

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -20V$
- $I_D = -2A$
- $R_{DS(on)}@V_{GS} = -4.5V < 120m\Omega$
- $R_{DS(on)}@V_{GS} = -2.5V < 150m\Omega$
- $R_{DS(on)}@V_{GS} = -1.8V < 250m\Omega$
- Advanced trench process technology
- Voltage controlled small signal switch
- Fast switching speed

Applications

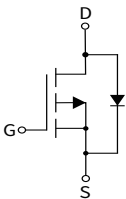
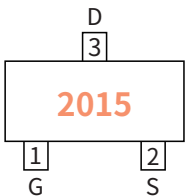
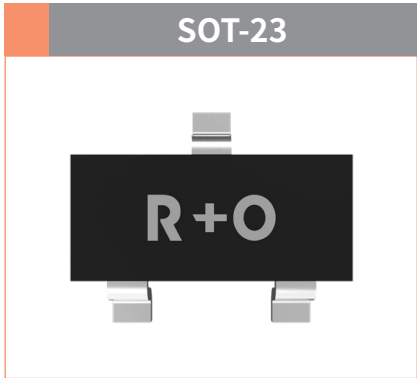
- Load switch for portable devices
- Voltage controlled small signal switch

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

Drain-source Voltage
-20 V
Drain Current
-2 Ampere



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	180000	7"

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

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	-20
Gate-source Voltage	V_{GS}	V	± 10
Drain Current	I_D	A	-2
Pulsed Drain Current	I_{DM}	A	-6
Total Power Dissipation	P_D	W	0.7
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^{\circ}C / W$	178
Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}C$	-55 ~ +150

● 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	-20	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$	μA	—	—	-1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	μA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-0.4	-0.62	-1
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1.5A$	m Ω	—	97	120
		$V_{GS}=-2.5V, I_D=-1.2A$		—	130	150
		$V_{GS}=-1.8V, I_D=-1.0A$		—	188	250

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{DS}=-10V$ $f=1MHz$	pF	—	327	—
Output Capacitance	C_{oss}			—	62	—
Reverse Transfer Capacitance	C_{rss}			—	55	—

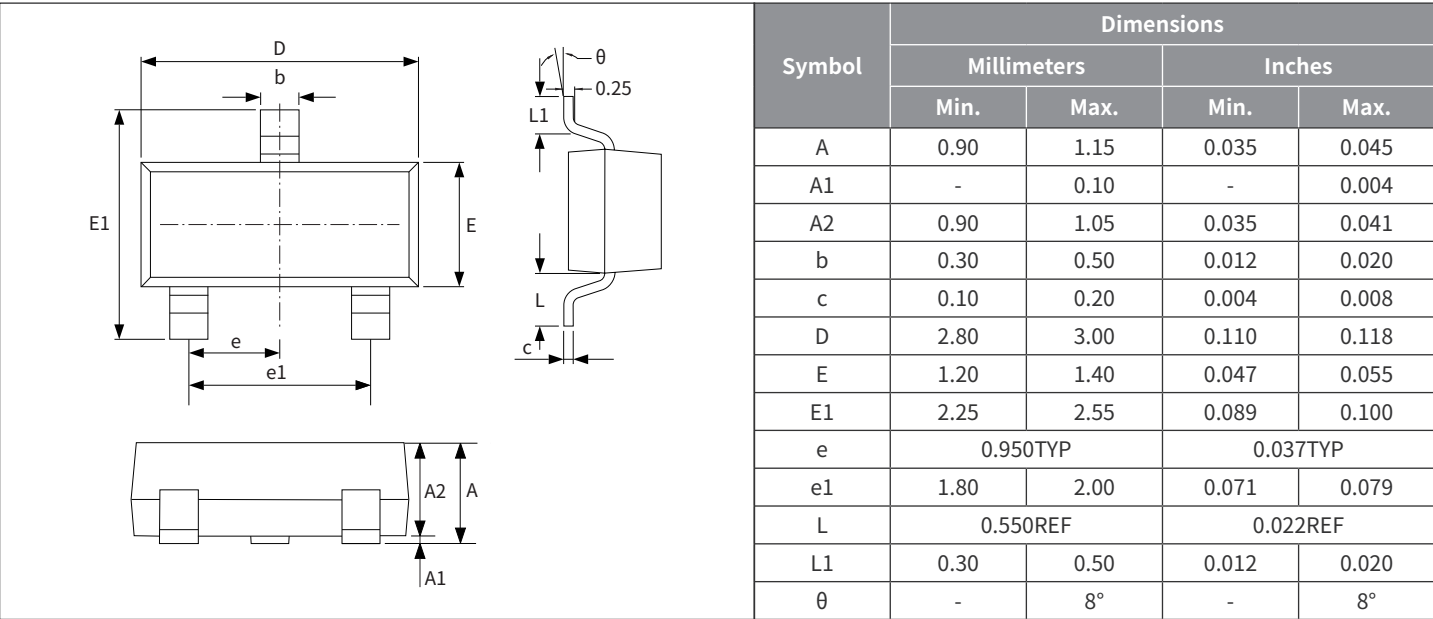
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-1.5A$	nC	—	4.5	—
Gate-Source Charge	Q_{gs}			—	0.85	—
Gate-Drain Charge	Q_{gd}			—	1.4	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-1A$ $R_{GEN}=2.5\Omega$	nS	—	6	—
Turn-on Rise Time	t_r			—	30	—
Turn-off Delay Time	$t_{D(off)}$			—	45	—
Turn-off fall Time	t_f			—	46	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	$I_S=-2A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-2

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

