优尚

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}	**$R_{DS(ON)}$ max**	**I_D max**
-100V	20Ω @ V_{GS} = -10V	-75mA

Description and Applications

This MOSFET is 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.

- Load Switching

Features and Benefits

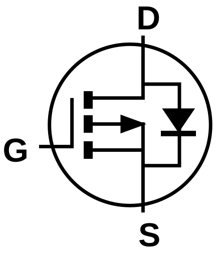
- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

Mechanical Data

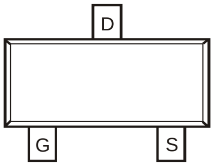
- Case: SOT23
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Terminals Connections: See Diagram Below
- Weight: 0.008 grams (Approximate)

SOT23

Top View



Internal Schematic



Top View

Maximum Ratings (@T_A = +25°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	Steady State	I_D	-75	mA
Pulsed Drain Current (10µs Pulse, Duty Cycle = 1%)		I_{DM}	-1.2	A
Pulsed Source Current (10µs Pulse, Duty Cycle = 1%)		I_{SM}	-1.2	A

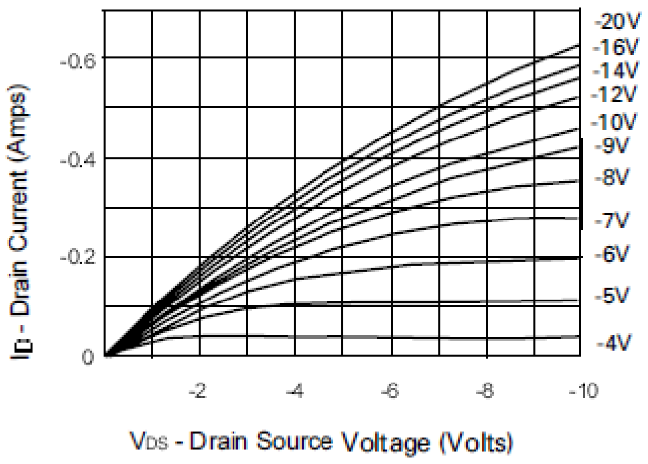
Thermal Characteristics

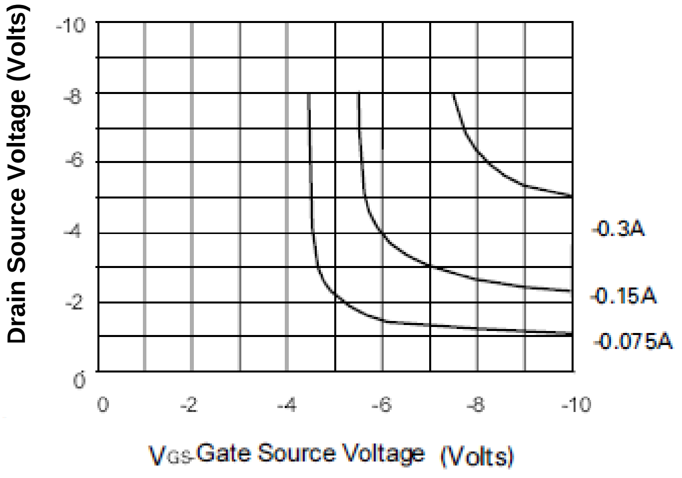
Characteristic	Symbol	Value	Unit
Power Dissipation (@T_A = +25°C)	P_D	330	mW
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

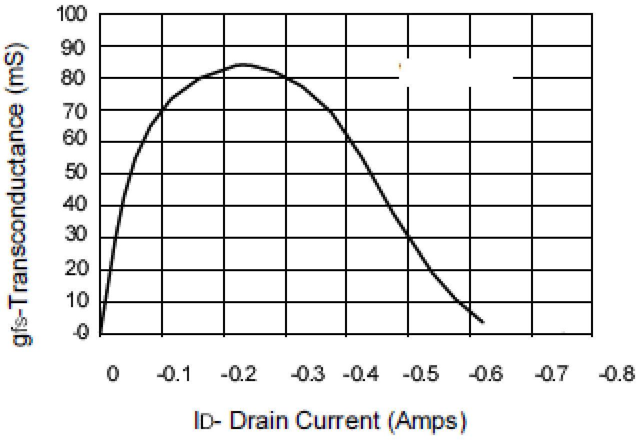
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Drain-Source Breakdown Voltage	BV_{DSS}	-100	—	—	V	V_{GS} = 0V, I_D = -1mA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1	µA	V_{DS} = -100V, V_{GS} = 0V
		—	—	-50	µA	V_{DS} = -80V, V_{GS} = 0V, T = +125°C
Gate-Source Leakage	I_{GSS}	—	—	±20	nA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	$V_{GS(TH)}$	-1.5	—	-3.5	V	V_{DS} = V_{GS}, I_D = -1mA
Static Drain-Source On-Resistance (Note 5)	$R_{DS(ON)}$	—	—	20	Ω	V_{GS} = -10V, I_D = -150mA
On-State Drain Current (Note 5)	$I_{D(ON)}$	-300	—	—	mA	V_{DS} = -25V, V_{GS} = -10V
Forward Transconductance (Note 5)	gfs	50	—	—	mS	V_{DS} = -25V, I_D = -150mA
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	C_{iss}	—	—	50	pF	V_{DS} = -25V, V_{GS} = 0V, f = 1MHz
Output Capacitance	C_{oss}	—	—	15		
Reverse Transfer Capacitance	C_{rss}	—	—	5		
Turn-On Delay Time	$t_{D(ON)}$	—	—	8	ns	V_{DD} = -25V, I_D = -150mA
Turn-On Rise Time	t_R	—	—	8		
Turn-Off Delay Time	$t_{D(OFF)}$	—	—	8		
Turn-Off Fall Time	t_F	—	—	8		

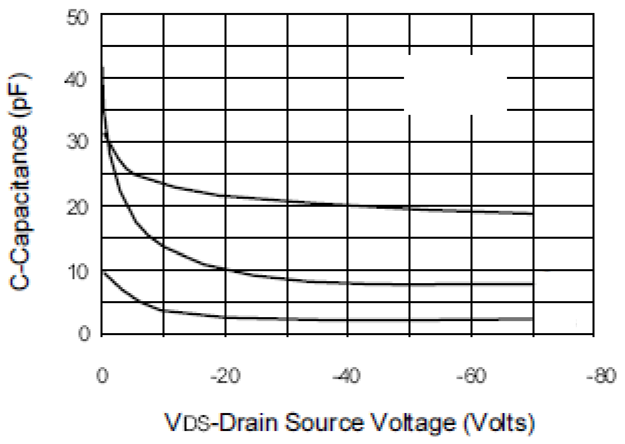
Notes:
5. Measured under pulsed conditions. Width = 300ms. Duty cycle <=2%.
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to product testing.

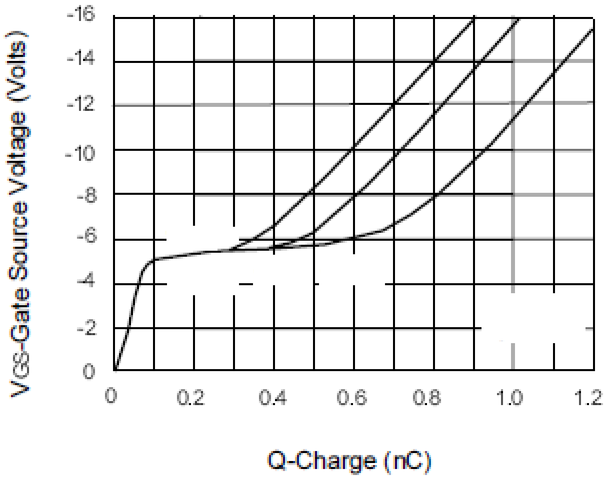


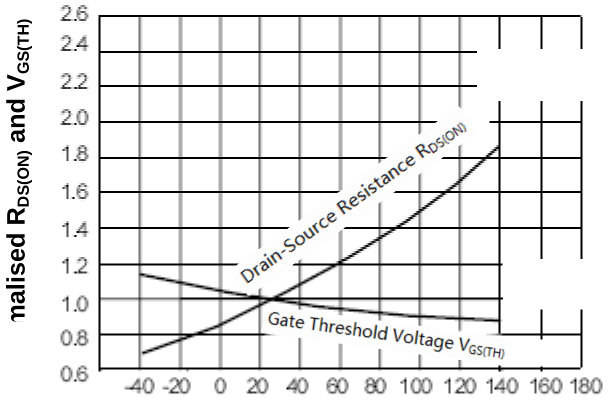


Saturation Characteristics **Voltage Saturation Characteristics**



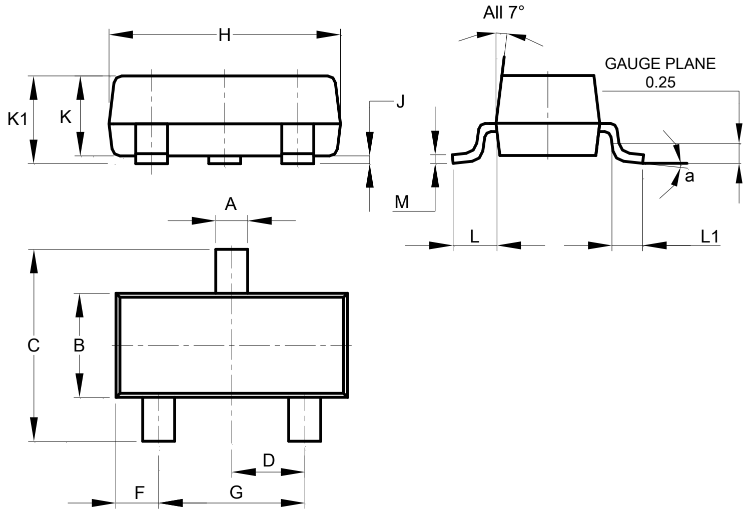






Package Outline Dimensions

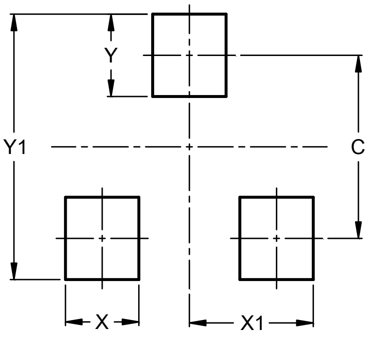
SOT23



SOT23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9