

SOT-23-6L Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -30V$
- $I_D = -4.1A$
- $R_{DS(on)} @ V_{GS} = -10V < 55m\Omega$
- $R_{DS(on)} @ V_{GS} = -4.5V < 68m\Omega$
- High power and current handing capability
- Voltage controlled small signal switch
- Fast Switching Speed

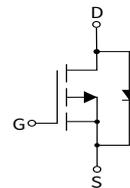
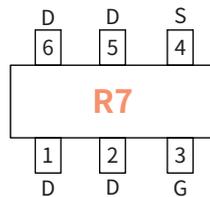
Applications

- Battery Switch
- DC/DC Converter

Mechanical Data

- Case: SOT-23-6L
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

-4.1 Ampere

SOT-23-6L



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23-6L	R1	0.0422	3000	30000	180000	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	-4.1
Pulsed Drain Current	I_{DM}	A	-15
Total Power Dissipation @ $T_A = 25^\circ C$	P_D	W	1.2
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^\circ C / W$	105
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	-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	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-1.0	-1.5	-2.4
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.1A$	m Ω	—	40	55
		$V_{GS}=-4.5V, I_D=-3.5A$		—	55	68

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1.0MHz$	pF	—	583	—
Output Capacitance	C_{oss}			—	90	—
Reverse Transfer Capacitance	C_{rss}			—	72	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-4.1A$	nC	—	12	—
Gate-Source Charge	Q_{gs}			—	2	—
Gate-Drain Charge	Q_{gd}			—	2	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V, V_{DD}=-15V$ $I_D=-1A, R_{GEN}=2.5\Omega$	ns	—	4	—
Turn-on Rise Time	t_r			—	18	—
Turn-off Delay Time	$t_{D(off)}$			—	18	—
Turn-off fall Time	t_f			—	22	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	$I_S=-4.1A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-4.1

● Package Outline Dimensions (SOT-23-6L)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.02	0.110	0.119
B	2.65	3.00	0.104	0.118
C	0.93	0.97	0.037	0.038
D	0.30	0.50	0.012	0.020
E	1.50	1.70	0.059	0.067
F	0.10	0.20	0.004	0.008
G	-	0.10	-	0.004
H	0.30	0.60	0.012	0.024
J	1.05	1.25	0.041	0.049

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.65	0.75	0.026	0.03
K	0.95	1.05	0.038	0.043
M	-	1.40	-	0.055
N	-	0.35	-	0.014
X	-	0.95	-	0.037
Y	-	2.30	-	0.090
L	-	2.50	-	0.098