

Features

- $V_{DS}=50V$
- $I_D=340mA$
- $R_{DS(on)}@V_{GS}=10V < 2.5\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 3.0\Omega$
- 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	50
Gate-source Voltage		V_{GS}	V	± 20
Drain Current	$T_A=25^\circ C$ @ Steady State	I_D	mA	340
	$T_A=70^\circ C$ @ Steady State			272
Pulsed Drain Current ⁽¹⁾		I_{DM}	A	2.5
Total Power Dissipation @ $T_A=25^\circ C$		P_D	mW	350
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾		$R_{\theta JA}$	$^\circ C / W$	357
Storage temperature		T_{STG}	$^\circ C$	-55 ~ +150
Junction temperature		T_j	$^\circ C$	-55 ~ +150

Note :

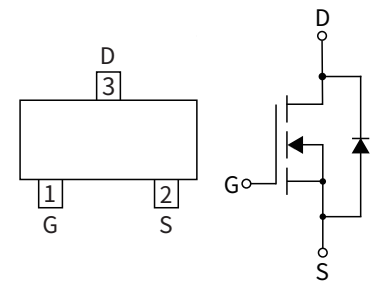
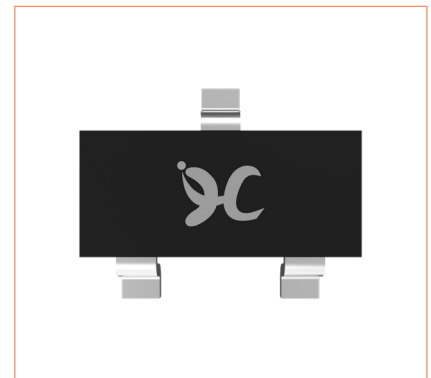
(1). Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

(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	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	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.8	1.2	1.6
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$	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	—	mA	—	—	340

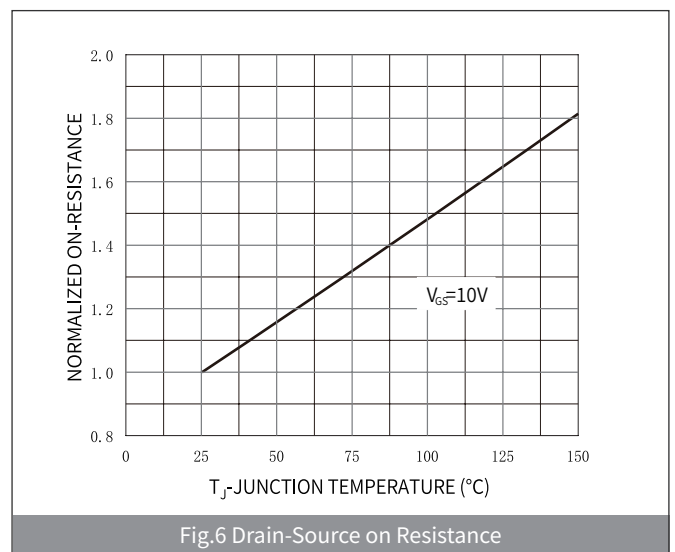
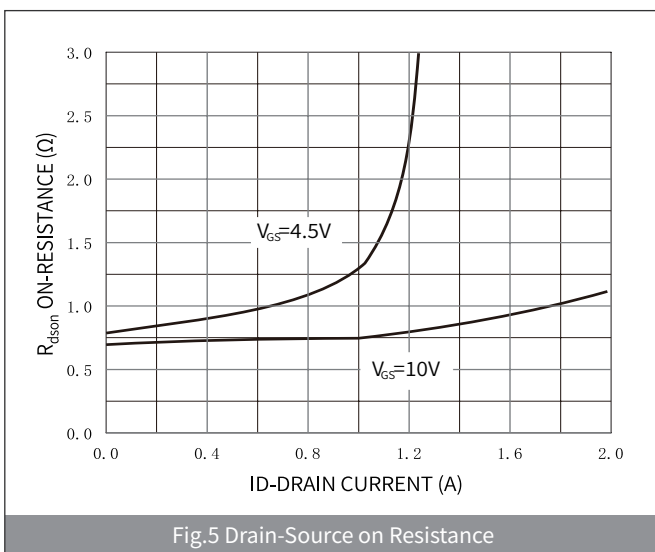
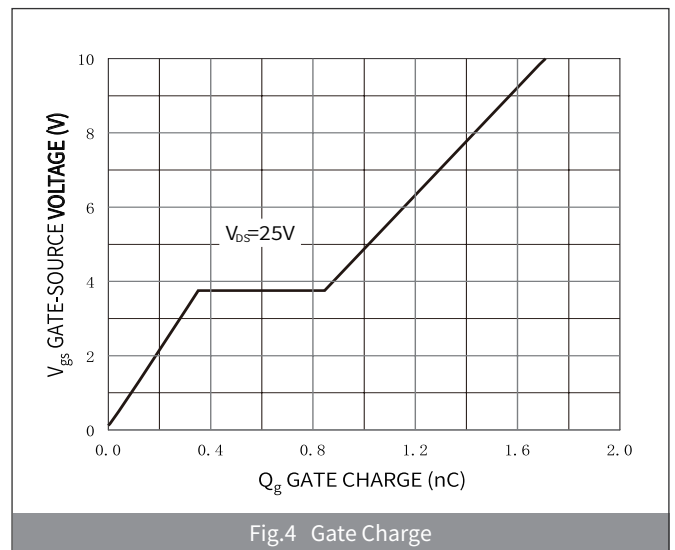
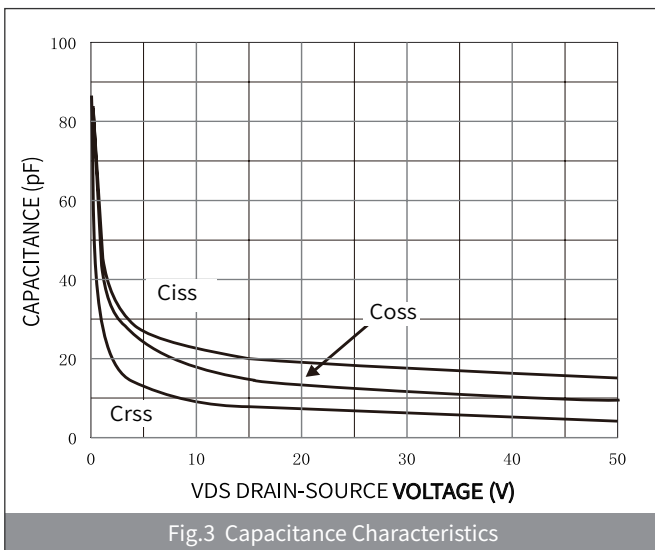
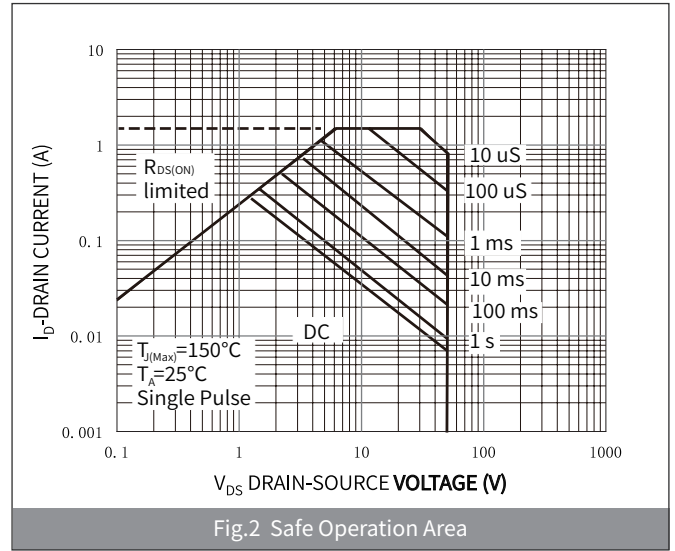
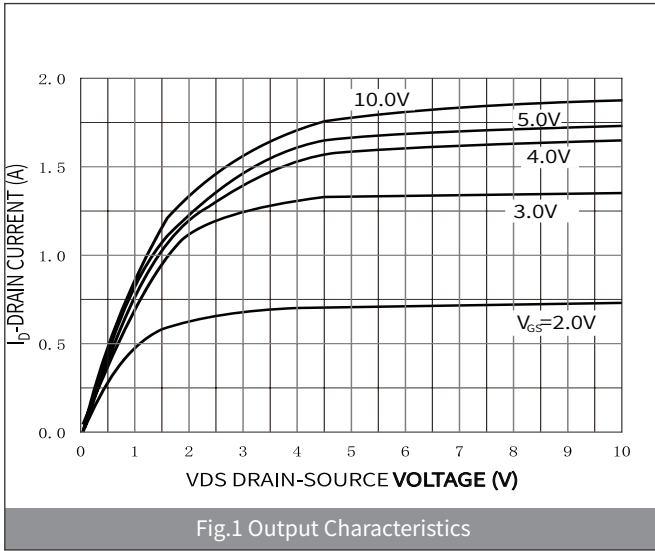
Dynamic Parameters (Ta=25°C Unless otherwise specified)

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

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}	$I_F=0.3A, di/dt=-100A/us$		—	2.65	—
Reverse Recovery Time	t_{rr}			—	12.2	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=25V, I_D=300mA, R_{GEN}=6\Omega$	ns	—	2.6	—
Turn-on Rise Time	t_r			—	18.8	—
Turn-off Delay Time	$t_{D(off)}$			—	9.7	—
Turn-off fall Time	t_f			—	47	—

► **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