



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

**MK2300A N-Channel 20-V(D-S) MOSFET**

V(BR)DSS	RDS(on)MAX	ID
20 V	25mΩ@4.5V	6A
	35mΩ@2.5V	

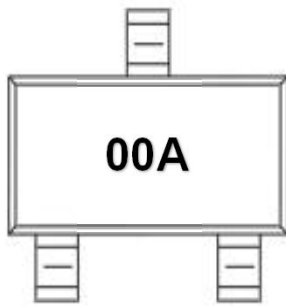
**FEATURE**

※ TrenchFET Power MOSFET

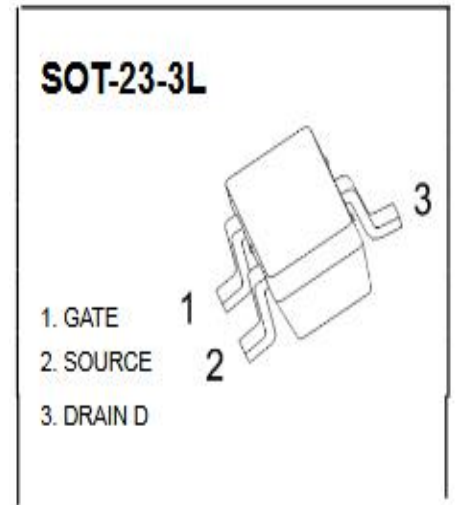
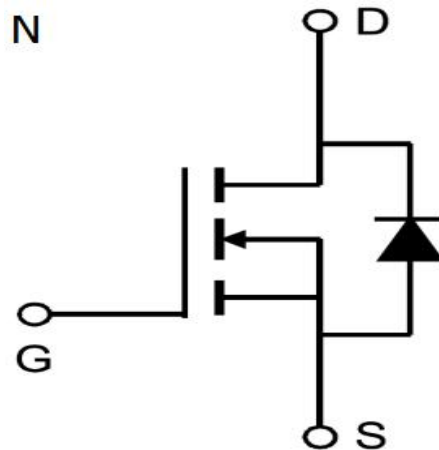
**APPLICATION**

- ※ Load Switch for Portable Devices
- ※ DC/DC Converter

**MARKING**



**Equivalent Circuit**



**Maximum ratings ( Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	20	V
Gate-Source Voltage	VGS	±12	
Continuous Drain Current	ID	6	A
Pulsed Diode Current	IDM	20	
Continuous Source-Drain Current(Diode Conduction)	IS	0.8	
Power Dissipation	PD	1.5	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	150	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	°C



MOSFET ELECTRICAL CHARACTERISTICS

Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

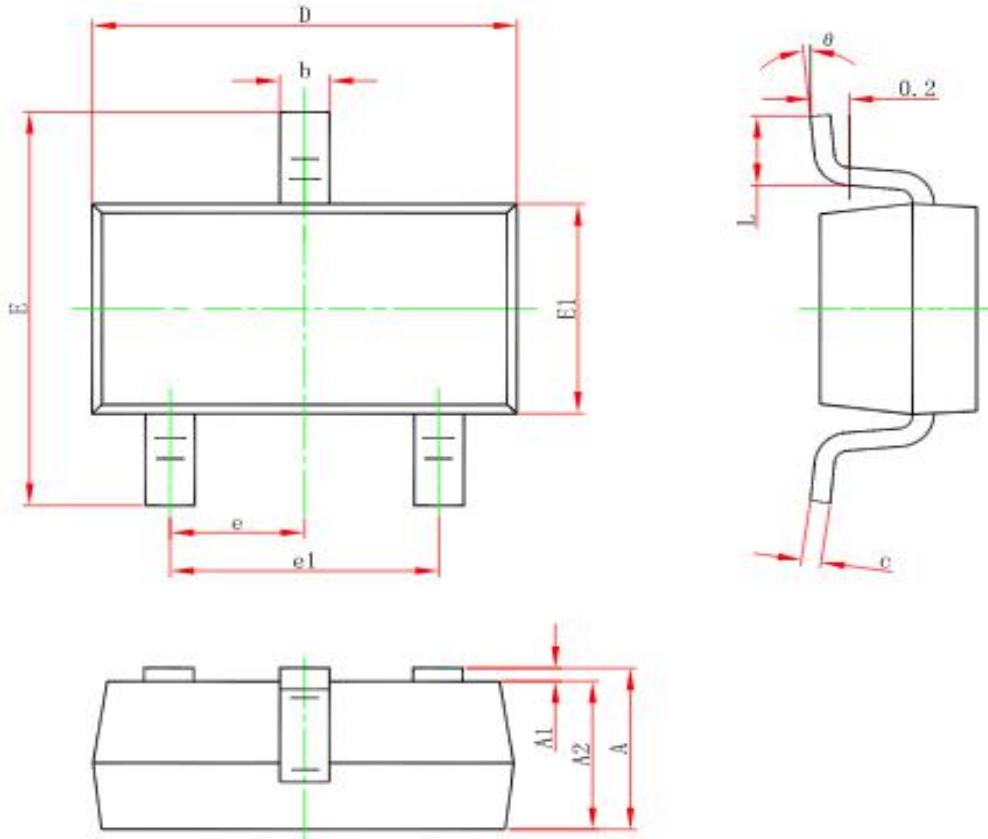
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	<b>V(BR)DSS</b>	VGS = 0V, ID = 250μA	20			V
Gate-source threshold voltage	<b>VGS(th)</b>	VDS =VGS, ID = 250μA	0.5		1.2	V
Gate-source leakage	<b>IGSS</b>	VDS =0V, VGS = ±12V			±100	nA
Zero gate voltage drain current	<b>IDSS</b>	VDS = 20V, VGS =0V			1	μA
Drain-source on-state resistancea	<b>RDS(on)</b>	VGS = 4.5V, ID = 6A		22	47	mΩ
		VGS = 2.5V, ID = 4A		26	35	mΩ
Forward transconductancea	<b>gfs</b>	VDS = 4.5V, ID = 6A	8			S
Diode forward voltage	<b>VSD</b>	IS= 1A,VGS=0V		0.8	1.3	V
<b>Dynamic</b>						
Input capacitance	<b>Ciss</b>	VDS = 15V,VGS = 0V, f=1MHz		565		pF
Output capacitance	<b>Coss</b>			105		pF
Reverse transfer capacitanceb	<b>Crss</b>			77		pF
Total gate charge	<b>Qg</b>	VDS = 15V,VGS = 4.5V, ID =-4.5A		5	7	nC
Gate-source charge	<b>Qgs</b>			1		nC
Gate-drain charge	<b>Qgd</b>			1.5		nC
Gate resistance	<b>Rg</b>	f=1MHz		3.6		Ω
<b>Switchingb</b>						
Turn-on delay time	<b>td(on)</b>	VDD= 10V RL=10Ω, ID ≈ 1A, VGEN= 4.5V,Rg=6Ω		8	20	ns
Rise time	<b>tr</b>			10	20	ns
Turn-off delay time	<b>td(off)</b>			22	45	ns
Fall time	<b>tf</b>			6	15	ns
<b>Drain-source body diode characteristics</b>						
Continuous Source-Drain Diode Current	<b>IS</b>	Tc=25°C			1.3	A
Pulsed Diode forward Curren	<b>ISM</b>				20	A

**Note :**

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.



SOT-23-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°