

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=30V$
- $I_D=2.5A$
- $R_{DS(on)}@V_{GS}=10V < 50m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 58m\Omega$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Fast Switching Speed

Applications

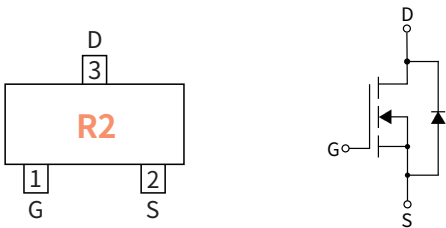
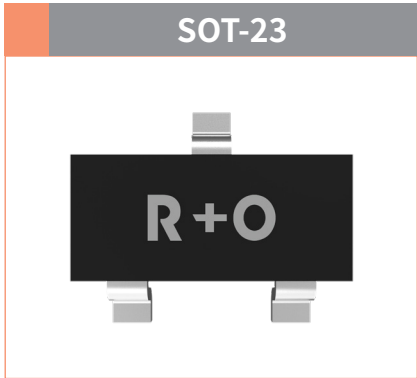
- Battery operated systems
- Solid-state relays
- Direct logic-level interface: TTL/CMOS

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

Reference News

Drain-source Voltage
30 V
Drain Current
2.5 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	± 12
Drain Current	$T_A=25^{\circ}C$ @ Steady State	I_D	A	2.5
Pulsed Drain Current		I_{DM}	A	16
Total Power Dissipation @ $T_A=25^{\circ}C$		P_D	W	1.0
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	$^{\circ}C / W$	125
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}	$V_{DS}=24V, V_{GS}=0V$	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.65	0.9	1.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.5A$	m Ω	—	35	50
		$V_{GS}=4.5V, I_D=2.5A$		—	38	58
		$V_{GS}=2.5V, I_D=2.5A$		—	50	90
Forward Transconductance	g_{fs}	$V_{DS}=5.0V, I_D=4.0A$	S	—	8.0	—
Diode Forward Voltage	V_{SD}	$I_S=1.0A, V_{GS}=0V$	V	—	—	1.0

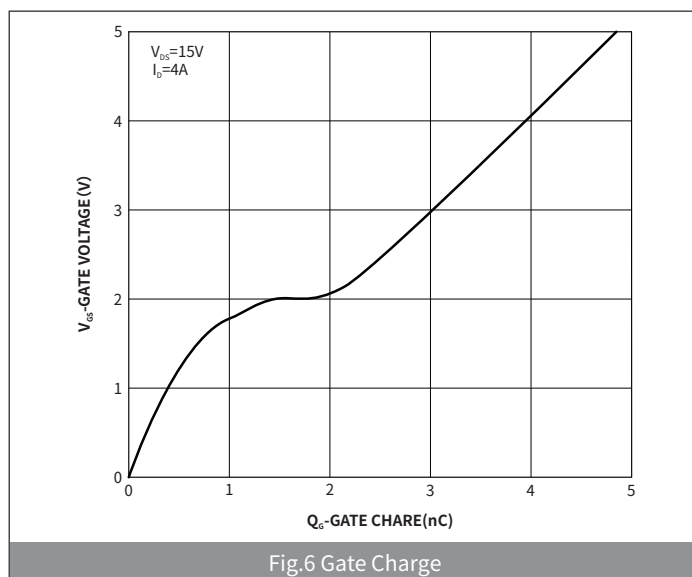
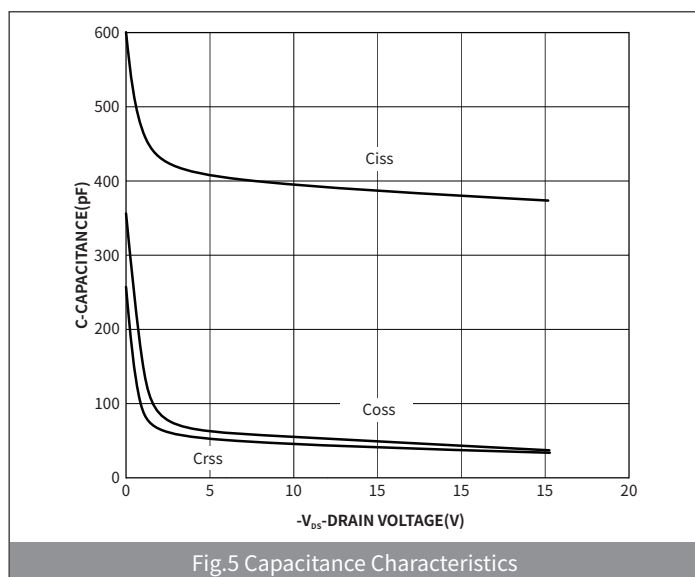
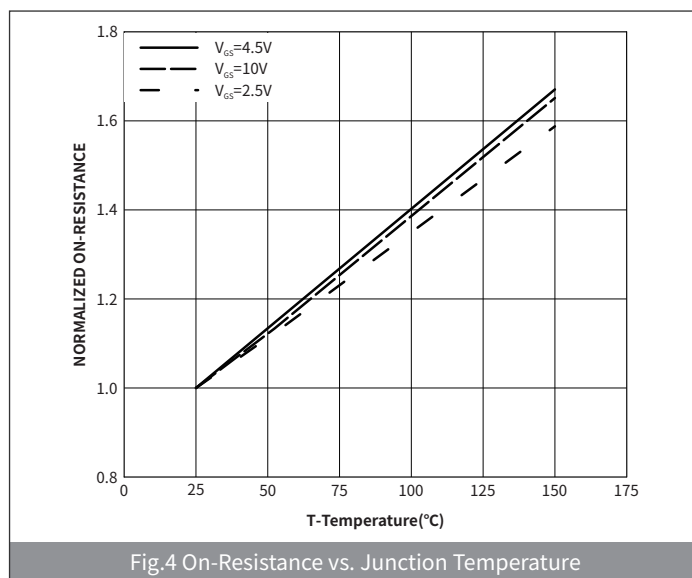
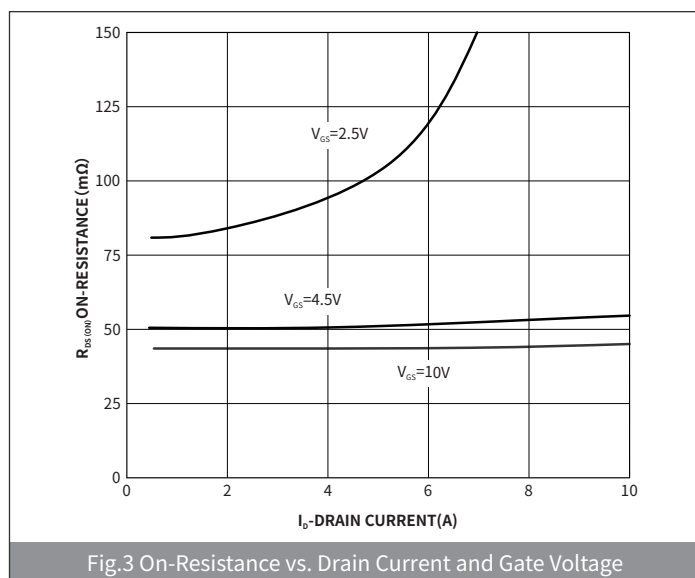
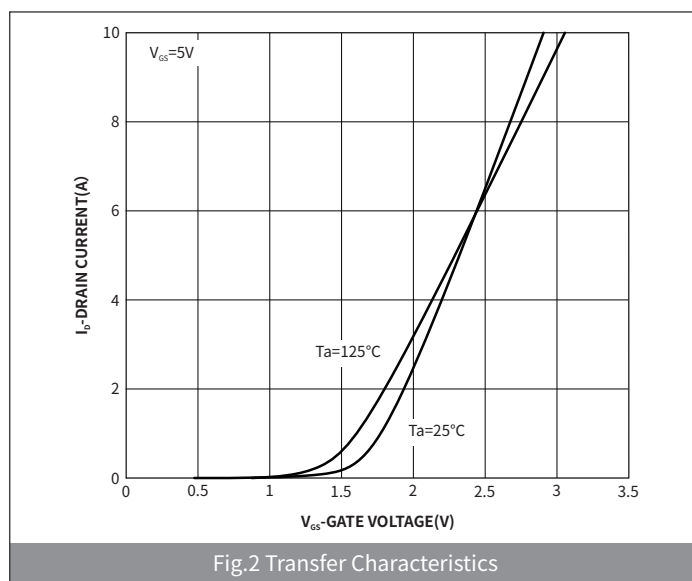
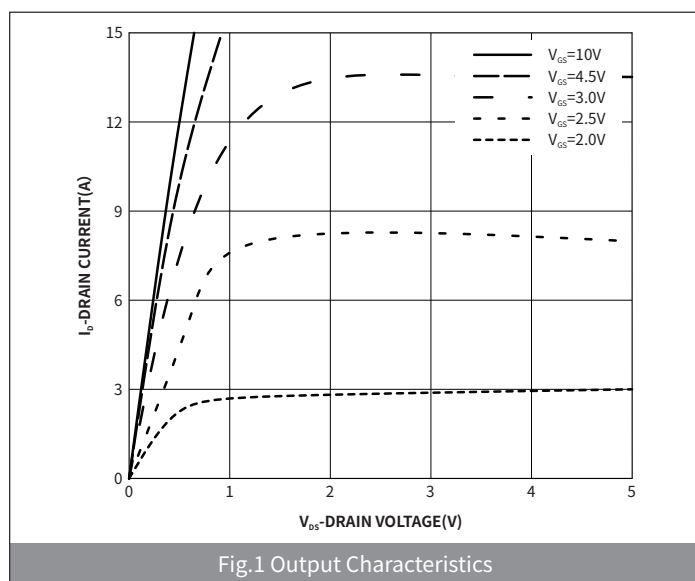
● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=15V$ $f=1MHz$	pF	—	390	—
Output Capacitance	C_{oss}			—	55	—
Reverse Transfer Capacitance	C_{rss}			—	41	—

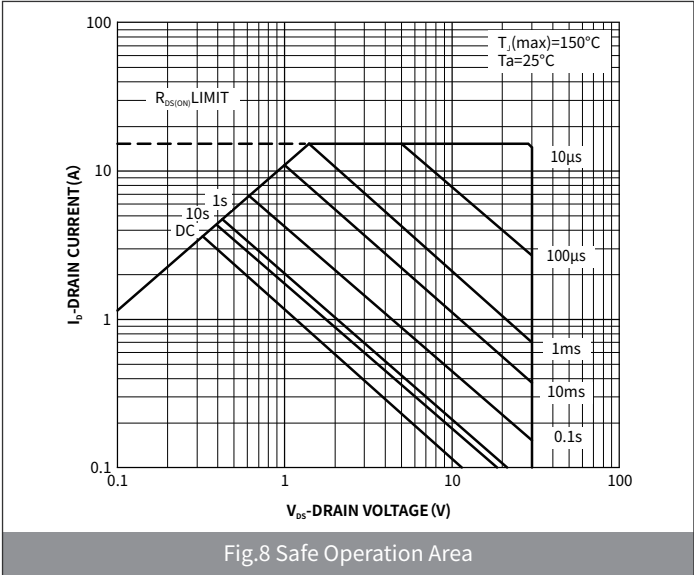
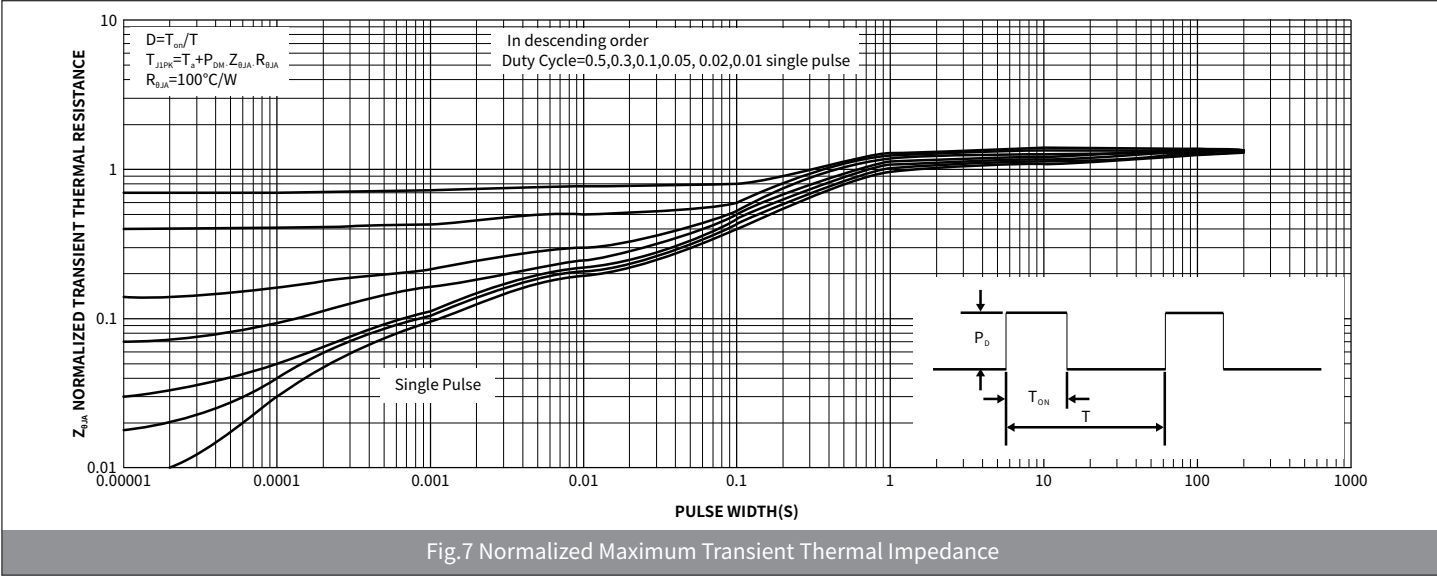
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=-2.0A$	nC	—	5.0	—
Gate-Source Charge	Q_{gs}			—	1.0	—
Gate-Drain Charge	Q_{gd}			—	2.0	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DS}=15V$ $R_L=3.75\Omega, R_{GEN}=6.0\Omega$	ns	—	4.0	—
Turn-on Rise Time	t_r			—	2.0	—
Turn-off Delay Time	$t_{D(off)}$			—	18	—
Turn-off fall Time	t_f			—	2.0	—

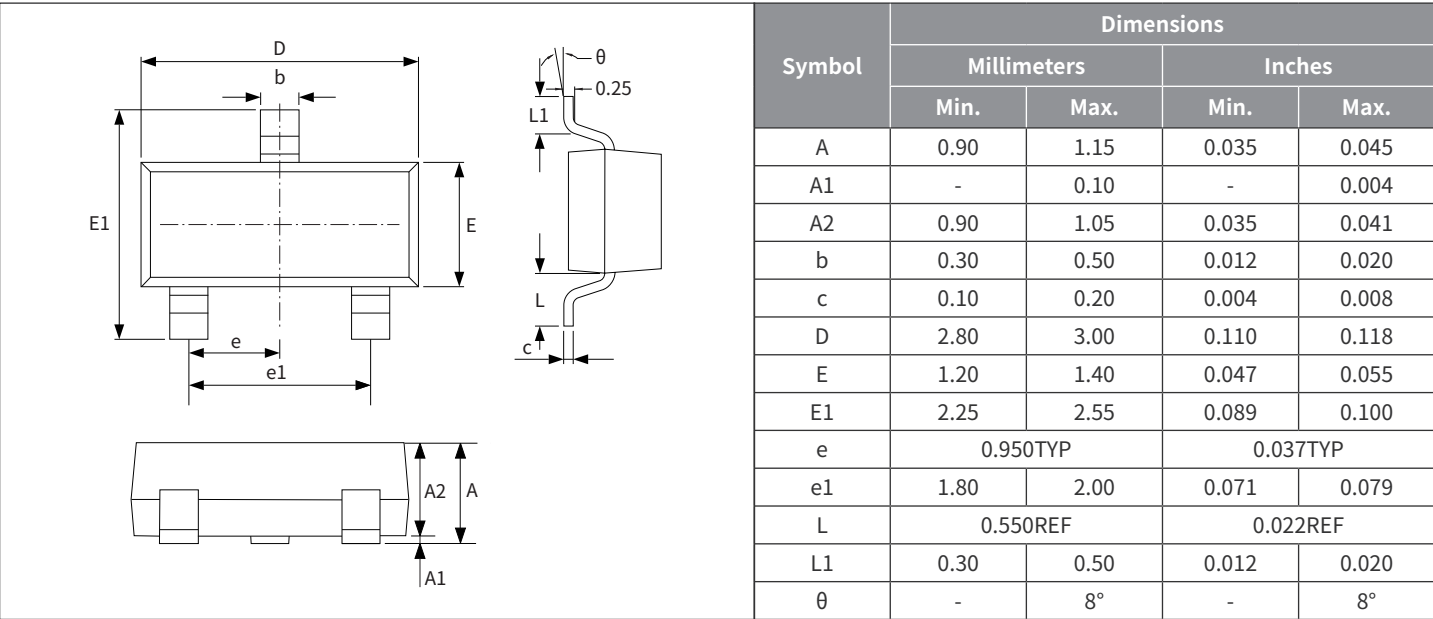
● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

