

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=50V$
- $I_D=0.31A$
- $R_{DS(on)}@V_{GS}=10V < 3.5\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 6\Omega$
- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed

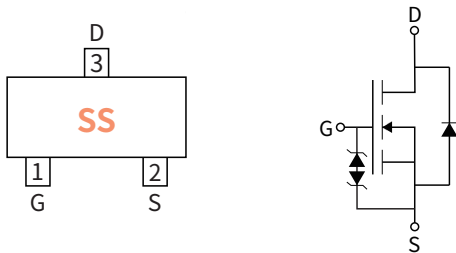
Applications

- Load Switch for Portable Devices
- Voltage controlled small signal switch

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

Function Diagram



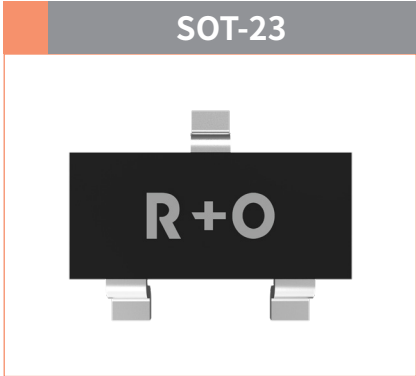
Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

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	I_D	A	0.31
Pulsed Drain Current	I_{DM}	A	0.8
Total Power Dissipation	P_D	W	0.35
ESD Protected Up to	ESD(HBM)	kV	2.0
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^{\circ}C / W$	357
Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}C$	-55 ~ +150

Drain-source Voltage
50 V
Drain Current
0.31 Ampere



● 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	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	μA	—	—	± 10
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.5	0.9	1.5
Static Drain-Source On-Resistance ⁽¹⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.22A$	Ω	—	1.5	3.5
		$V_{GS}=4.5V, I_D=0.22A$		—	1.7	6

● Dynamic Parameters⁽²⁾ (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=25V$ $f=1MHz$	pF	—	40	—
Output Capacitance	C_{oss}			—	26	—
Reverse Transfer Capacitance	C_{rss}			—	17	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=0.2A$	nC	—	0.95	—
Gate-Source Charge	Q_{gs}			—	0.1	—
Gate-Drain Charge	Q_{gd}			—	0.14	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=0.29A$ $R_{GEN}=6\Omega$	nS	—	5	—
Turn-on Rise Time	t_r			—	18	—
Turn-off Delay Time	$t_{D(off)}$			—	36	—
Turn-off fall Time	t_f			—	14	—

● Drian-Source Diode Characteristics

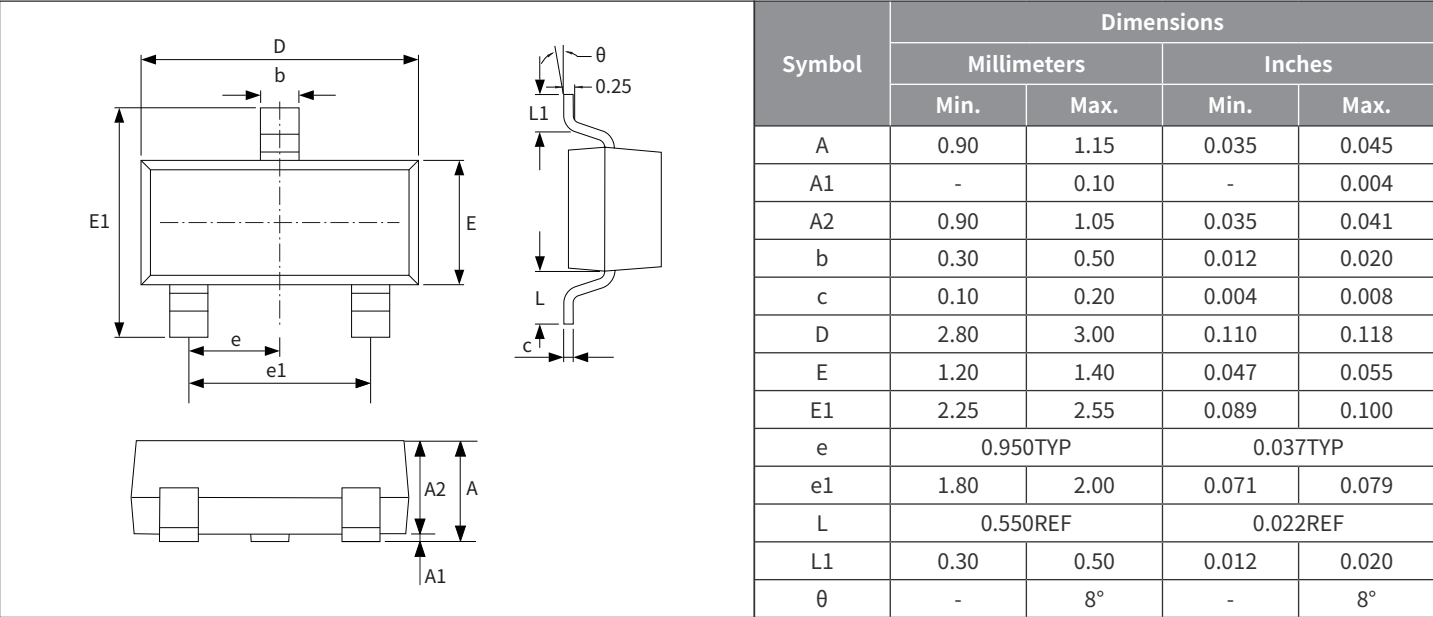
PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽¹⁾	V_{SD}	$I_S=0.31A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	0.31
Reverse Recovery Time	t_{RR}	—	nS	—	8.8	—
Reverse Recovery Charge	Q_{RR}		nC	—	2.6	—

Note :

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

(2) These parameter have no way to verify.

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

