

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=-30V$
- $I_D=-1.9A$
- $R_{DS(on)}@V_{GS}=-10V < 190m\Omega$
- $R_{DS(on)}@V_{GS}=-4.5V < 330m\Omega$
- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

Applications

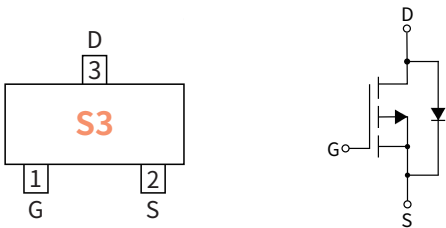
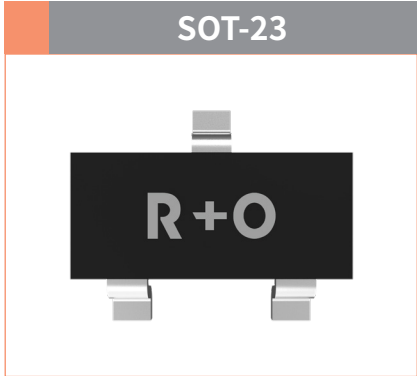
- Battery operated systems
- Solid-state relays
- Direct logic-level interface: TTL/CMOS

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

Reference News

Drain-source Voltage
-30 V
Drain Current
-1.9 Ampere



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

PARAMETER		SYMBOL	UNIT	VALUE
Drain-source Voltage		V_{DS}	V	-30
Gate-source Voltage		V_{GS}	V	± 20
Drain Current	$T_A=25^{\circ}C$ @ Steady State	I_D	A	-1.9
Continuous Source-Drain Diode Current		I_S	A	-0.83
Total Power Dissipation @ $T_A=25^{\circ}C$		P_D	W	0.35
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾		$R_{\theta JA}$	$^{\circ}C / W$	357
Junction and Storage Temperature Range		T_J, T_{STG}	$^{\circ}C$	-55 ~+150

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	-30	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	μA	—	—	-1
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-1	-1.6	-3
Static Drain-Source On-Resistance ⁽¹⁾	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-1.9A$	Ω	—	0.075	0.19
		$V_{GS}=-4.5V, I_D=-1.4A$		—	0.115	0.33
Forward Transconductance ⁽¹⁾	g_{fs}	$V_{DS}=-5V, I_D=-1.9A$	S	1	—	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$	pF	—	155	—
Output Capacitance	C_{oss}			—	35	—
Reverse Transfer Capacitance	C_{rss}			—	25	—

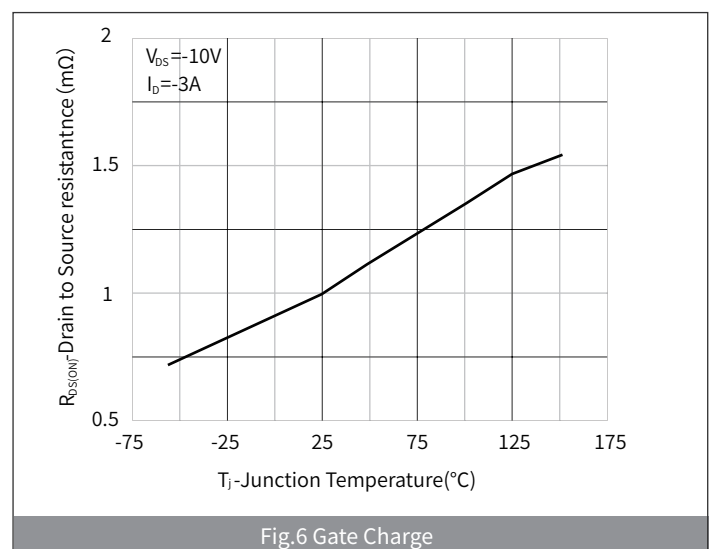
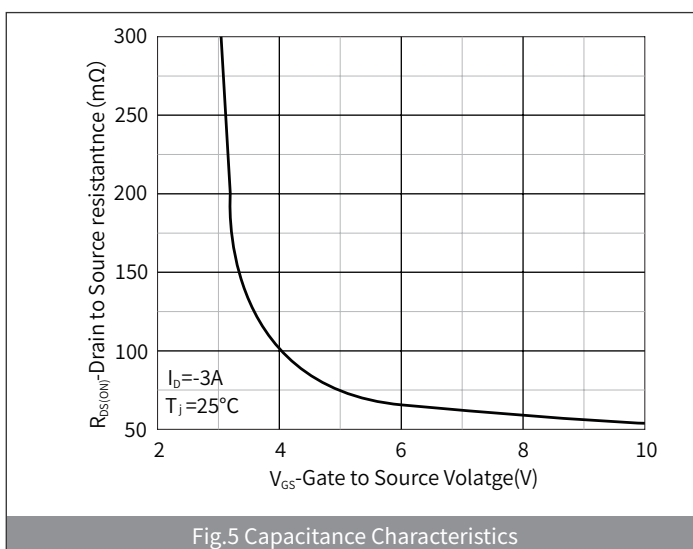
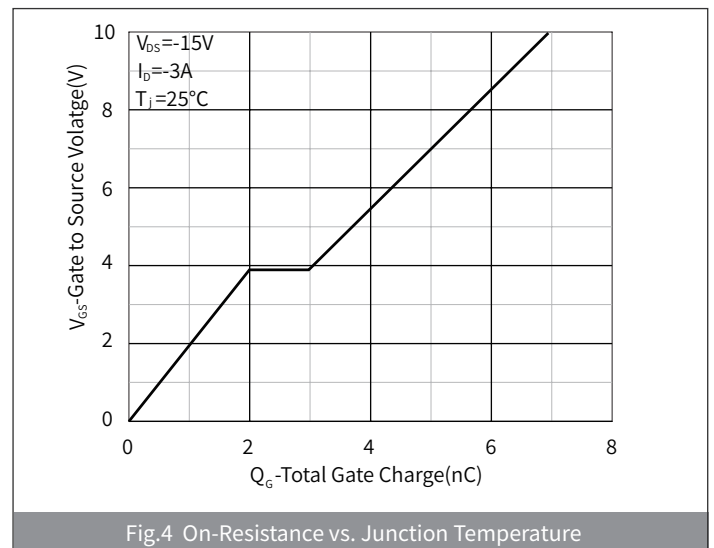
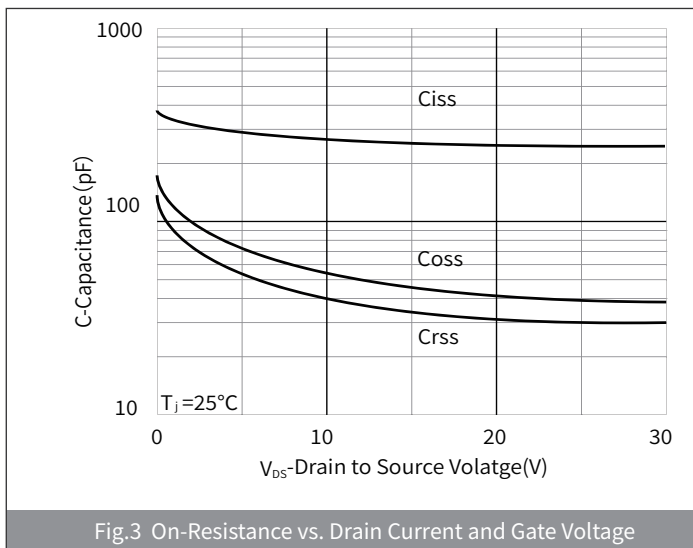
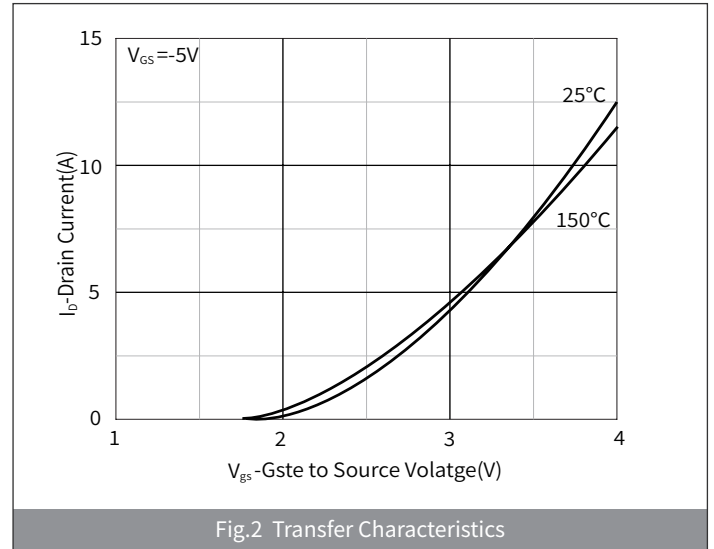
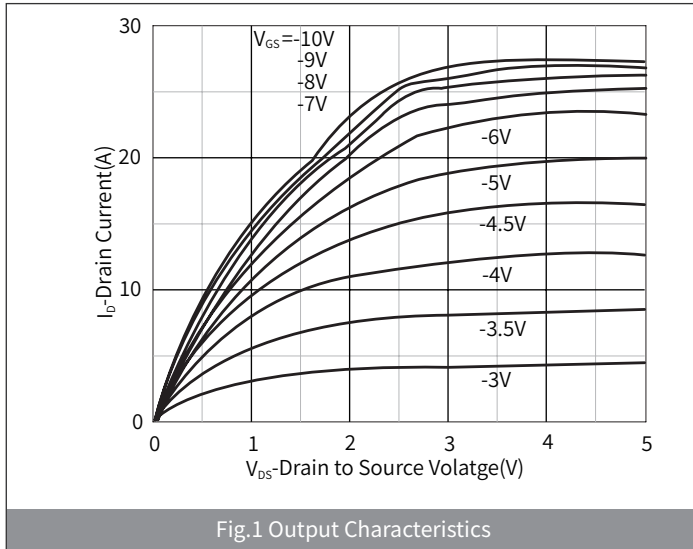
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q _g	V _{GS} =-10V,V _{DS} =-15V,I _D =-1.9A	nC	—	4	8
		V _{GS} =-4.5V,V _{DS} =-15V,I _D =-1.9A			2	4
Gate-Source Charge	Q _{gs}			—	0.6	—
Gate-Drain Charge	Q _{gd}			—	1	—
Reverse Recovery Chrage	Q _{rr}	I _F =-3A, di/dt=100A/us	nC	—	4	—
Reverse Recovery Time	t _{rr}		ns	—	24.5	—
Gate Resistance	R _g	f=1MHz	Ω	1.7	8.5	17
Turn-on Delay Time	t _{D(on)}	V _{GS} =-15V, V _{GEN} =-4.5V, I _D =-1.5A R _L =10Ω ,R _g =1Ω	ns	—	36	44
Turn-on Rise Time	t _r			—	37	45
Turn-off Delay Time	t _{D(off)}			—	12	18
Turn-off fall Time	t _f			—	9	14

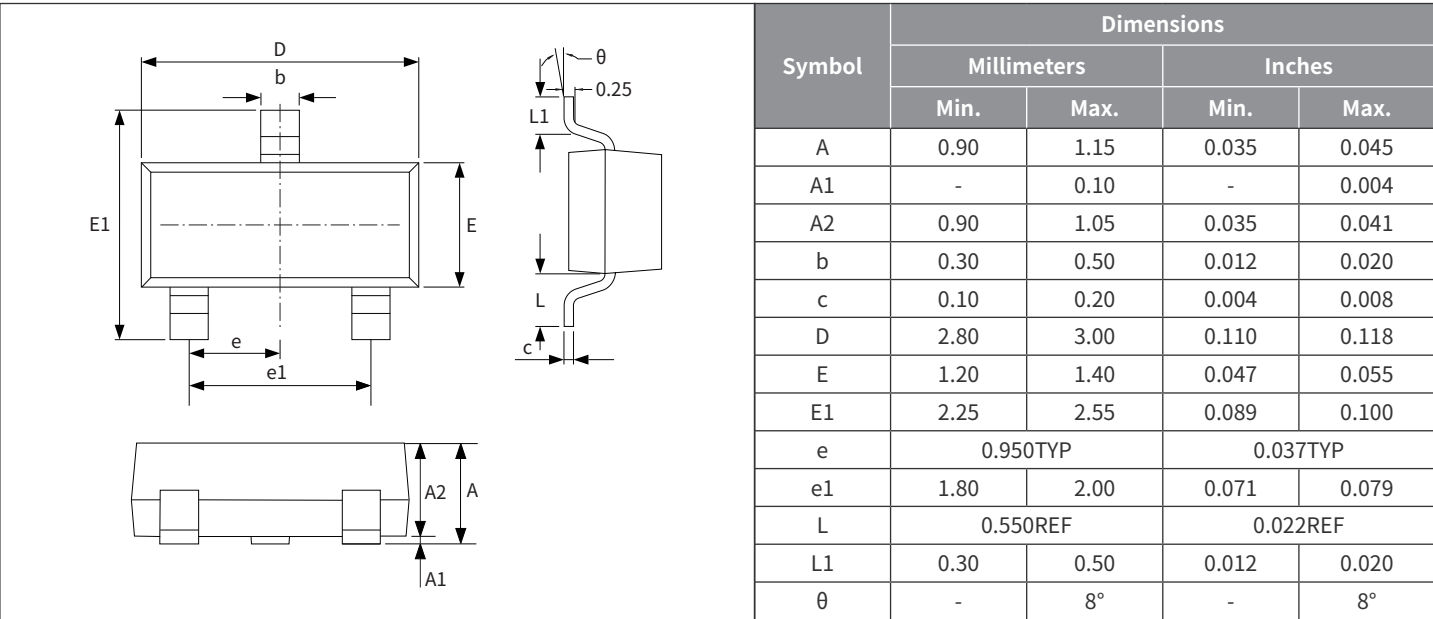
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Continuous Source-Drain Diode Current	I_S	$T_c=25^\circ C$	A	—	—	-1.75
Pulse Diode Forward Current	I_{SM}	—		—	—	-10
Body Diode Voltage	V_{SD}	$I_S=-1.5A$	V	—	-0.8	-1.2

● **Ratings And Characteristics Curves** ($T_a=25^\circ\text{C}$ Unless otherwise specified)



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

