

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -12V$
- $I_D = -4.3A$
- $R_{DS(on)}@V_{GS} = -10V < 50m\Omega$
- $R_{DS(on)}@V_{GS} = -4.5V < 85m\Omega$
- $R_{DS(on)}@V_{GS} = -1.8V < 125m\Omega$
- Ultra Low On-Resistance
- Fast switching

Applications

- Load Switch
- PWM Application
- Power Mangement

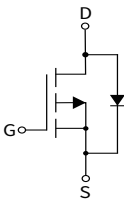
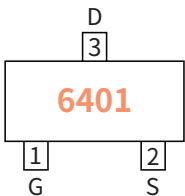
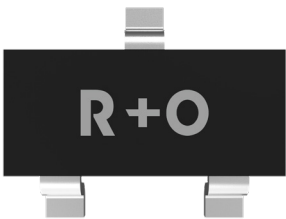
Mechanical Data

- 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
-12 V
Drain Current
-4.3 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	-12
Gate-source Voltage	V_{GS}	V	± 8
Drain Current	I_D	A	-4.3
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	-34
Total Power Dissipation	P_D	W	1.3
Thermal Resistance Junction-to-Ambient @ Steady State ⁽³⁾	$R_{\theta JA}$	$^{\circ}C / W$	100
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	-12	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12V, V_{GS}=0V$	μA	—	—	-1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-0.4	-0.7	-0.95
Static Drain-Source On-Resistance ⁽²⁾	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-4.3A$	m Ω	—	48	50
		$V_{GS}=-2.5V, I_D=-2.5A$		—	75	85
		$V_{GS}=-1.8V, I_D=-2.0A$		—	110	125

● 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	—	830	—
Output Capacitance	C_{oss}			—	461	—
Reverse Transfer Capacitance	C_{rss}			—	404	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-5V$ $V_{DS}=-10V$ $I_D=-4.3A^{(2)}$	nC	—	10	—
Gate-Source Charge	Q_{gs}			—	1.4	—
Gate-Drain Charge	Q_{gd}			—	2.6	—
Turn-on Delay Time	$t_{D(on)}$	$V_{DS}=-6V$ $I_D=-1A$ $R_{GEN}=89\Omega^{(2)}$	nS	—	11	—
Turn-on Rise Time	t_r			—	32	—
Turn-off Delay Time	$t_{D(off)}$			—	250	—
Turn-off fall Time	t_f			—	210	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽²⁾	V_{SD}	$I_S=-4.3A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current ⁽²⁾	I_S	—	A	—	—	-4.3
Reverse Recovery Time	t_{rr}	$T_J=25^\circ C, I_F=-1.3A,$ $di/dt=-100A/\mu s^{(2)}$	nS	—	22	—
Reverse Recovery Charge	Q_{rr}		nC	—	8	—

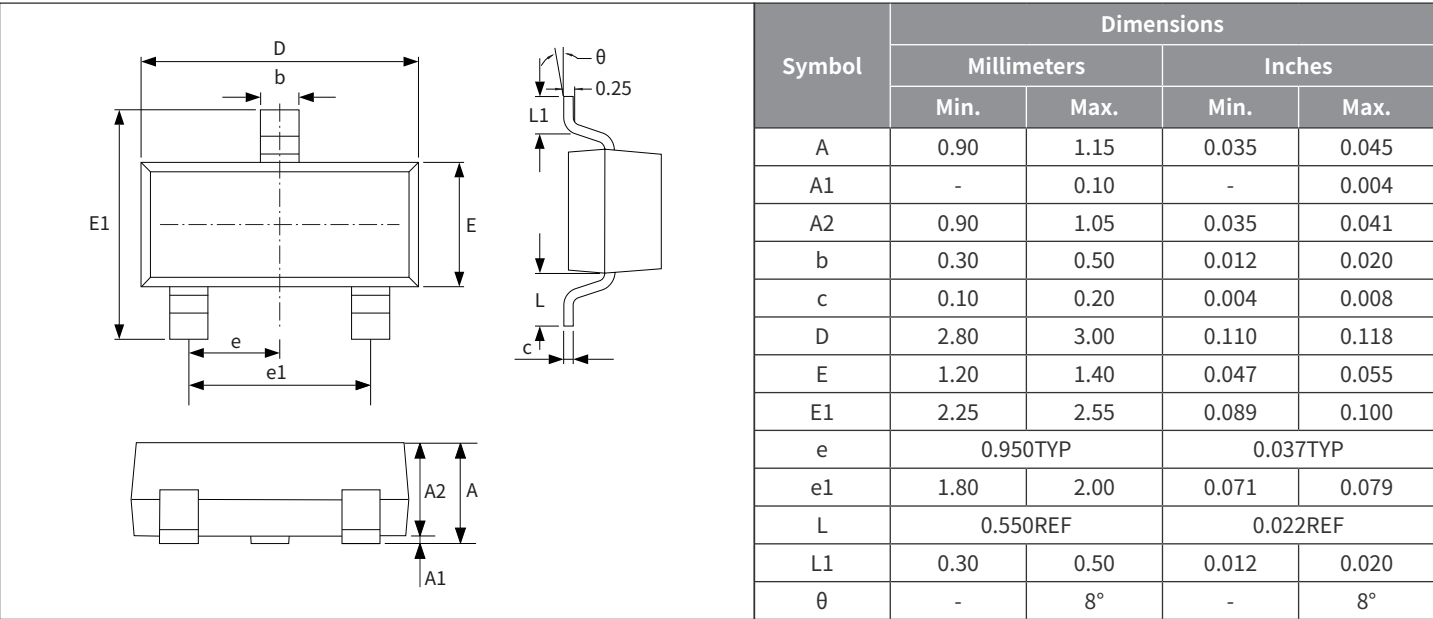
Note :

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

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

(3) Surface mounted on 1" square single layer 1 oz. copper FR4 board, steady state.

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

