SOT-23-6L Plastic-Encapsulate MOSFETS

Features

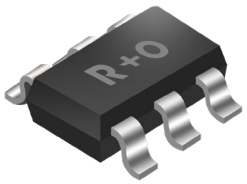
- V_{DS}=-30V
- I_D=-4.4A
- $R_{DS(on)}$@V_{GS}=-10V ＜ 60mΩ
- $R_{DS(on)}$@V_{GS}=-4.5V ＜ 68mΩ
- $R_{DS(on)}$@V_{GS}=-2.5V ＜ 96mΩ
- High power and current handing capability
- Voltage controlled small signal switch
- Fast Switching Speed

Drain-source Voltage
-30 V
Drain Current
-4.4 Ampere

Applications

- Battery Switch
- DC/DC Converter

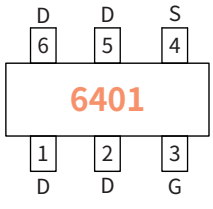
SOT-23-6L

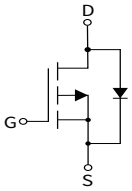


Mechanical Data

- 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





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	±12
Drain Current	I_D	A	-4.4
Pulsed Drain Current	I_{DM}	A	-17
Total Power Dissipation @ T_A=25°C	P_D	W	1.2
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	°C / W	104
Junction and Storage Temperature Range	T_J,T_{STG}	°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=-250μA	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}= ±12V, V_{DS}=0V	nA	—	—	±100
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	V	-0.6	-0.9	-1.4
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -10V, I_D=-4.4A	mΩ	—	46	60
		V_{GS}= -4.5V, I_D=-4A		—	55	68
		V_{GS}= -2.5V, I_D=-2A		—	68	96

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	—	1040	—
Output Capacitance	C_{oss}			—	87	—
Reverse Transfer Capacitance	C_{rss}			—	68	—

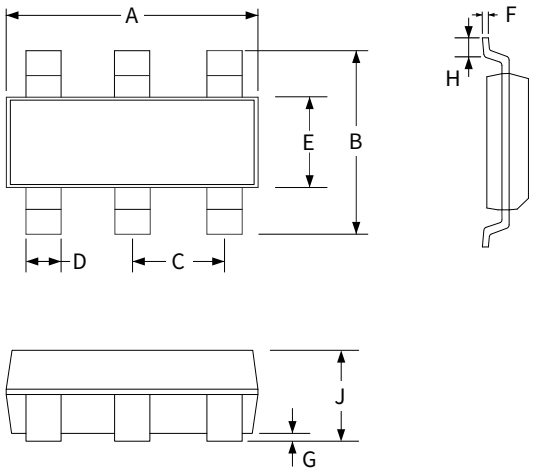
Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	V_{GS}=-10V V_{DS}=-15V I_D=-4.4A	nC	—	22	—
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=-1A,R_{GEN}=2.5Ω	ns	—	5	—
Turn-on Rise Time	t_r			—	26	—
Turn-off Delay Time	$t_{D(off)}$			—	50	—
Turn-off fall Time	t_f			—	43	—

Drian-Source Diode Characteristics

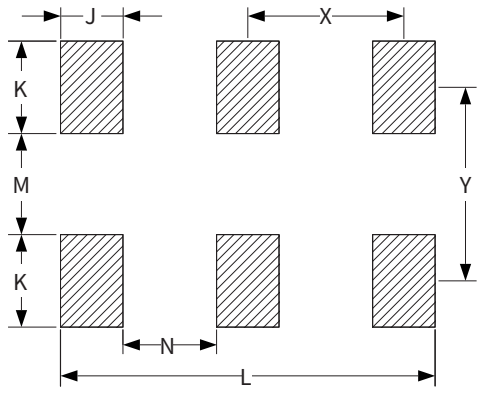
PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	I_S=-4.4A, V_{GS}=0V	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-4.4

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