

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -30V$
- $I_D = -2.5A$
- $R_{DS(on)}@V_{GS} = -10V < 78m\Omega$
- $R_{DS(on)}@V_{GS} = -4.5V < 130m\Omega$
- Advanced trench process technology
- Voltage controlled small signal switch
- Fast switching speed

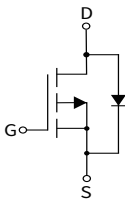
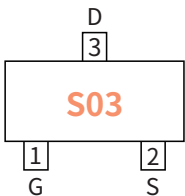
Applications

- Load switch
- PWM Application
- Power Management

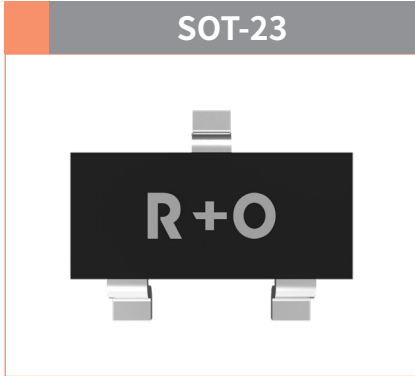
Mechanical Data

- 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

Function Diagram



Drain-source Voltage
-30 V
Drain Current
-2.5 Ampere



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"

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	± 20
Drain Current	I_D	A	-2.5
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	-20
Total Power Dissipation	P_D	W	0.9
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾	$R_{\theta JA}$	°C / W	139
Junction and Storage Temperature Range	T_J, T_{STG}	°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	-30	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	μA	—	—	-1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage ⁽³⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-1.0	-1.5	-2.5
Static Drain-Source On-Resistance ⁽³⁾	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-2A$	m Ω	—	68	78
		$V_{GS}=-4.5V, I_D=-1.5A$		—	103	130

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=-10V$ $f=1MHz$	pF	—	372	—
Output Capacitance	C_{oss}			—	82	—
Reverse Transfer Capacitance	C_{rss}			—	65	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-2.5A$	nC	—	7	—
Gate-Source Charge	Q_{gs}			—	2	—
Gate-Drain Charge	Q_{gd}			—	1	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-2.5A$ $R_{GEN}=3\Omega$	nS	—	5	—
Turn-on Rise Time	t_r			—	23	—
Turn-off Delay Time	$t_{D(off)}$			—	21	—
Turn-off fall Time	t_f			—	30	—

● Drian-Source Diode Characteristics

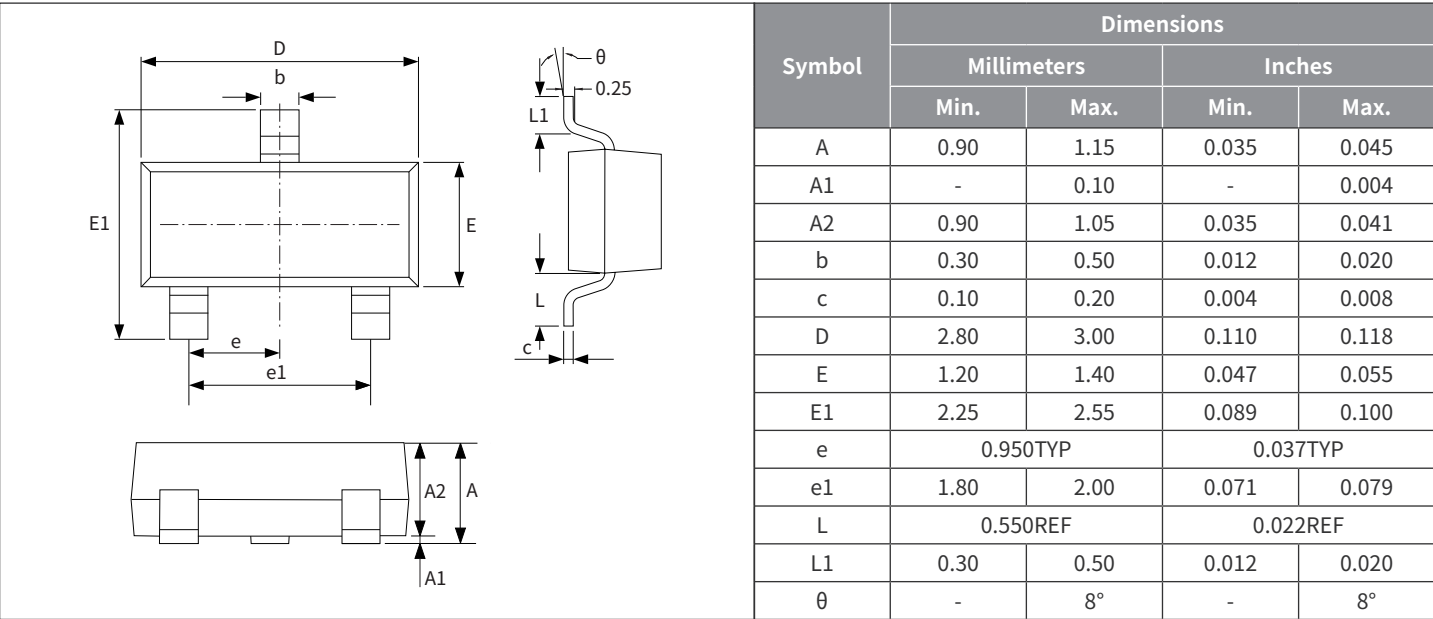
PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽³⁾	V_{SD}	$I_S=-2.5A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current ⁽²⁾	I_S	—	A	—	—	-2.5

Note:(1)Repetitive rating;pulse with limited by max. junction temperature.

(2)Surface mounted on FR-4 board,t ≤ 10 sec.

(3)Pulse with ≤ 300μs;duty cycle ≤ 2%.

Package Outline Dimensions (SOT-23)



Suggested Pad Layout

