



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

$V_{(BR)DSS}$	Max $R_{DS(on)}$	Max I_D $T_A = +25^{\circ}C$
-100V	$8\Omega @ V_{GS} = 10V$	-310mA

Description

This new generation MOSFET has been designed to minimize the on-state resistance ($R_{DS(ON)}$) and yet maintain superior switching performance, making it ideal for high-efficiency power management applications.

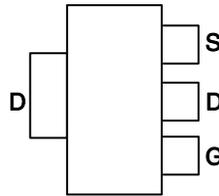
Mechanical Data

- Package: SOT223 (Type DN)
- 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)

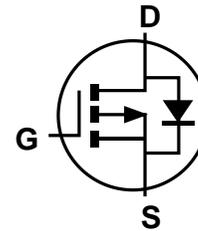
SOT223 (Type DN)



Top View



Pin Out Top-View



Equivalent Circuit

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

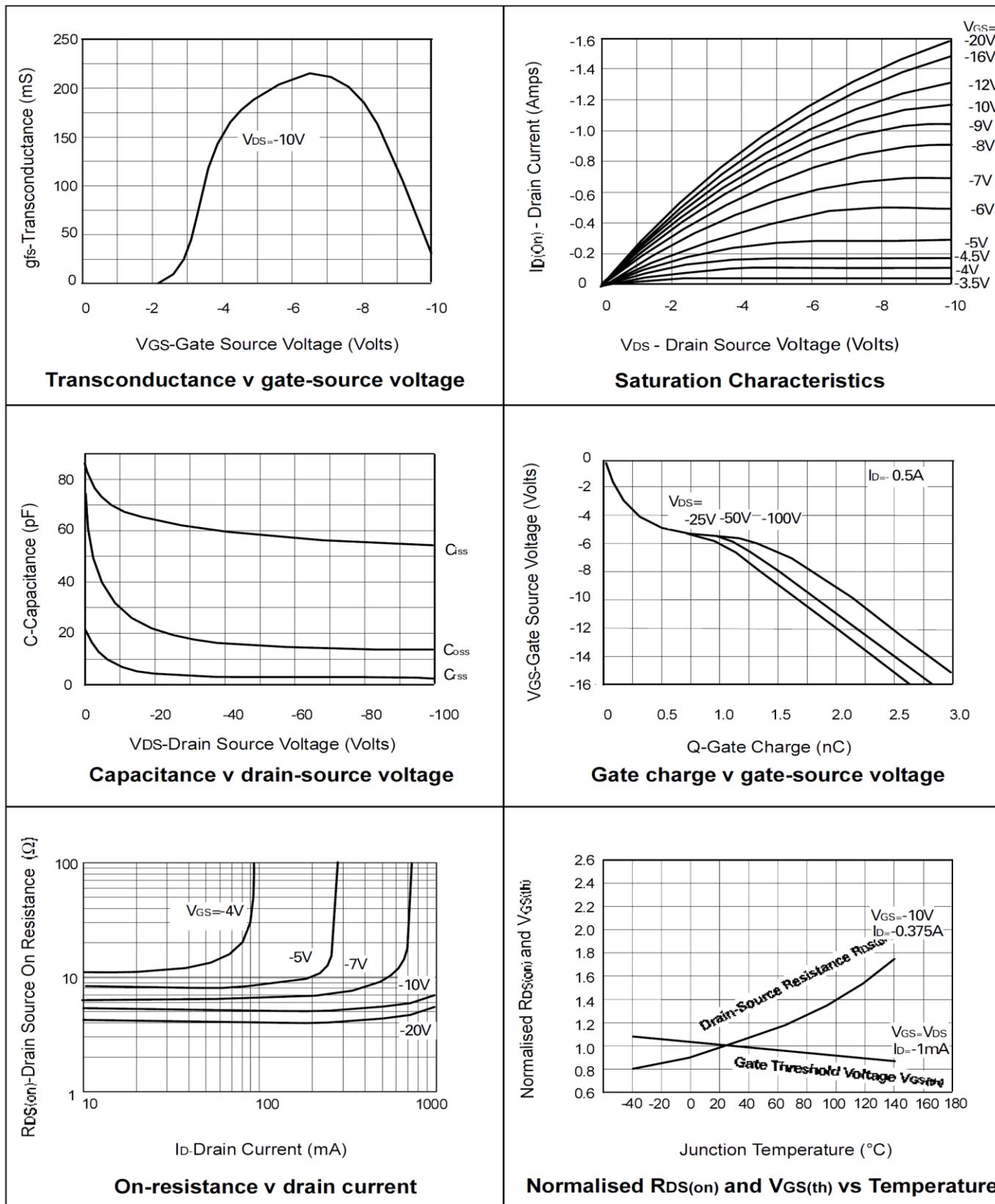
Characteristic	Symbol	Value	Unit
Power Dissipation at $T_A = +25^\circ\text{C}$	P_{tot}	2	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

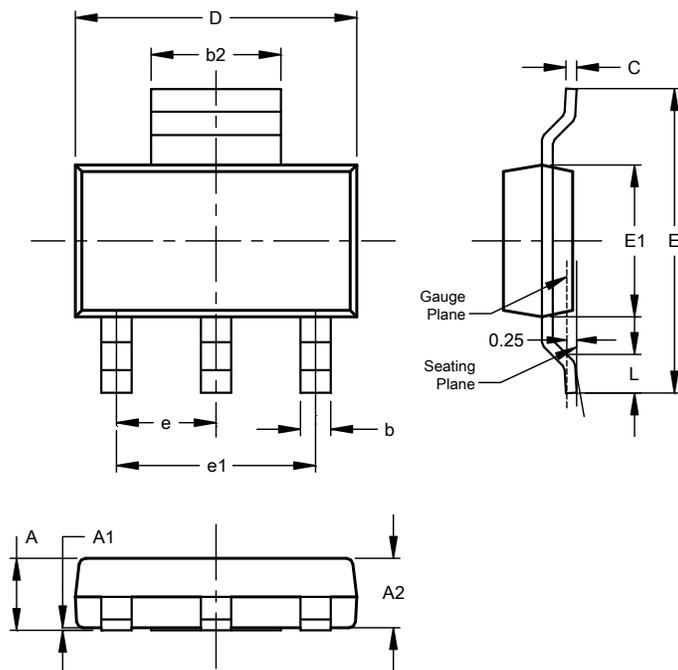
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	-100	—	—	V	$I_D = -1\text{mA}, V_{GS} = 0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1 -100	μA	$V_{DS} = -100\text{V}, V_{GS} = 0\text{V}$ $V_{DS} = -80\text{V}, V_{GS} = 0\text{V}, T = +125^\circ\text{C}$ (Note 6)
Gate-Body Leakage	I_{GSS}	—	—	-20	nA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-1.5	—	-3.5	V	$I_D = -1\text{mA}, V_{DS} = V_{GS}$
ON CHARACTERISTICS						
On-State Drain Current (Note 5)	$I_{D(on)}$	-750	—	—	mA	$V_{DS} = -25\text{V}, V_{GS} = -10\text{V}$
Static Drain-Source On-State Resistance (Note 5)	$R_{DS(on)}$	—	—	8	Ω	$V_{GS} = -10\text{V}, I_D = -375\text{mA}$
Forward Transconductance (Note 5, 6)	g_{fs}	125	—	—	mS	$V_{DS} = -25\text{V}, I_D = -375\text{mA}$
DYNAMIC CHARACTERISTICS						
Input Capacitance (Note 6)	C_{iss}	—	—	100	pF	$V_{DS} = -25\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{MHz}$
Output Capacitance (Note 6)	C_{oss}	—	—	35	pF	
Reverse Transfer Capacitance (Note 6)	C_{rss}	—	—	10	pF	
Turn-On Delay Time (Note 6, 7)	$t_{d(on)}$	—	—	7	ns	$V_{DD} \approx -25\text{V}, I_D = -375\text{mA}$
Turn-On Rise Time (Note 6, 7)	t_r	—	—	15	ns	
Turn-Off Delay Time (Note 6, 7)	$t_{d(off)}$	—	—	12	Ns	
Turn-Off Fall Time (Note 6, 7)	t_f	—	—	15	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 <5ns rise time on a pulse generator.

Typical characteristics



Package Outline Dimensions



Suggested Pad Layout

