

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=60V$
- $I_D=4A$
- $R_{DS(on)}@V_{GS}=10V < 78m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 95m\Omega$
- Advanced trench technology
- Fast switching

Drain-source Voltage
60 V
Drain Current
4 Ampere

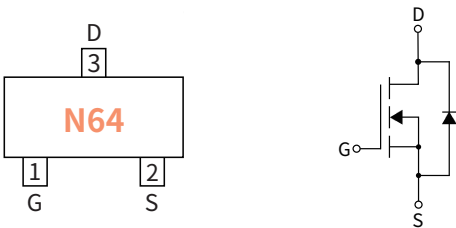
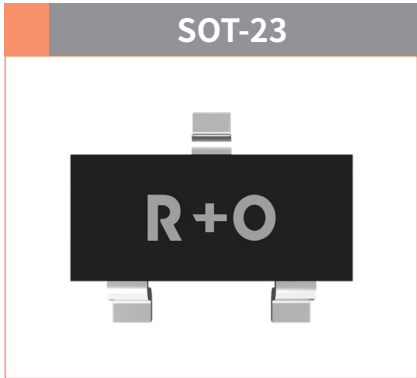
Applications

- Load switching
- Power management
- PWM Application

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	30000	180000	7"

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

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	60
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	A	4
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	14
Total Power Dissipation	P_D	mW	1000
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾	$R_{\theta JA}$	$^{\circ}C / W$	125
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	60	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	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	1.4	2.5
Static Drain-Source On-Resistance ⁽³⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$	m Ω	—	56	78
		$V_{GS}=4.5V, I_D=3A$		—	65	95

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	pF	—	724	—
Output Capacitance	C_{oss}			—	353	—
Reverse Transfer Capacitance	C_{rss}			—	313	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=3A$	nC	—	15	—
Gate-Source Charge	Q_{gs}			—	3	—
Gate-Drain Charge	Q_{gd}			—	2.5	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_G=3\Omega$ $I_D=3A$	ns	—	6	—
Turn-on Rise Time	t_r			—	11	—
Turn-off Delay Time	$t_{D(off)}$			—	13	—
Turn-off fall Time	t_f			—	8	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽³⁾	V_{SD}	$I_S=4A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	4

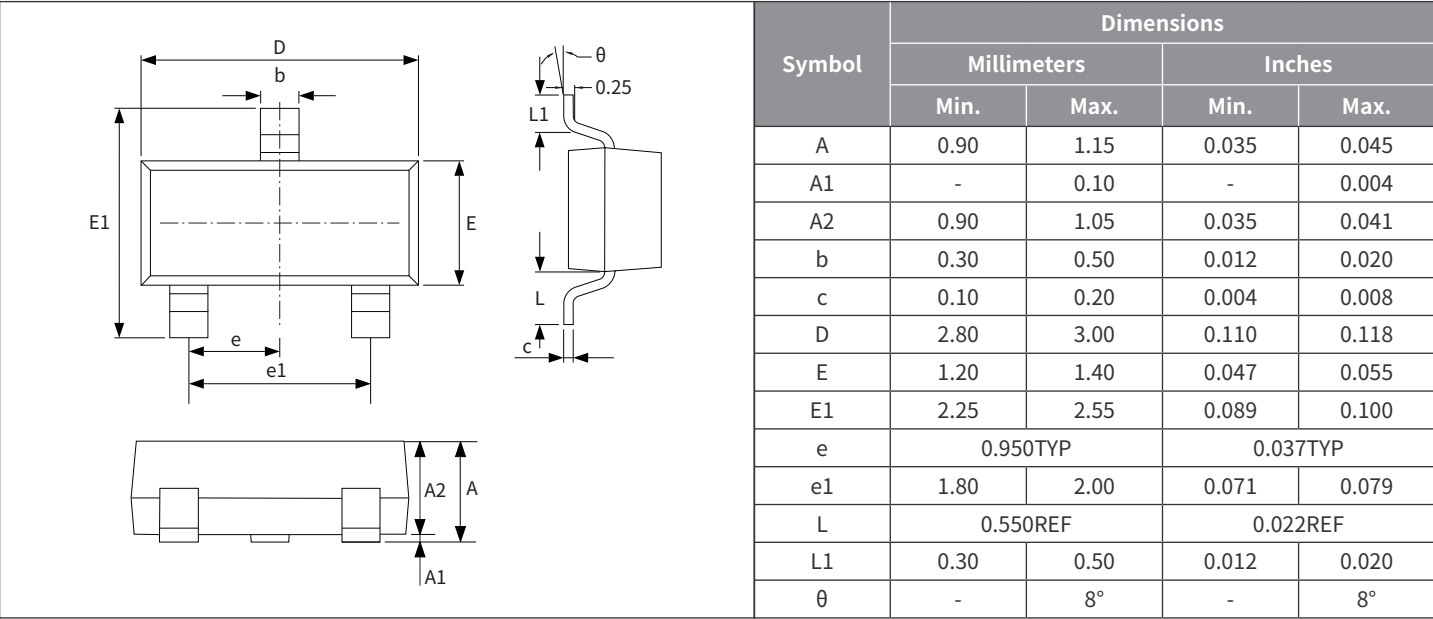
Note :

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

(2)Surface Mounted on FR4 Board, $t \leq 10$ sec.

(3)Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

