

SOT-23-6L Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=-20V$
- $I_D=-4.0A$
- $R_{DS(on)}@V_{GS}=-4.5V < 80m\Omega$
- $R_{DS(on)}@V_{GS}=-2.5V < 100m\Omega$
- Low threshold voltage
- Trench mosfet technology
- Fast Switching Speed

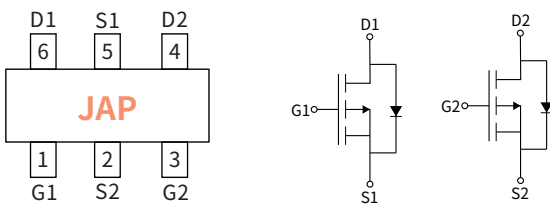
Applications

- Battery operated systems
- Load switch
- Uninterruptible power supply

Mechanical Data

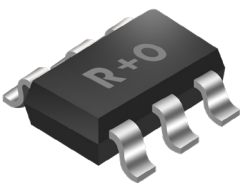
- Case: SOT-23-6L
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Drain-source Voltage
-20 V
Drain Current
-4.0 Ampere

SOT-23-6L



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23-6L	R1	0.008	3000	30000	180000	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	± 10
Drain Current	I_D	A	-4.0
Pulsed Drain Current	I_{DM}	A	-12
Total Power Dissipation @ $T_A=25^{\circ}C$	P_D	W	1.21
Thermal Resistance Junction-to-Ambient ⁽¹⁾	$R_{\theta JA}$	$^{\circ}C / W$	104
Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}C$	-55 ~+150

Note :

(1)Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for drain 6 cm².

● 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
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-0.45	-0.75	-0.95
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-2A$	m Ω	—	61	80
		$V_{GS}=-2.5V, I_D=-1.5A$		—	77	100
Diode Forward Voltage	V_{SD}	$I_S=-4A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-4.0

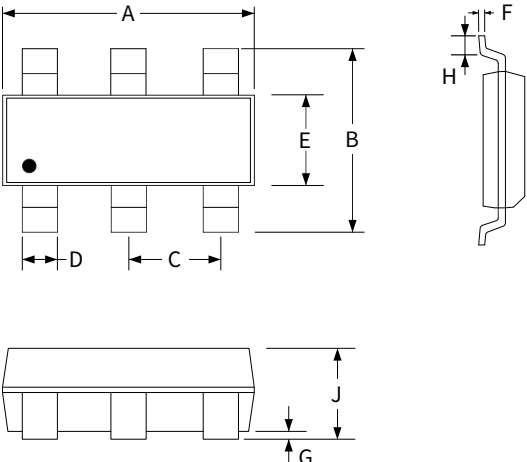
● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=-10V$ $V_{GS}=0V$ $f=1.0MHz$	pF	—	804	—
Output Capacitance	C_{oss}			—	95	—
Reverse Transfer Capacitance	C_{rss}			—	77	—

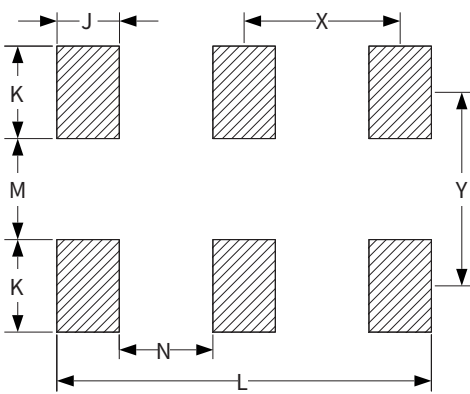
● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-2A$	nC	—	6.3	—
Gate-Source Charge	Q_{gs}			—	1.2	—
Gate-Drain Charge	Q_{gd}			—	0.9	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DS}=-10V$ $I_D=-2A, R_{GEN}=6.0\Omega$	ns	—	7	—
Turn-on Rise Time	t_r			—	15	—
Turn-off Delay Time	$t_{D(off)}$			—	41	—
Turn-off fall Time	t_f			—	14	—

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

	Symbol	Dimensions			
		Millimeters		Inches	
		Min.	Max.	Min.	Max.
A		2.80	3.00	0.110	0.118
B		2.60	3.00	0.102	0.118
C		0.93	0.97	0.037	0.038
D		0.39	0.41	0.015	0.016
E		1.50	1.70	0.059	0.067
F		0.11	0.19	0.004	0.007
G		-	0.10	-	0.004
H		0.40	-	0.016	-
J		1.00	1.20	0.035	0.057

● 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