

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=20V$
- $I_D=0.7A$
- $R_{DS(on)}@V_{GS}=-4.5V < 330m\Omega$
- $R_{DS(on)}@V_{GS}=-2.5V < 400m\Omega$
- Advanced Trench Process Technology
- Voltage controlled small signal switch
- Fast Switching Speed

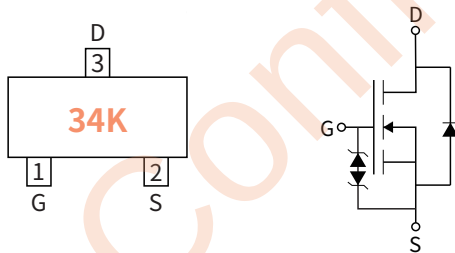
Applications

- 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



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"

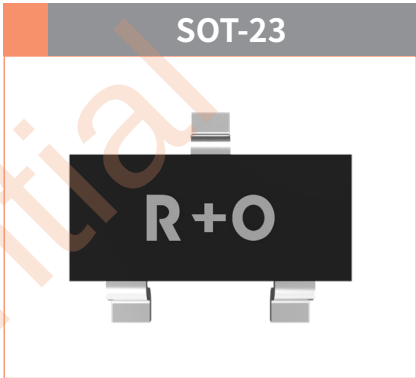
Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	20
Gate-source Voltage	V_{GS}	V	± 12
Drain Current	I_D	A	0.75
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	3.0
Total Power Dissipation ⁽²⁾	P_D	W	1.25
ESD Protected Up to	ESD(HBM)	kV	2.0
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾	$R_{\theta JA}$	°C / W	100
Junction and Storage Temperature Range	T_J, T_{STG}	°C	-55 ~+150

Note :

(1)Pulse width $\leq 100\mu s$, duty cycle $\leq 1\%$, limited by T_{jmax} .
(2)Device mounted on FR-4 substrate PC board, 2ozcopper, with 1-inch square copper plate in still air.

Drain-source Voltage
20 V
Drain Current
0.7 Ampere



● 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	—	—	± 20
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.35	0.67	1.1
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=0.65A$	m Ω	—	170	330
		$V_{GS}=2.5V, I_D=0.45A$		—	230	400

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=16V$ $f=1MHz$	pF	—	79	—
Output Capacitance	C_{oss}			—	13	—
Reverse Transfer Capacitance	C_{rss}			—	9	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=4.5V$ $V_{DS}=10V$ $I_D=0.5A$	nC	—	1	—
Gate-Source Charge	Q_{gs}			—	0.28	—
Gate-Drain Charge	Q_{gd}			—	0.22	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=4.5V$ $V_{DS}=10V$ $I_D=0.5A$ $R_{GEN}=10\Omega$	nS	—	6.7	—
Turn-on Rise Time	t_r			—	4.8	—
Turn-off Delay Time	$t_{D(off)}$			—	17.3	—
Turn-off fall Time	t_f			—	7.4	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	$I_S=0.75A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	0.75

● Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074