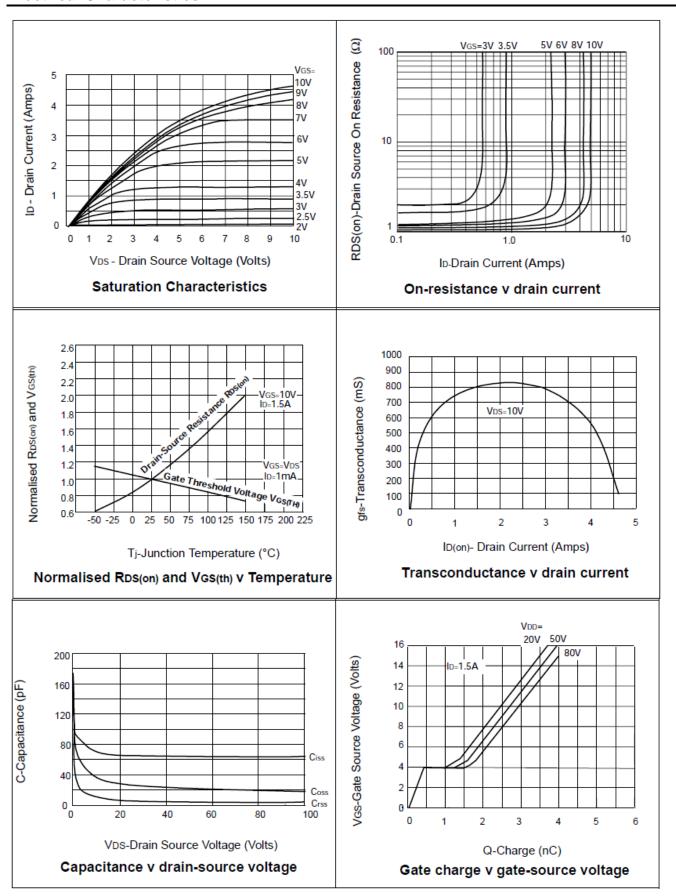
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage	BV _{DSS}	100	-	-	V	$V_{GS} = 0V$, $I_D = 1mA$	
Zara Cata Valtaga Drain Current	,	_	_	10	μA	$V_{DS} = 100V, V_{GS} = 0V$	
Zero Gate Voltage Drain Current	I _{DSS}	I	ı	100	μΑ	V _{DS} =80V, V _{GS} =0V, T=125°C (Note 6)	
Gate-Source Leakage	I _{GSS}	-	-	±100	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$	
ON CHARACTERISTICS							
Gate Threshold Voltage	V _{GS(TH)}	0.8	1	2.4	V	$V_{DS} = V_{GS}$, $I_D = 1mA$	
Static Drain-Source On-Resistance		-	-	1.5	Ω	$V_{GS} = 10V, I_D = 1.5A$	
Static Drain-Source On-Resistance	R _{DS(ON)}	-	_	1.8	Ω	$V_{GS} = 5V, I_D = 0.5A$	
Diode Forward Voltage (Note 5)	V _{SD}	_	0.79	-	V	I _S =0.32A, V _{GS} =0V	
blode Forward Voltage (Note 5)		=	0.89	-	V	$I_S = 1.0A, V_{GS} = 0V$	
On-State Drain Current (Note 5)	I _{D(ON)}	2.5	-	-	Α	V_{DS} =25V, V_{GS} =10V	
Forward Transconductance (Notes 5 and 6)	g fs	250	I	-	mS	$V_{DS} = 25V, I_{D} = 1.5A$	
Reverse Recovery Time (to I _R =10%)	t _{RR}	-	135	-	ns	$I_F = 0.45A$, $V_{GS} = 0V$, $I_R = 100mA$, $V_R = 10V$	
DYNAMIC CHARACTERISTICS (Note 6)							
Input Capacitance	C _{iss}	I	I	100	pF		
Output Capacitance	Coss	ı	1	40	pF	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$	
Reverse Transfer Capacitance	Crss	-	-	12	pF		
Turn-On Delay Time (Note 7)	t _{D(ON)}	Ī	I	4	ns		
Turn-On Rise Time (Note 7)	t _R	Ī		8	ns	\/ 25\/ 4.5A	
Turn-Off Delay Time (Note 7)	t _{D(OFF)}	-	-	20	ns	$V_{DD} = 25V, I_{D}=1.5A$	
Turn-Off Fall Time (Note 7)	t _F	=	=	30	ns	<u> </u>	

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. Spice parameter data is available upon request for this device



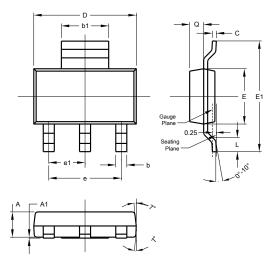
Electrical Characteristics





Package Outline Dimensions

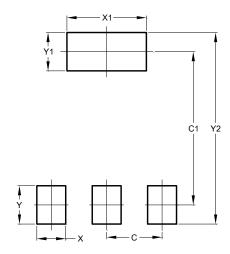
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SOT223					
Dim	Min	Max	Тур		
Α	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		
С	0.20	0.30	0.25		
D	6.45	6.55	6.50		
Е	3.45	3.55	3.50		
E1	6.90	7.10	7.00		
е	-	-	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)			
С	2.30			
C1	6.40			
Х	1.20			
X1	3.30			
Y	1.60			
Y1	1.60			
Y2	8 00			



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