

SOT-23 Plastic-Encapsulate MOSFETS

Features

- VDSS=50V
- ID=340mA
- RDS(on)@VGS=10V < 2.5Ω
- RDS(on)@VGS=4.5V < 3.0Ω
- Trench Power LV MOSFET technology
- High density cell design for low RDS(ON)
- High Speed switching

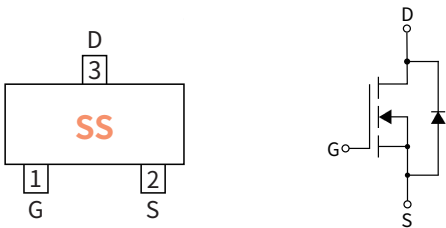
Applications

- Battery protection
- Load switch
- Power management

Mechanical Data

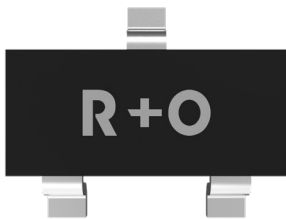
- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Drain-source Voltage
50 V
Drain Current
0.34 Ampere

SOT-23



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	VALUE
Drain-source Voltage		V_{DS}	V	50
Gate-source Voltage		V_{GS}	V	± 20
Drain Current	$T_A=25^{\circ}\text{C}$ @ Steady State	I_D	mA	340
	$T_A=70^{\circ}\text{C}$ @ Steady State			272
Pulsed Drain Current		I_{DM}	A	2.5
Total Power Dissipation		P_D	mW	350
Junction temperature		T_J	$^{\circ}\text{C}$	$-55 \sim +150$
Storage temperature		T_{stg}	$^{\circ}\text{C}$	$-55 \sim +150$
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	$^{\circ}\text{C} / \text{W}$	357

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

● Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	V	50	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$	μA	—	—	0.5
Gate-Body Leakage Current	I_{GSS1}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
	I_{GSS2}	$V_{GS}=\pm 10V, V_{DS}=0V$	nA	—	—	± 50
Gate Threshold Voltage ⁽¹⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.8	1.2	1.6
Static Drain-Source On-Resistance ⁽¹⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$	Ω	—	1.1	2.5
		$V_{GS}=4.5V, I_D=200mA$		—	1.2	3.0
Diode Forward Voltage	V_{SD}	$I_S=300mA, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	0.34

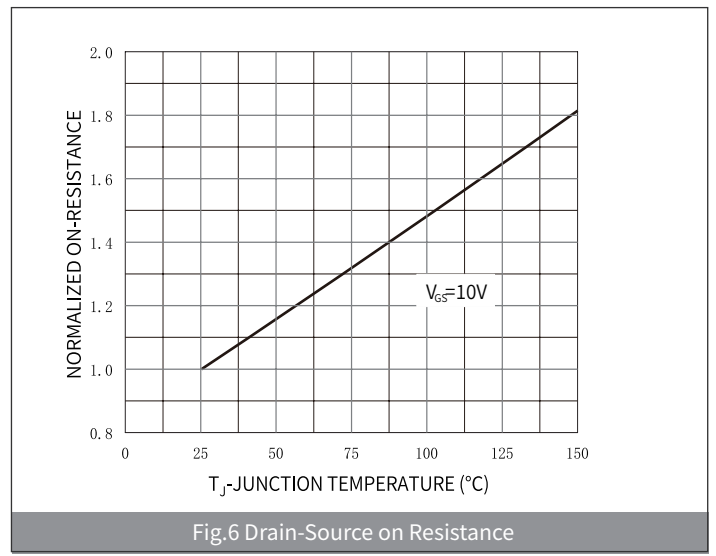
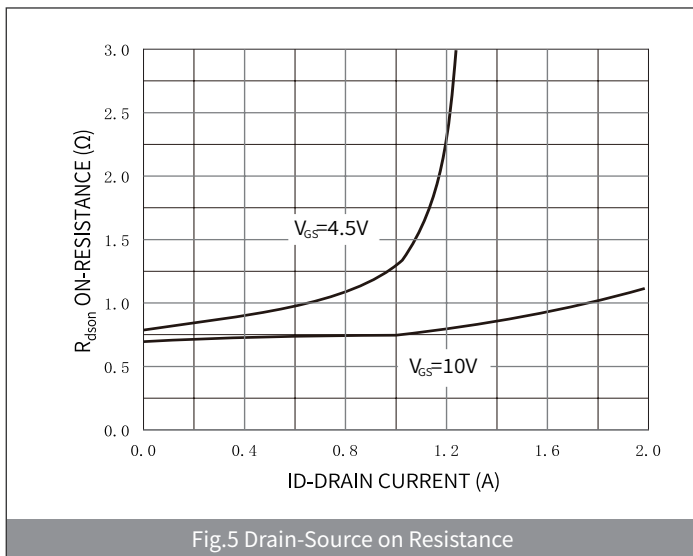
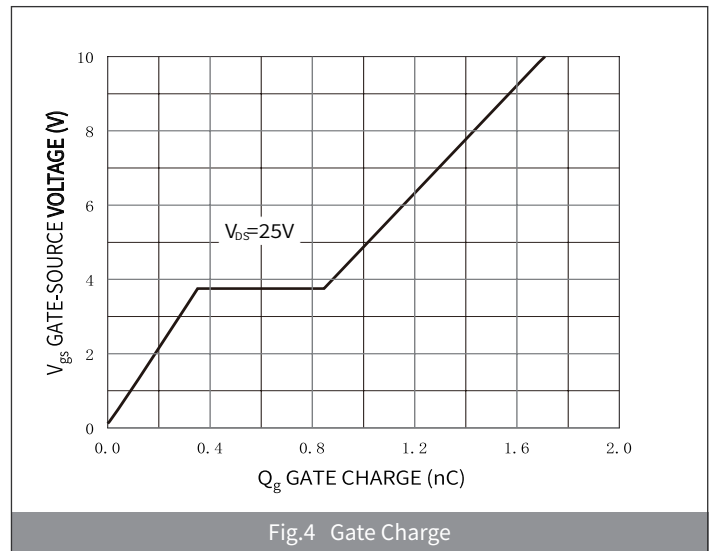
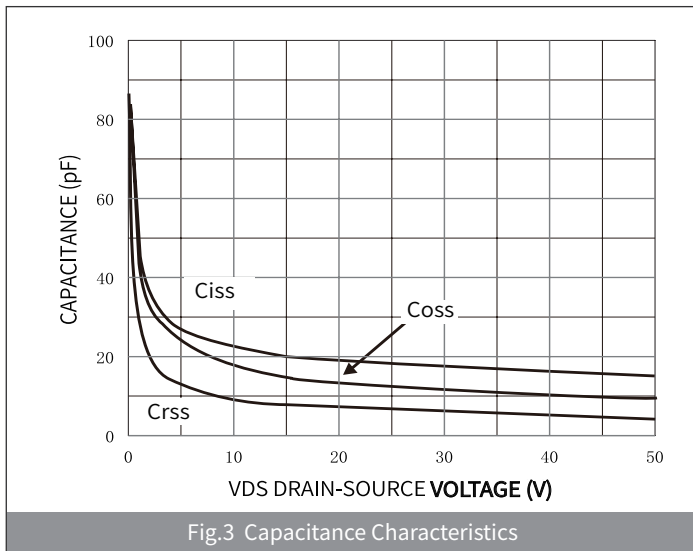
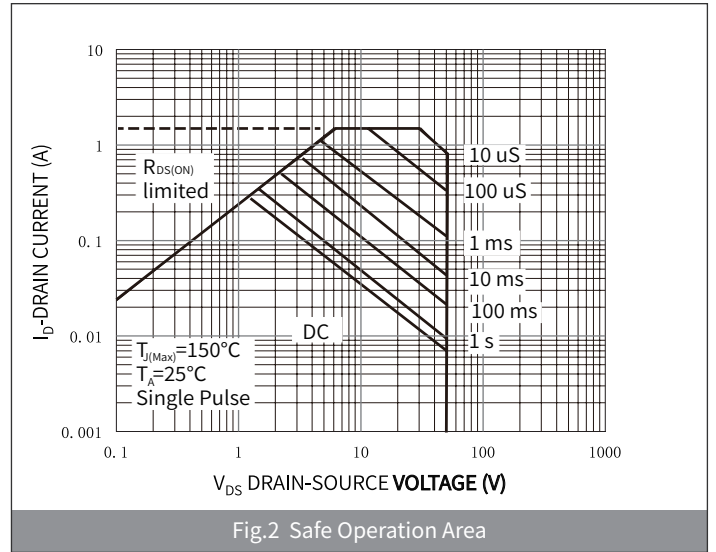
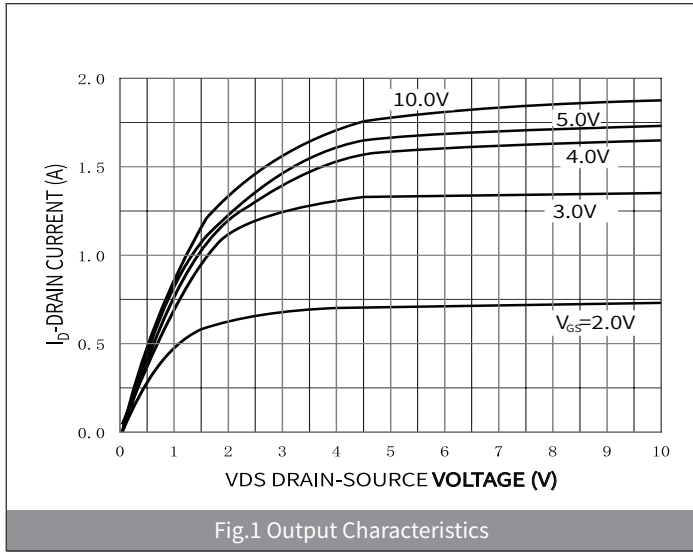
● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	pF	—	17.5	60
Output Capacitance	C_{oss}			—	11.5	15
Reverse Transfer Capacitance	C_{rss}			—	6.5	6.0

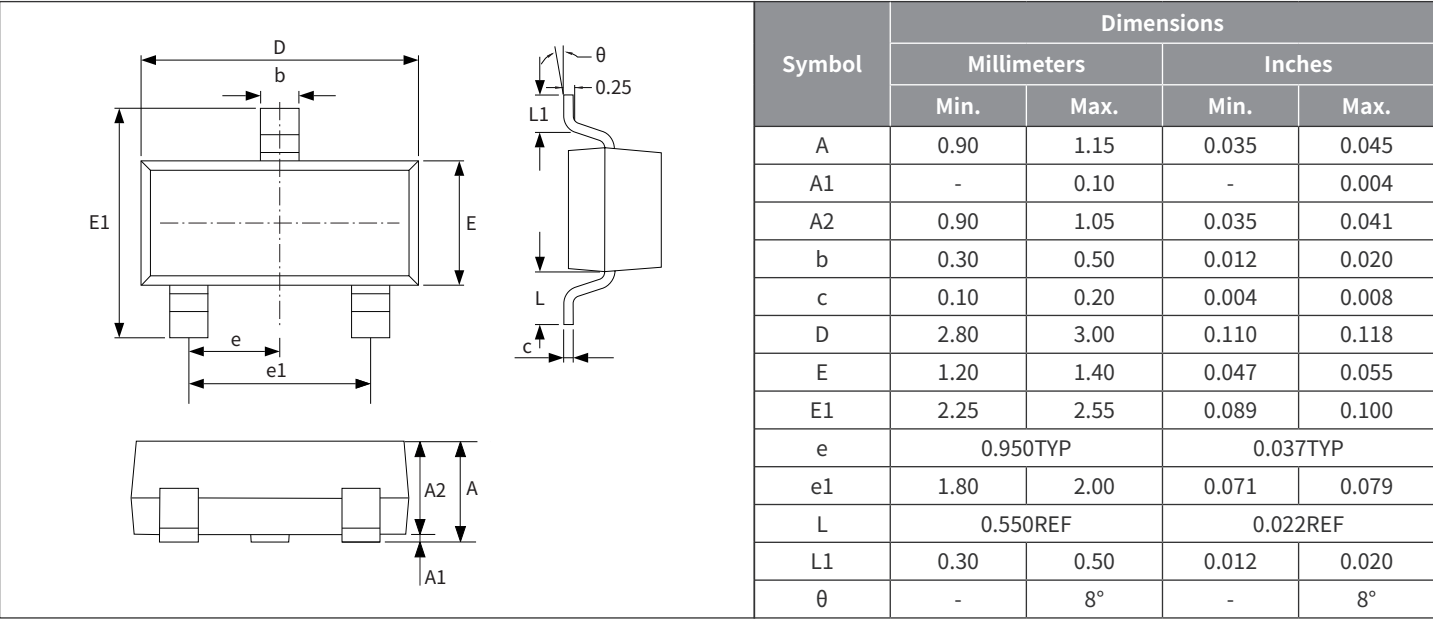
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=25V$ $I_D=0.3A$	nC	—	1.7	—
Gate-Source Charge	Q_{gs}			—	0.4	—
Gate-Drain Charge	Q_{gd}			—	0.224	—
Reverse Recovery Charge	Q_{rr}	$I_F=0.3A, di/dt=100A/us$	nC	—	2.65	—
Reverse Recovery Time	t_{rr}		nS	—	12.2	—
Turn-on Delay Time ⁽¹⁾⁽²⁾	$t_{D(on)}$	$V_{DD}=25V, V_{GS}=10V,$ $I_D=0.3A, R_{GEN}=6\Omega$	nS	—	2.6	—
Turn-on Rise Time ⁽¹⁾⁽²⁾	t_r			—	18.8	—
Turn-off Delay Time ⁽¹⁾⁽²⁾	$t_{D(off)}$			—	9.7	—
Turn-off fall Time ⁽¹⁾⁽²⁾	t_f			—	47	—

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

