

## Features

- $V_{DS}=100V$
- $I_D=200mA$
- $R_{DS(on)}@V_{GS}=10V < 5.0\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 5.5\Omega$
- 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	100
Gate-source Voltage		$V_{GS}$	V	$\pm 20$
Drain Current	$T_A=25^\circ C$ @ Steady State	$I_D$	mA	200
	$T_A=70^\circ C$ @ Steady State			160
Pulsed Drain Current <sup>(1)</sup>		$I_{DM}$	mA	800
Total Power Dissipation @ $T_A=25^\circ C$		$P_D$	mW	350
Thermal Resistance Junction-to-Ambient @ Steady State <sup>(2)</sup>		$R_{\theta JA}$	$^\circ C / W$	357
Storage temperature	$T_{stg}$	$^\circ C$	—	-55 ~ +150
Junction temperature	$T_j$	$^\circ C$	—	-55 ~ +150

Note :

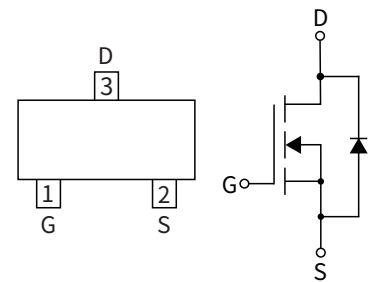
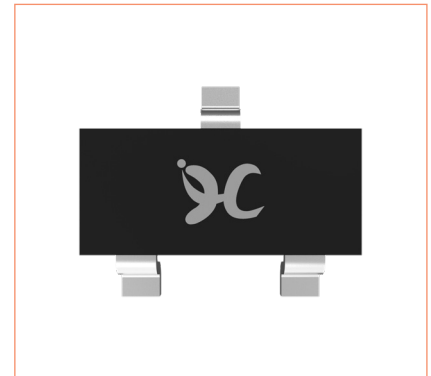
(1). Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .

(2). Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

## 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	100	—	—
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$	$\mu A$	—	—	1
Gate-Body Leakage Current	$I_{GSS1}$	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	$\pm 100$
	$I_{GSS2}$	$V_{GS}=\pm 10V, V_{DS}=0V$	nA	—	—	$\pm 50$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	1.0	1.8	2.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=200mA$	$\Omega$	—	3.0	5.0
		$V_{GS}=4.5V, I_D=200mA$		—	3.5	5.5
Diode Forward Voltage	$V_{SD}$	$I_S=200mA, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	$I_S$	—	mA	—	—	200

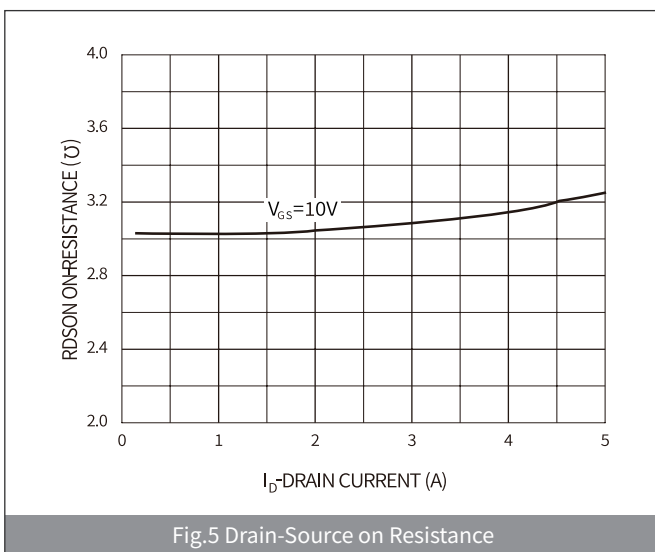
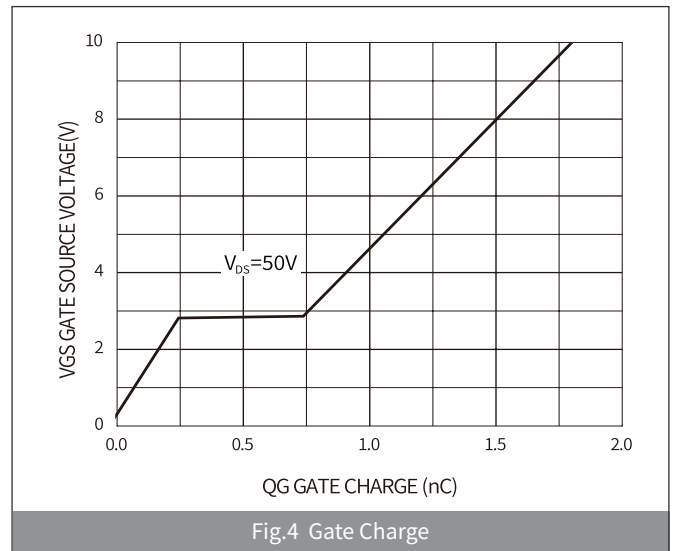
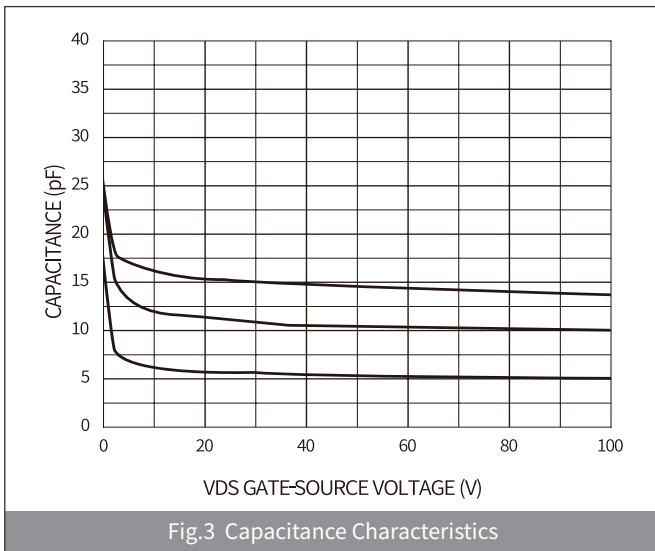
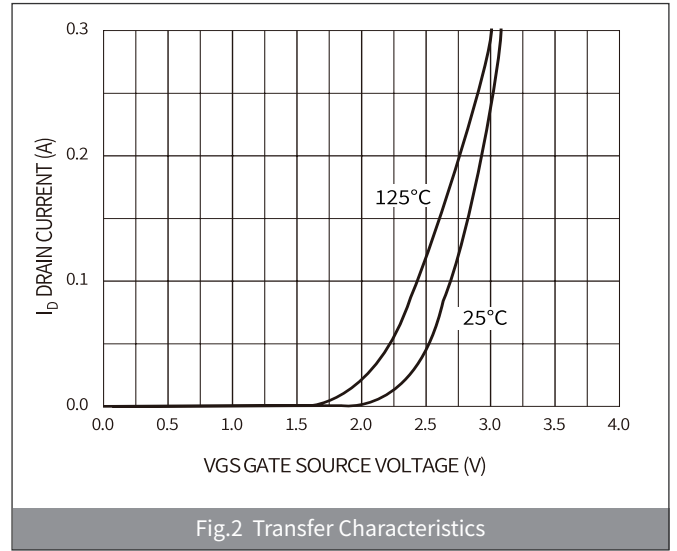
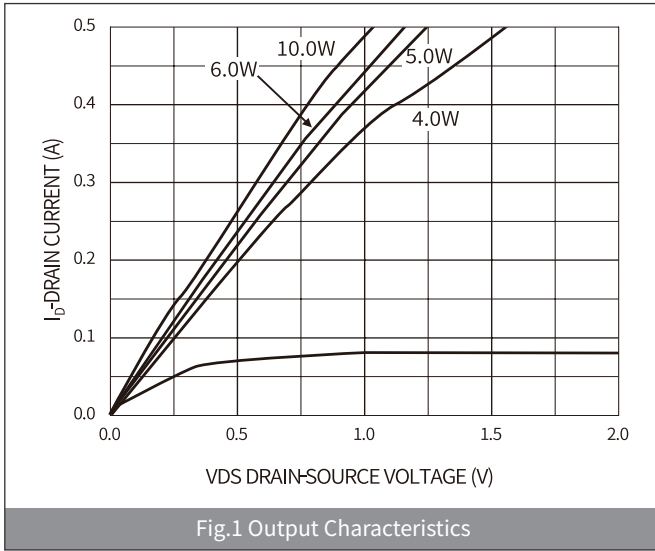
**▶ Dynamic Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$	pF	—	32	—
Output Capacitance	$C_{oss}$			—	10	—
Reverse Transfer Capacitance	$C_{rss}$			—	7	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=10V, I_D=0.22A$	nC	—	1.4	2.0
Gate-Source Charge	$Q_{gs}$			—	0.15	0.25
Gate-Drain Charge	$Q_{gd}$			—	0.2	0.4
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=30V, I_D=0.28A, R_{GEN}=50\Omega$		—	2.5	—
Turn-on Rise Time	$t_r$			—	1.0	—
Turn-off Delay Time	$t_{D(off)}$			—	16	—
Turn-off fall Time	$t_f$			—	8.0	—

► **Ratings And Characteristics Curves** ( $T_a=25^{\circ}\text{C}$  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
$\theta$	-	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