



**MK2323A**

**P-Channel 20-V(D-S) MOSFET**

V(BR)DSS	RDS(on)MAX	ID
-20 V	30mΩ @ -4.5V	-6 A
	35mΩ @ -2.5V	

**FEATURE**

- TrenchFET Power MOSFET
- Fast switching speed
- High performance trench technology
- Low RDS(on) provides higher efficiency and extends battery life

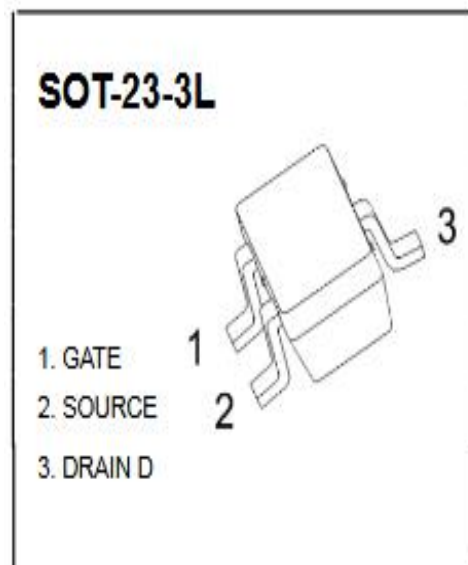
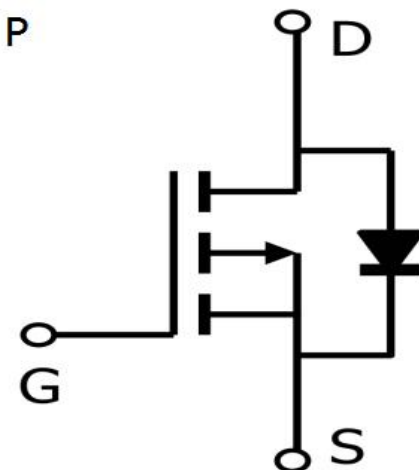
**APPLICATION**

- ※ 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	<b>VDS</b>	-20	V
Gate-Source Voltage	<b>VGS</b>	±8	
Continuous Drain Current	<b>ID</b>	-6	A
Pulsed Diode Current	<b>IDM</b>	-18	
Power Dissipation	<b>PD</b>	1.25	W
Thermal Resistance from Junction to Ambient (t≤5s)	<b>RθJA</b>	100	°C/W
Operating Junction	<b>TJ</b>	150	°C
Storage Temperature	<b>TSTG</b>	-55~+150	



MOSFET ELECTRICAL CHARACTERISTICS

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

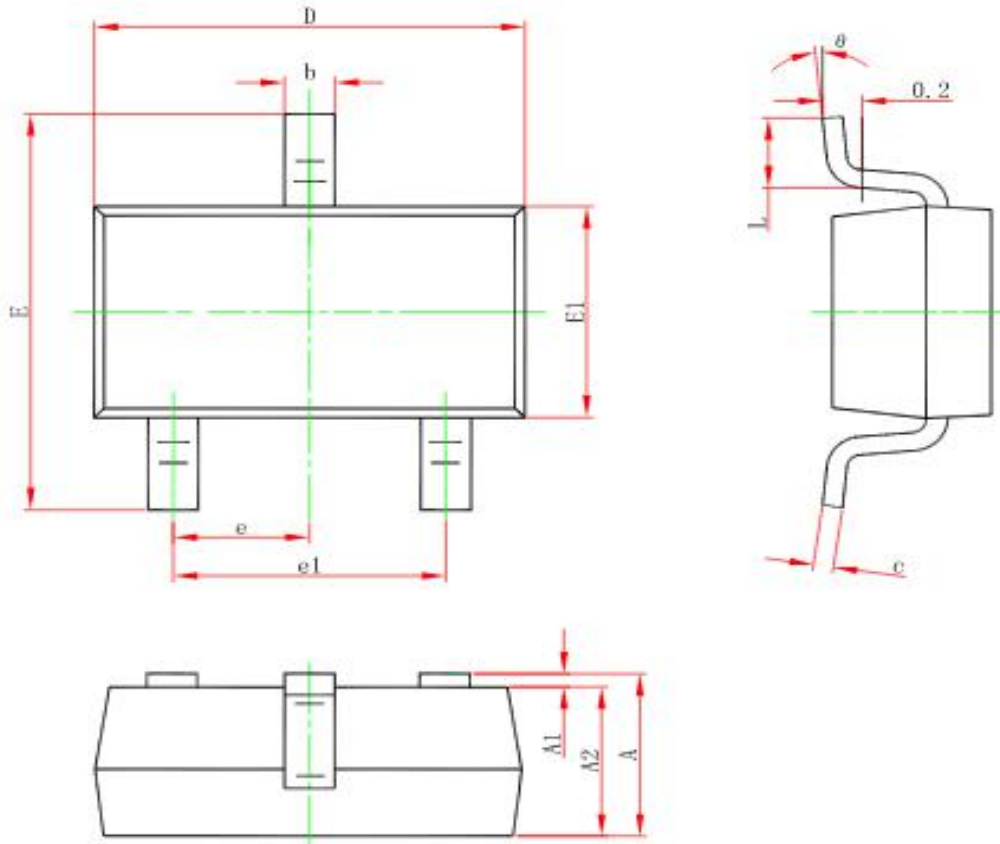
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	<b>V(BR)DSS</b>	VGS = 0V, ID = -250μA	-20			V
Gate-source threshold voltage	<b>VGS(th)</b>	VDS = VGS, ID = -250μA	-0.4		-1.5	V
Gate-source leakage	<b>IGSS</b>	VDS = 0V, VGS = ±8V			±100	nA
Zero gate voltage 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		25	30	mΩ
		VGS = -2.5V, ID = -4A		30	35	mΩ
Forward transconductancea	<b>gfs</b>	VDS = -5V, ID = -5A		20		S
Diode forward voltage	<b>VSD</b>	IS=-1A, VGS=0V		-0.8	-1.5	V
<b>Dynamic</b>						
Input capacitance	<b>Ciss</b>	VDS = -10V, VGS = 0V, f=1MHz		1090		pF
Output capacitance	<b>Coss</b>			155		pF
Reverse transfer capacitanceb	<b>Crss</b>			135		pF
Total gate charge	<b>Qg</b>	VDS = -10V, VGS = - 4.5V, ID = -5A		16		nC
Gate-source charge	<b>Qgs</b>			2.5		nC
Gate-drain charge	<b>Qgd</b>			3.2		nC
Gate resistance	<b>Rg</b>	f=1MHz		5		Ω
<b>Switchingb</b>						
Turn-on delay time	<b>td(on)</b>	VDS= -10V RL= 3Ω, ID = -4A, VGEN= -4.5V, Rg=2Ω		18		ns
Rise time	<b>tr</b>			25		ns
Turn-off delay time	<b>td(off)</b>			42		ns
Fall time	<b>tf</b>			13		ns
<b>Drain-source body diode characteristics</b>						
Continuous Source-Drain Diode Current	<b>IS</b>	Tc=25°C			-2.1	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°