

## SOT-23-3L Plastic-Encapsulate MOSFETS

### ● Features

- $V_{DS}=30V$
- $I_D=5.8A$
- $R_{DS(on)}@VGS=10V < 27m\Omega$
- $R_{DS(on)}@VGS=4.5V < 33m\Omega$
- Advanced Trench technology
- Lead free product is acquired

**Drain-source Voltage**  
30 V  
**Drain Current**  
5.8 Ampere

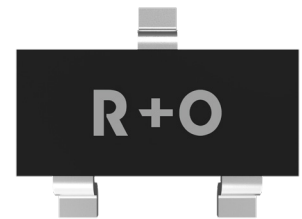
### ● Applications

- Interfacing Switching
- Load Switching
- Power management

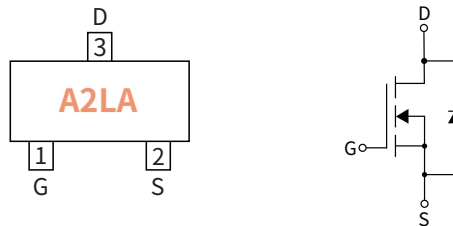
### ● Mechanical Data

- Case: SOT-23-3L  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

SOT-23-3L



### ● Function Diagram



### ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23-3L	R1	0.0132	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	$\pm 12$
Drain Current	$I_D$	A	5.8
Pulsed Drain Current	$I_{DM}$	A	23
Total Power Dissipation @ $T_A=25^\circ C$	$P_D$	mW	1400
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^\circ C / W$	90
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	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$	$\mu A$	—	—	1.0
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0V$	nA	—	—	$\pm 100$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.65	0.9	1.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.8A$	m $\Omega$	—	21	27
		$V_{GS}=4.5V, I_D=5A$		—	25	33
		$V_{GS}=2.5V, I_D=3A$		—	33	51
Diode Forward Voltage	$V_{SD}$	$I_S=5.8A, V_{GS}=0V$	V	—	—	1.2

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	$C_{iss}$	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$	pF	—	677	—
Output Capacitance	$C_{oss}$			—	78	—
Reverse Transfer Capacitance	$C_{rss}$			—	60	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	$Q_g$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=5.6A$	nC	—	17	—
Gate-Source Charge	$Q_{gs}$			—	2	—
Gate-Drain Charge	$Q_{gd}$			—	2	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_G=3\Omega$ $I_D=5.6A$	ns	—	5	—
Turn-on Rise Time	$t_r$			—	28	—
Turn-off Delay Time	$t_{D(off)}$			—	16	—
Turn-off fall Time	$t_f$			—	26	—

## ● Package Outline Dimensions (SOT-23-3L)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.05	1.25	0.041	0.049
A1	-	0.10	-	0.004
A2	1.05	1.15	0.041	0.045
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.82	3.02	0.111	0.119
E	1.50	1.70	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.90	1.00	0.035	0.039
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
L1	0.30	0.60	0.012	0.024
$\theta$	-	8°	-	8°

## ● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.95	-	0.037
M	2.00	-	0.078	-
N	-	2.0	-	0.079