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

企业微信二维码　　企业QQ二维码

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Product Summary

BV$_{DSS}$	R$_{DS(on) Max}$	I$_{D Max}$ T_A = +25°C
-50V	10Ω @ V$_{GS}$ = -5V	-130mA

Features and Benefits

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed

Description and Applications

This MOSFET is designed to meet the stringent requirements of automotive applications. It is qualified to AEC-Q101, supported by a PPAP and is ideal for use in:

- General Purpose Interfacing Switch
- Power Management Functions
- Analog Switch

Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Terminal Connections: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363

Top View

Top View
Internal Schematic

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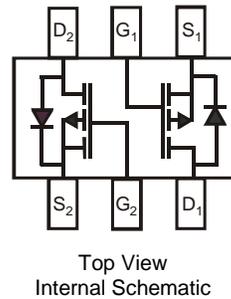
Maximum Ratings (@T$_A$ = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Drain-Source Voltage		V$_{DSS}$	-50	V
Drain-Gate Voltage (Note 5)		V$_{DGR}$	-50	V
Gate-Source Voltage	Continuous	V$_{GSS}$	±20	V
Drain Current (Note 6)	Continuous	I$_D$	-130	mA

Thermal Characteristics (@T$_A$ = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 6)	P$_D$	300	mW
Thermal Resistance, Junction to Ambient	R$_{θJA}$	417	°C/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
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV$_{DSS}$	-50	-75	—	V	V$_{GS}$ = 0V, I$_D$ = -250µA
Zero Gate Voltage Drain Current	I$_{DSS}$	—	—	-1	µA	V$_{DS}$ = -50V, V$_{GS}$ = 0V, T$_J$ = +25°C
		—	—	-2	µA	V$_{DS}$ = -50V, V$_{GS}$ = 0V, T$_J$ = +125°C
		—	—	-100	nA	V$_{DS}$ = -25V, V$_{GS}$ = 0V, T$_J$ = +25°C
Gate-Body Leakage	I$_{GSS}$	—	—	±10	nA	V$_{GS}$ = ±20V, V$_{DS}$ = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V$_{GS(th)}$	-0.8	-1.6	-2.0	V	V$_{DS}$ = V$_{GS}$, I$_D$ = -1mA
Static Drain-Source On-Resistance	R$_{DS(ON)}$	—	6	10	Ω	V$_{GS}$ = -5V, I$_D$ = -0.1A
Forward Transconductance	g$_{FS}$	0.05	—	—	S	V$_{DS}$ = -25V, I$_D$ = -0.1A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C$_{iss}$	—	—	45	pF	V$_{DS}$ = -25V, V$_{GS}$ = 0V, f = 1.0MHz
Output Capacitance	C$_{oss}$	—	—	25	pF	
Reverse Transfer Capacitance	C$_{rss}$	—	—	12	pF	
SWITCHING CHARACTERISTICS (Note 8)						
Turn-On Delay Time	t$_{D(ON)}$	—	10	—	ns	V$_{DD}$ = -30V, I$_D$ = -0.27A,
Turn-Off Delay Time	t$_{D(OFF)}$	—	18	—	ns	R$_{GEN}$ = 50Ω, V$_{GS}$ = -10V
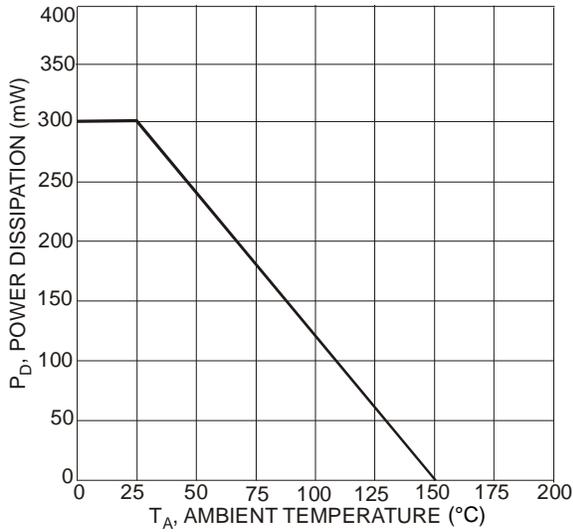
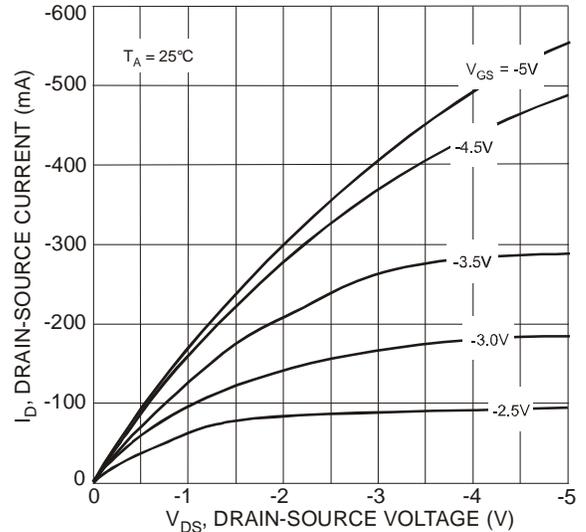Fig. 1 Max Power Dissipation vs. Ambient Temperature

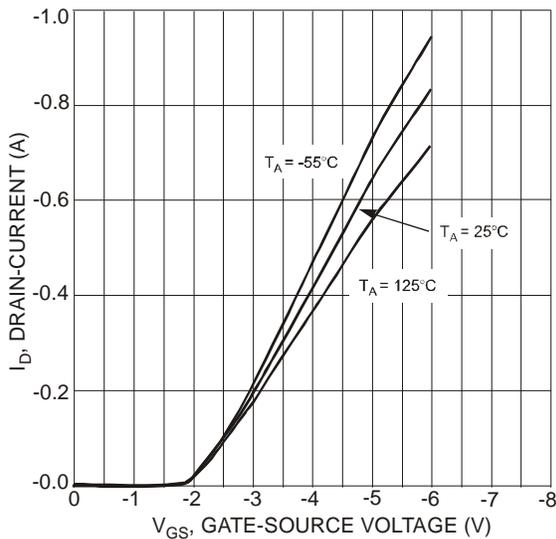Fig. 2 Drain-Source Current vs. Drain-Source Voltage
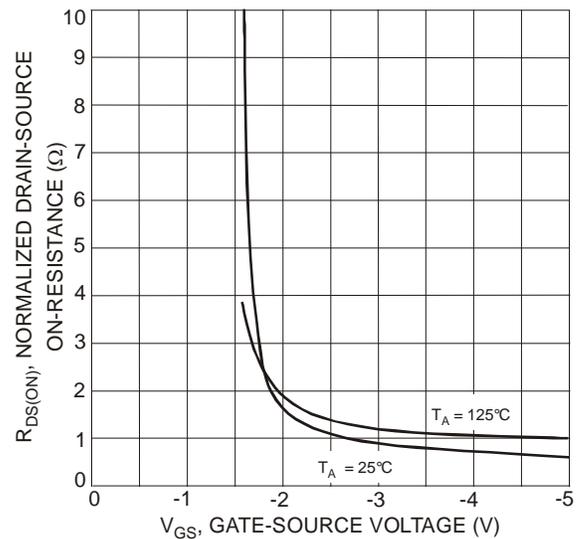
Fig. 3 Drain-Current vs. Gate-Source Voltage

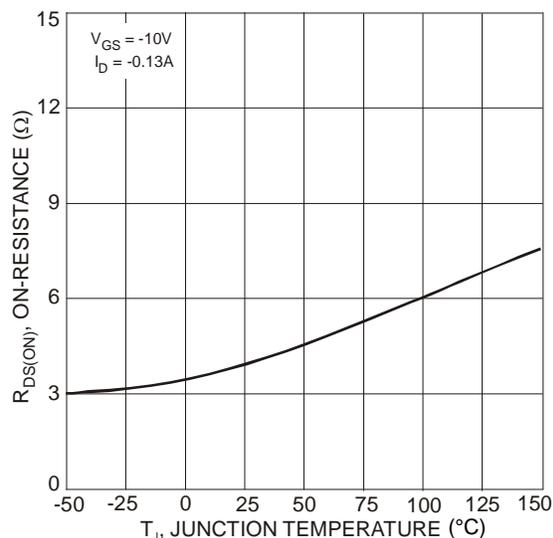Fig. 4 On-Resistance vs. Gate-Source Voltage

Fig. 5 On-Resistance vs. Junction Temperature

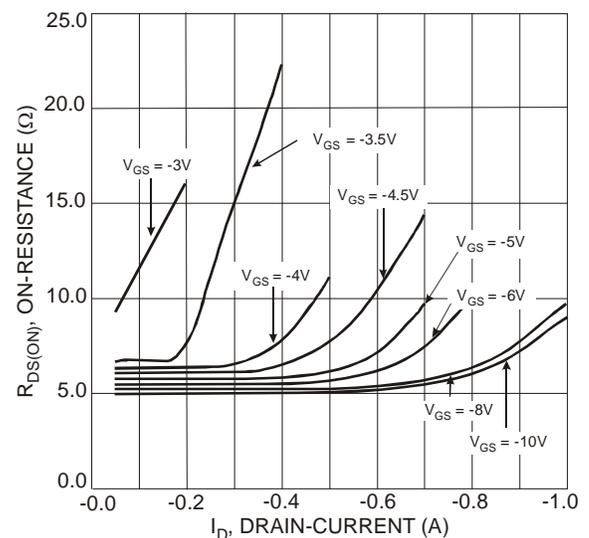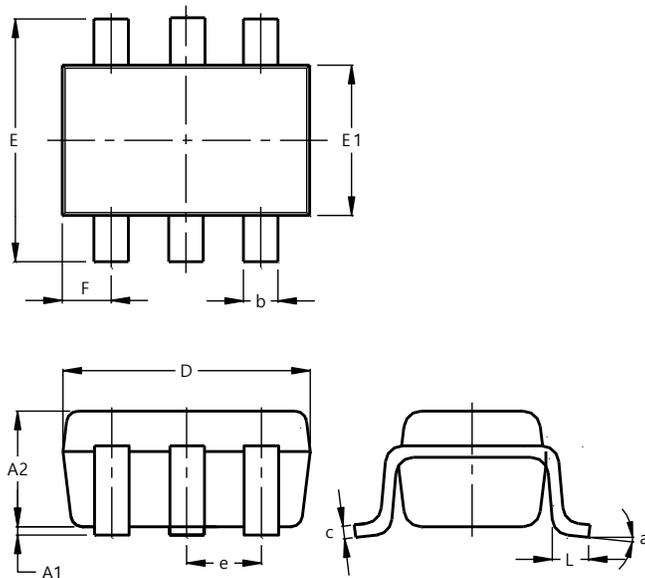Fig. 6 On-Resistance vs. Drain-Current

Package Outline Dimensions

SOT363

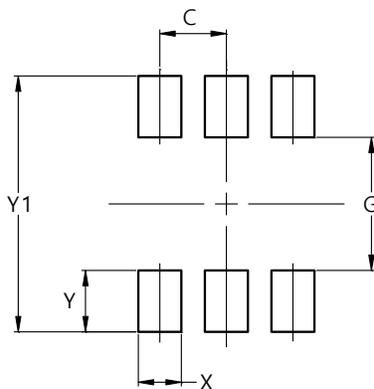| SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT363

Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500