

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 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

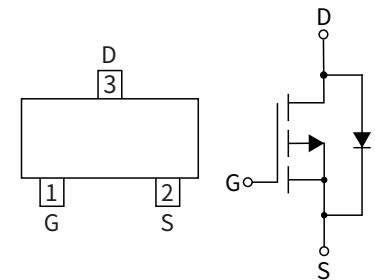
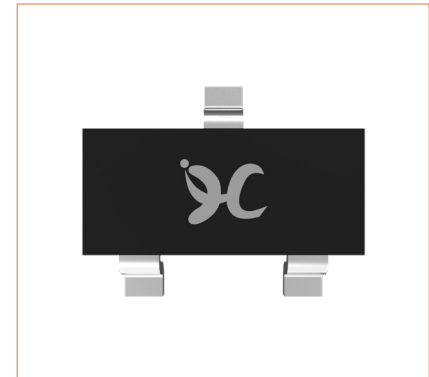
Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	-30
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	A	-1.9
Continuous Source-Drain Diode Current	I_S	A	-0.83
Total Power Dissipation	P_D	W	0.35
Junction and Storage Temperature Range	T_j	°C	-55 ~ +150
	T_{stg}		-50 ~ +150
Thermal Resistance Junction-to-Ambient	$R_{\theta J-A}$	°C/W	357

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	120000	7"

SOT-23



▶ 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}	$V_{DS}=-20V, V_{GS}=0V$	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⁾	$R_{DS(on)}$	$V_{GS}=-10, I_D=-1.9A$	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 Charge	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	$t_{D(on)}$	$V_{GS}=-15V, V_{GEN}=-4.5V, I_D=-1.5A$ $R_L=10\Omega, R_g=1\Omega$	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

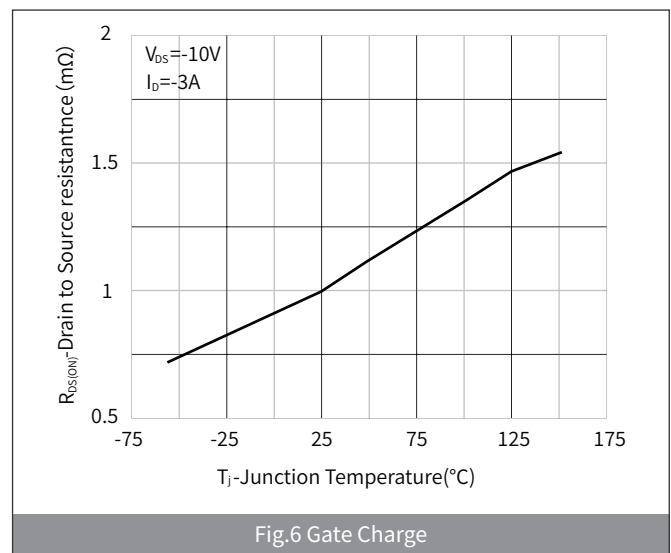
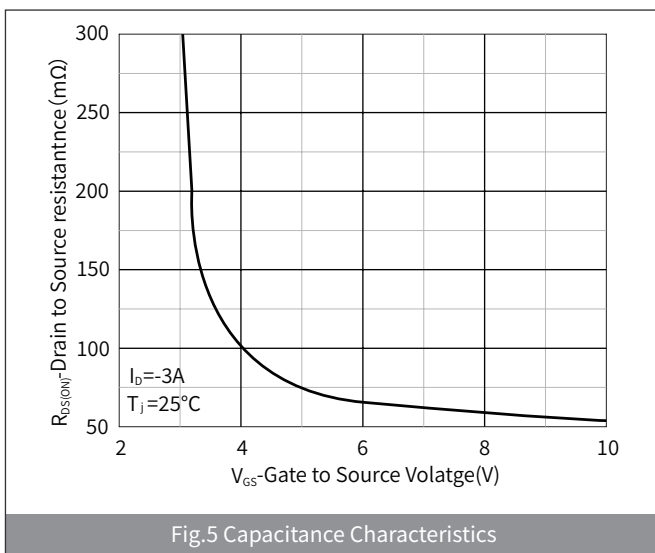
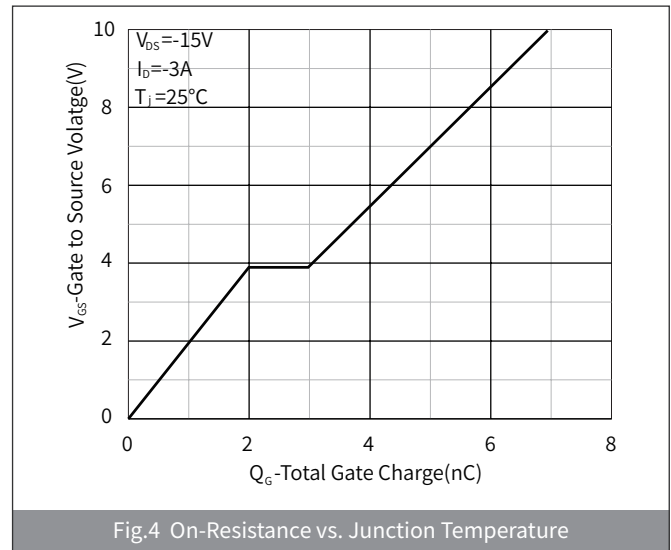
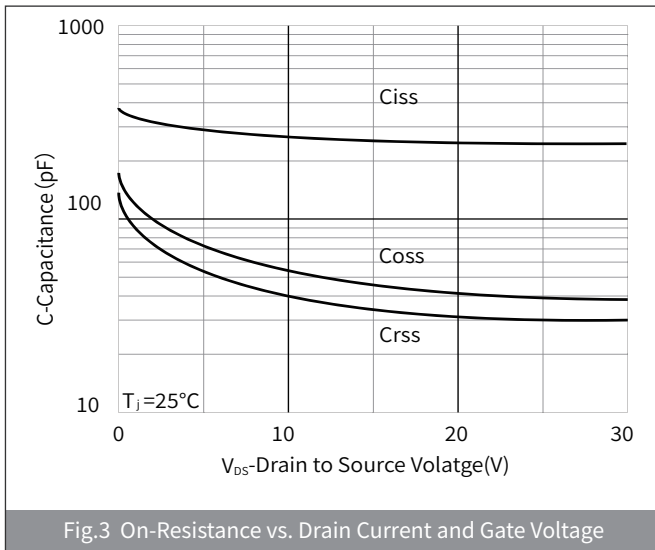
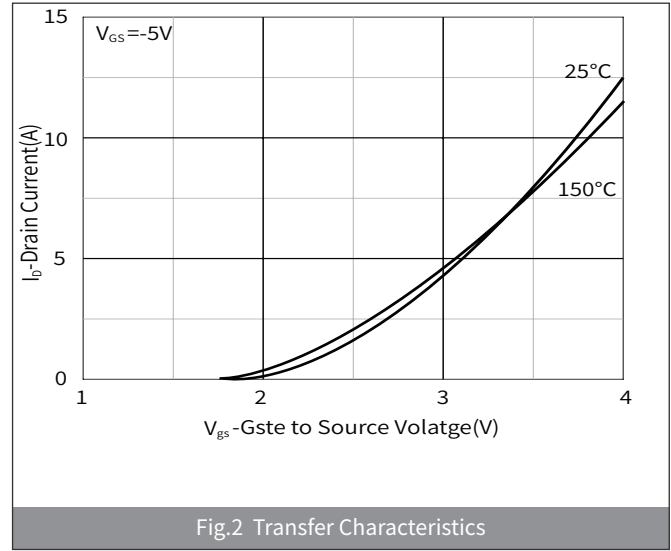
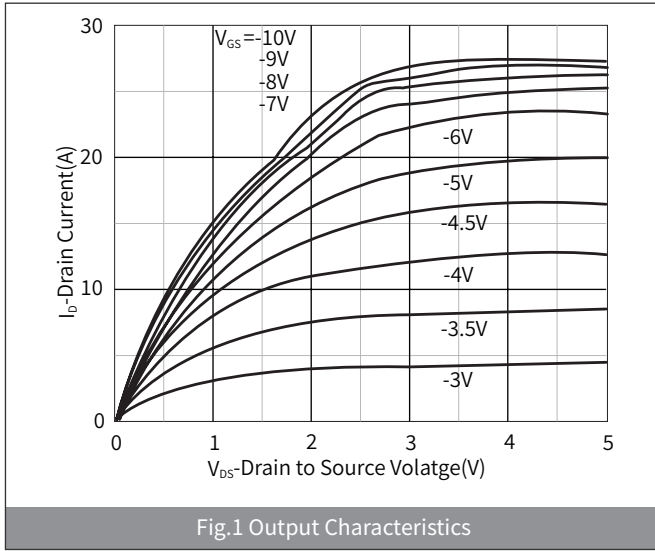
▶ Drain-source Body diode characteristics (Ta=25°C Unless otherwise specified)

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

Note :

 (1) Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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



► Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

► Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074

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