

## Features

- $V_{DS}=60V$
- $I_D=340mA$
- $R_{DS(on)}@V_{GS}=10V < 2.5\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 3.0\Omega$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Fast Switching Speed

## 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

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

PARAMETER		SYMBOL	UNIT	VALUE
Drain-source Voltage		$V_{DS}$	V	60
Gate-source Voltage		$V_{GS}$	V	$\pm 20$
Drain Current	$T_A=25^\circ C$ @ Steady State	$I_D$	mA	340
	$T_A=70^\circ C$ @ Steady State			272
Pulsed Drain Current <sup>(1)</sup>		$I_{DM}$	A	1.5
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
Junction and Storage Temperature Range		$T_J, T_{STG}$	$^\circ C$	-55 ~ +150

Note :

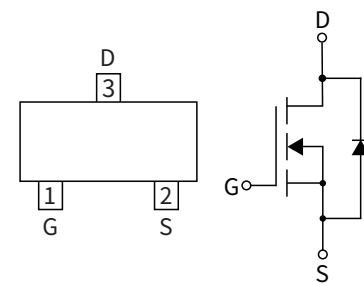
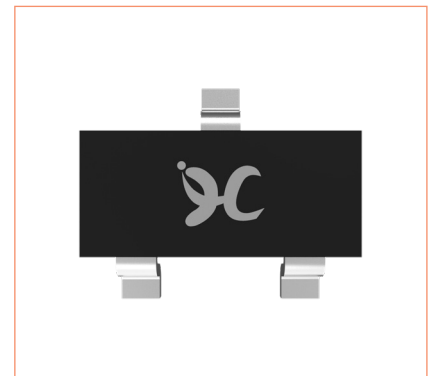
(1) Pulse test ; Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$

(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	60	—	—
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	$\mu A$	—	—	1
Gate-Body Leakage Current	$I_{GSS1}$	$V_{GS}=\pm 30V, V_{DS}=0V$	nA	—	—	$\pm 100$
	$I_{GSS2}$	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	$\pm 50$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	1	1.5	2.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$	$\Omega$	—	1.2	2.5
		$V_{GS}=4.5V, I_D=200mA$		—	1.3	3.0
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=200mA$	ms	80	—	—
Diode Forward Voltage	$V_{SD}$	$I_S=300mA, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	$I_S$	—	mA	—	—	340

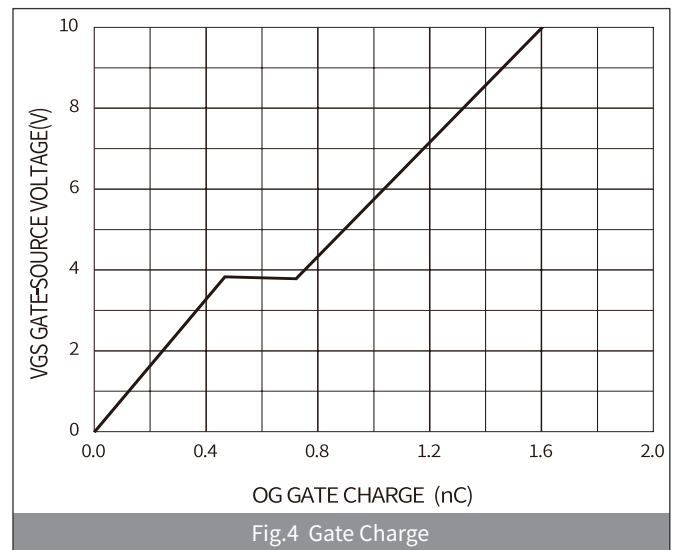
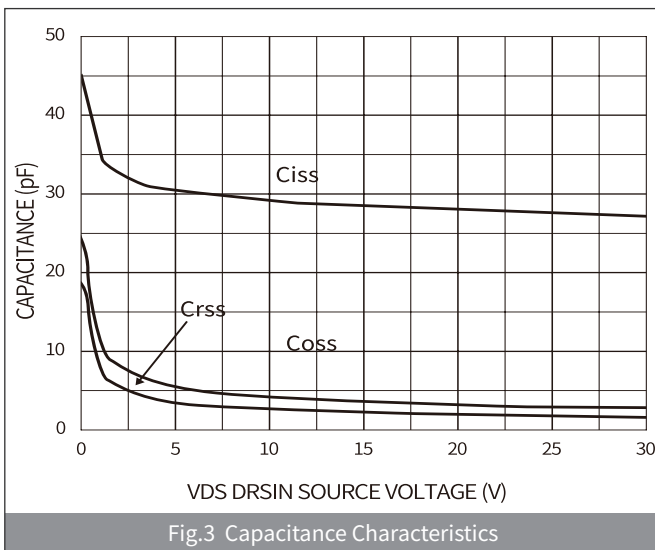
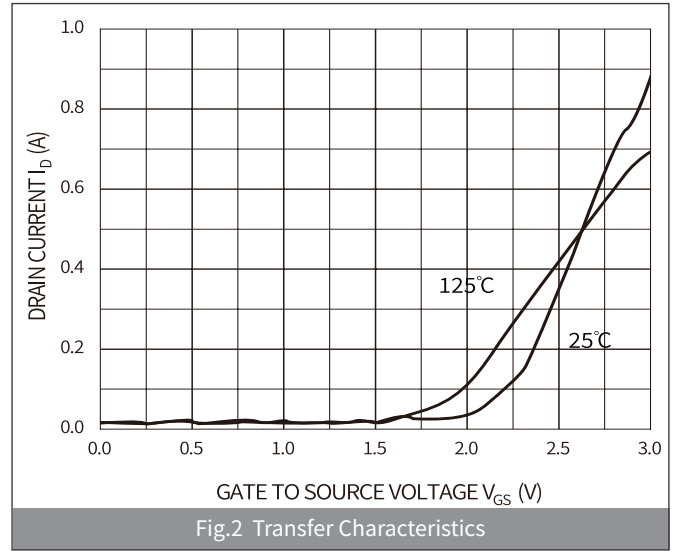
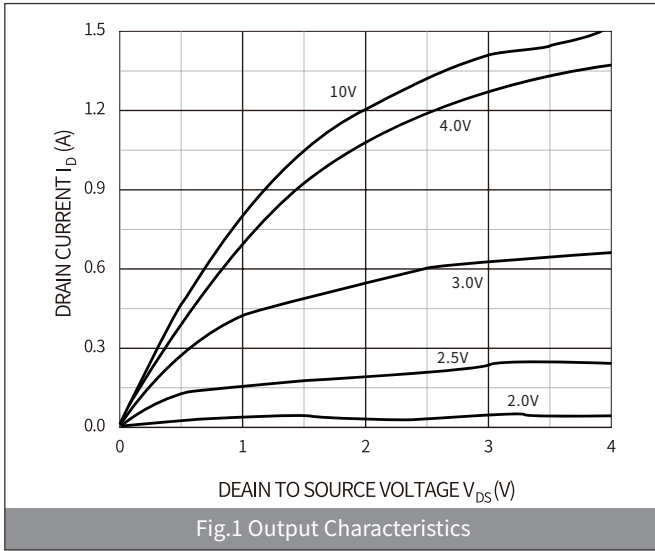
**▶ Dynamic Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V, f=1MHz$	pF	—	27.5	—
Output Capacitance	$C_{oss}$			—	2.75	—
Reverse Transfer Capacitance	$C_{rss}$			—	1.9	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=30V, I_D=0.3A$	nC	—	1.6	—
Gate-Source Charge	$Q_{gs}$			—	0.47	—
Gate-Drain Charge	$Q_{gd}$			—	0.25	—
Reverse Recovery Charge	$Q_{rr}$	$I_F=0.3A, di/dt=-100A/us$		—	2.5	—
Reverse Recovery Time	$t_{rr}$			—	11.5	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=30V, I_D=300mA, R_{GEN}=6\Omega$	ns	—	3.3	—
Turn-on Rise Time	$t_r$			—	19	—
Turn-off Delay Time	$t_{D(off)}$			—	9.6	—
Turn-off fall Time	$t_f$			—	49	—

► **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	1.10	0.035	0.043
A1	-	0.10	-	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.40	0.006	0.016
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.45	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.20	1.40	0.047	0.055
L	0.525REF		0.021REF	
L1	0.26	0.46	0.010	0.018
$\theta$	-	8°	-	8°

**► Suggested Pad Layout**

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.70	-	0.027	-
K	-	0.90	-	0.035
M	1.90	-	0.074	-
N	-	1.3	-	0.051