

SOT-23-6L Plastic-Encapsulate MOSFETS

● Features

- $V_{DS}=30V$
- $I_D=5.6A$
- $R_{DS(on)}@V_{GS}=10V < 19m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 27m\Omega$
- High power and current handing capability
- Voltage controlled small signal switch
- Fast Switching Speed

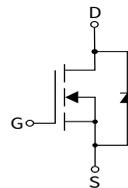
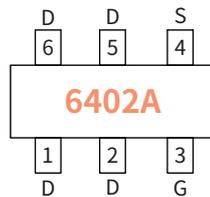
● Applications

- 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

5.6 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	5.6
Pulsed Drain Current	I_{DM}	A	23
Total Power Dissipation @ $T_A=25^\circ C$	P_D	W	1.2
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^\circ C / W$	104
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	2.2
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.6A$	m Ω	—	15	19
		$V_{GS}=4.5V, I_D=5A$		—	21	27

● **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	—	625	—
Output Capacitance	C_{oss}			—	82	—
Reverse Transfer Capacitance	C_{rss}			—	64	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=5A$	nC	—	12	—
Gate-Source Charge	Q_{gs}			—	3	—
Gate-Drain Charge	Q_{gd}			—	2	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=15V$ $I_D=5A, R_{GEN}=3\Omega$	ns	—	7	—
Turn-on Rise Time	t_r			—	30	—
Turn-off Delay Time	$t_{D(off)}$			—	14	—
Turn-off fall Time	t_f			—	25	—

● **Drain-Source Diode Characteristics**

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	$I_S=5.6A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	5.6

● 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