



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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Product Summary

BV_{DSS}	$R_{DS(on)}$	I_D $T_A = +25^\circ C$
-200V	25 Ω @ $V_{GS} = -10V$	-200mA

Description and Applications

This MOSFET is designed to minimize the on-state resistance yet maintain superior switching performance, making it ideal for high efficiency power management applications.

- Backlighting
- AC-DC converters

Features and Benefits

- Low On-Resistance
- Fast Switching Speed
- Complementary Type – DIODES™ ZVN2120G

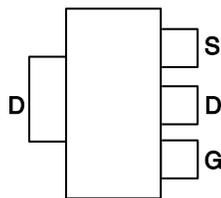
Mechanical Data

- Package: SOT223
- Package 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 (E3)
- Weight: 0.112 grams (Approximate)

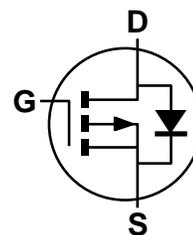
SOT223 (Type DN)



Top View



Pin Out - Top



Equivalent Circuit

View

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

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-200	V
Continuous Drain Current	I _D	-200	mA
Pulsed Drain Current	I _{DM}	-1.2	A

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

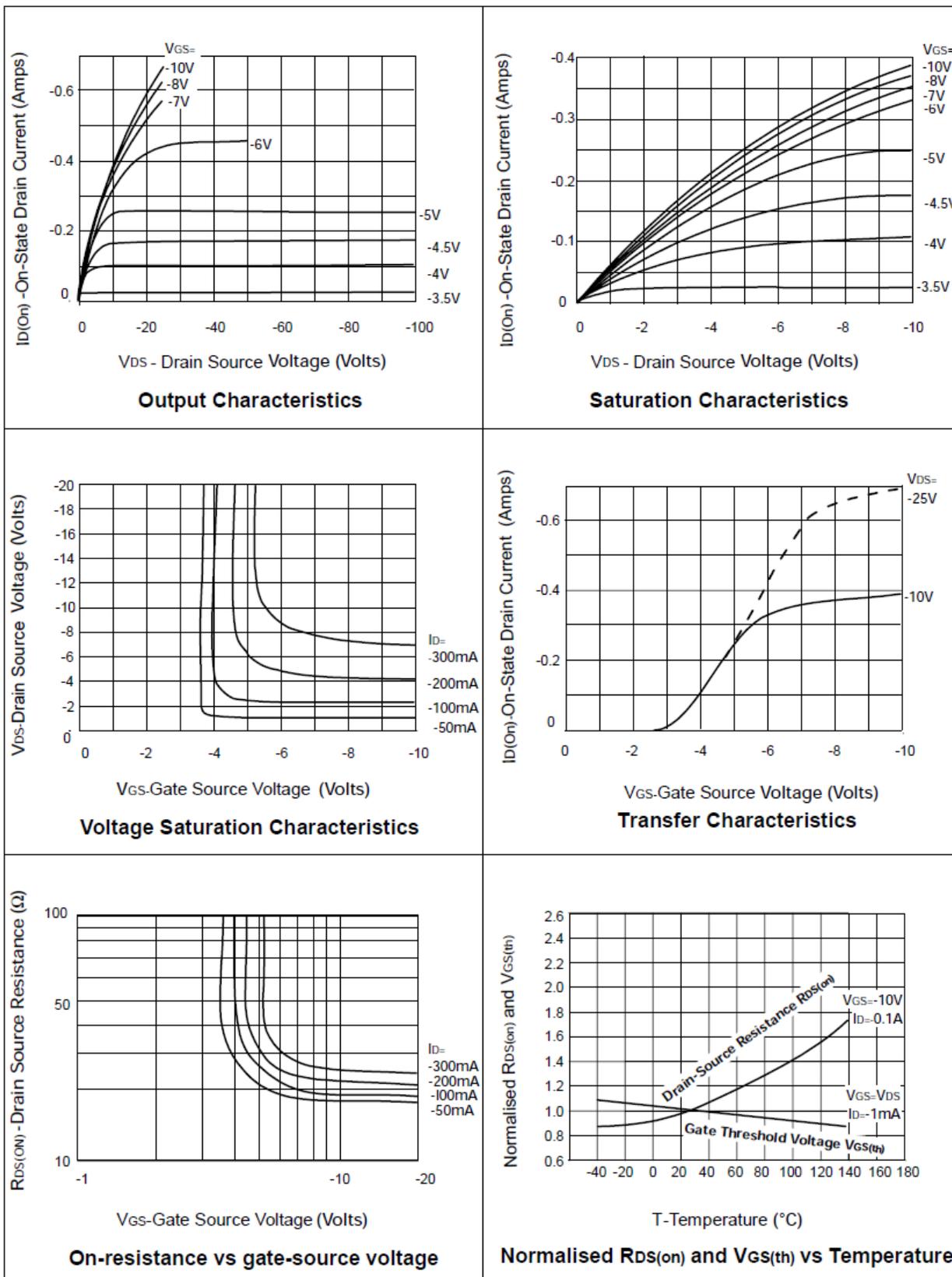
Characteristic	Symbol	Value	Unit
Power Dissipation	P _{tot}	2	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

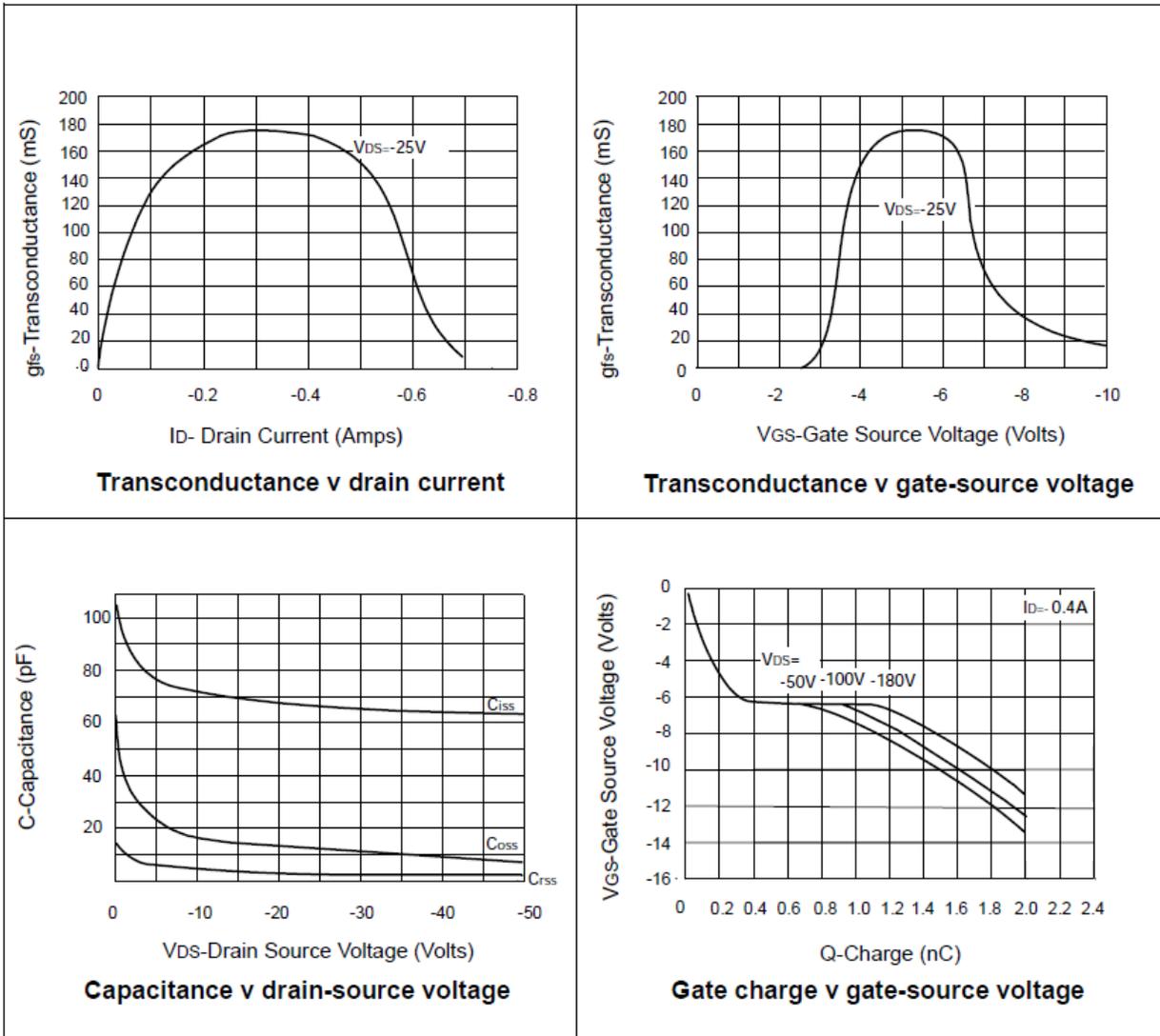
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	-200	—	—	V	I _D = -1mA, V _{GS} = 0V
Gate-Source Threshold Voltage	V _{GS(th)}	-1.5	—	-3.5	V	I _D = -1mA, V _{DS} = V _{GS}
Gate-Body Leakage	I _{GSS}	—	—	-20	nA	V _{GS} = ±20V, V _{DS} = 0V
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-10	μA	V _{DS} = -200V, V _{GS} = 0V
				-100	μA	V _{DS} = -160V, V _{GS} = 0V, T = +125°C (Note 6)
On-State Drain Current (Note 5)	I _{D(on)}	-300	—	—	mA	V _{DS} = -25V, V _{GS} = -10V
Static Drain-Source On-State Resistance (Note 5)	R _{DS(on)}	—	—	25	Ω	V _{GS} = -10V, I _D = -150mA
Forward Transconductance (Notes 5 & 6)	g _{fS}	50	—	—	mS	V _{DS} = -25V, I _D = -150mA
Dynamic Characteristics (Note 6)						
Input Capacitance	C _{iss}	—	—	100	pF	V _{DS} = -25V, V _{GS} = 0V, f = 1MHz
Common Source Output Capacitance	C _{oss}	—	—	25		
Reverse Transfer Capacitance	C _{rss}	—	—	7		
Turn-On Delay Time (Note 7)	t _{d(on)}	—	—	7	ns	V _{DD} = -25V, I _D = -150mA
Rise Time (Note 7)	t _r	—	—	15		
Turn-Off Delay Time (Note 7)	t _{d(off)}	—	—	12		
Fall Time (Note 7)	t _f	—	—	15		

- 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

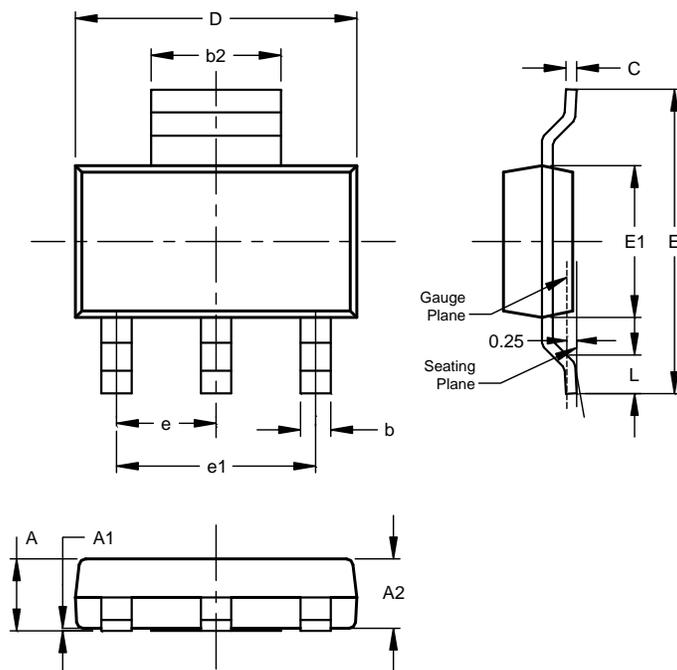


Typical Characteristics (continued)



Package Outline Dimensions

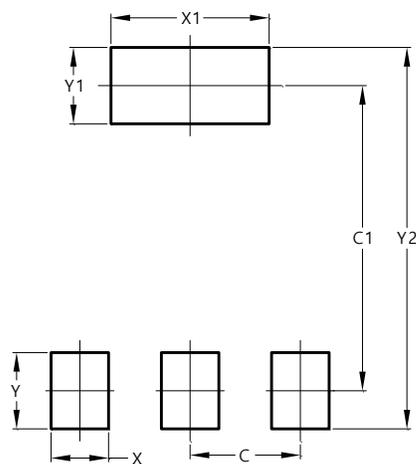
SOT223 (Type DN)



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Dim	Min	Max	Typ
A	--	1.70	--
A1	0.01	0.15	--
A2	1.50	1.68	1.60
b	0.60	0.80	0.70
b2	2.90	3.10	--
c	0.20	0.32	--
D	6.30	6.70	--
E	6.70	7.30	--
E1	3.30	3.70	--
e	--	--	2.30
e1	--	--	4.60
L	0.85	--	--
All Dimensions in mm			

Suggested Pad Layout

SOT223 (Type DN)



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