

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -40V$
- $I_D = -3A$
- $R_{DS(on)}@V_{GS} = -10V < 138m\Omega$
- $R_{DS(on)}@V_{GS} = -4.5V < 175m\Omega$
- Advanced Trench Technology
- Fast switching speed

Applications

- Load Switch
- PWM Application
- Power Mangement

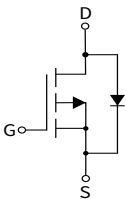
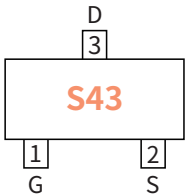
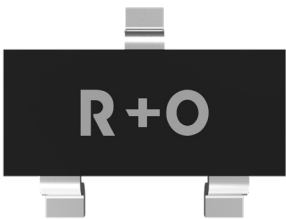
Mechanical Data

- 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
-40 V
Drain Current
-3 Ampere

SOT-23



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	-40
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	A	-3
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	-12
Total Power Dissipation	P_D	W	0.7
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾	$R_{\theta JA}$	$^{\circ}C / W$	179
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	-40	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-40V, V_{GS}=0V$	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	-1.2	-1.8	-2.5
Static Drain-Source On-Resistance ⁽³⁾	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3A$	m Ω	—	114	138
		$V_{GS}=-4.5V, I_D=-2A$		—	154	175

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=-20V$ $f=1MHz$	pF	—	284	—
Output Capacitance	C_{oss}			—	70	—
Reverse Transfer Capacitance	C_{rss}			—	50	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-10V$ $V_{DS}=-20V$ $I_D=-3A$	nC	—	8.5	—
Gate-Source Charge	Q_{gs}			—	1	—
Gate-Drain Charge	Q_{gd}			—	2	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V$ $V_{DS}=-20V$ $I_D=-3A$ $R_{GEN}=3\Omega$	nS	—	6	—
Turn-on Rise Time	t_r			—	6	—
Turn-off Delay Time	$t_{D(off)}$			—	31	—
Turn-off fall Time	t_f			—	19	—

● Drian-Source Diode Characteristics

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

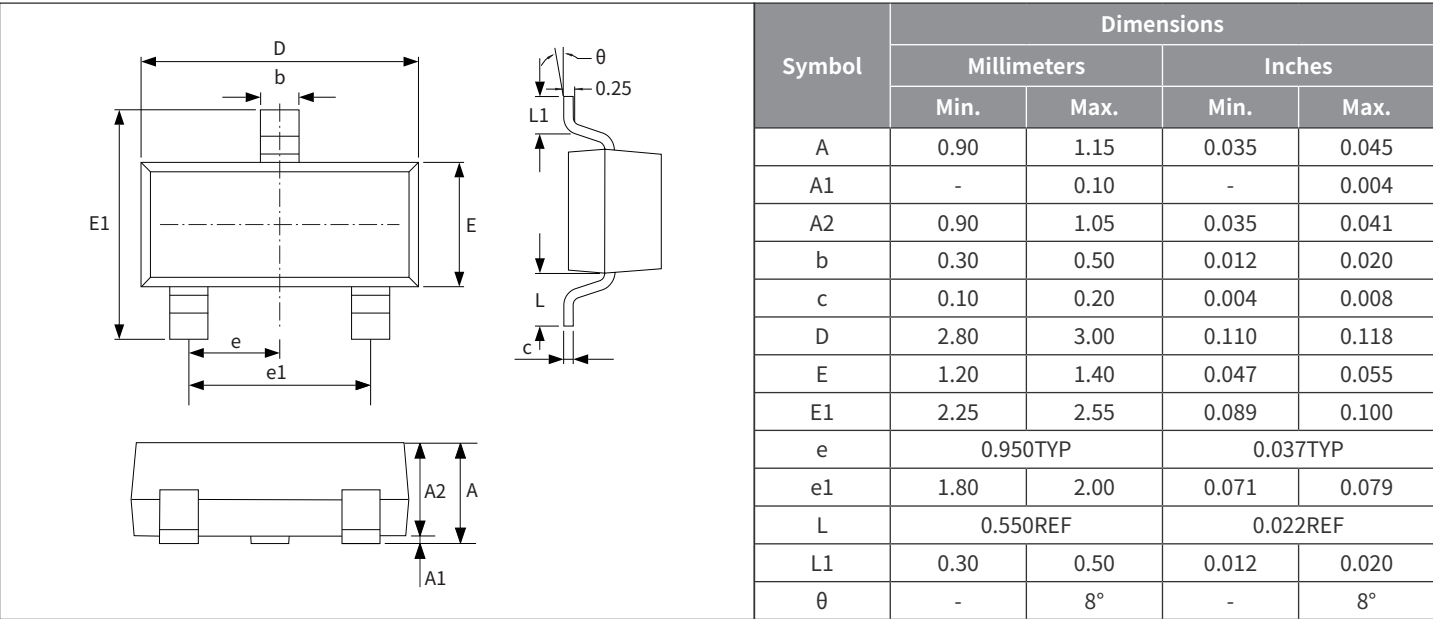
Note :

(1)Repetitive rating: pulse width limited by maximum junction temperature.

(2)Surface Mounted on FR4 Board, t ≤ 10 sec.

(3)Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%.

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

