



SOT-23 Plastic-Encapsulate MOSFETS

MK2310

N-Channel 60-V(D-S) MOSFET

V(BR)DSS	RDS(on)MAX	ID
60 V	95mΩ@10V	3A
	100mΩ@4.5V	

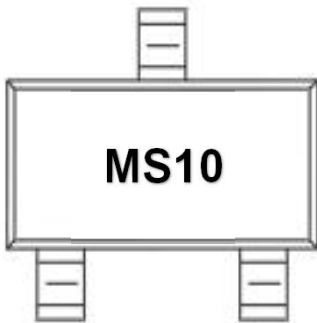
FEATURE

※ TrenchFET Power MOSFET

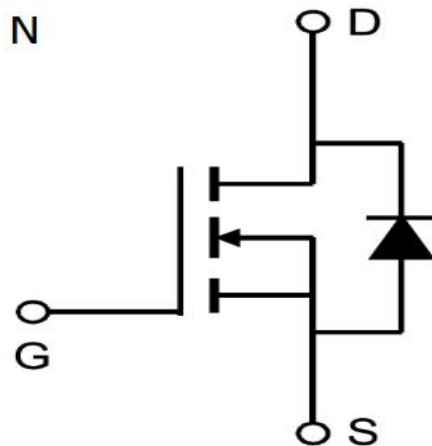
APPLICATION

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

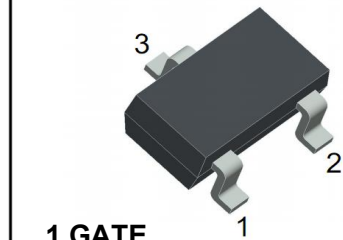
MARKING



Equivalent Circuit



SOT-23



- 1.GATE
- 2.SOURCE
- 3.DRAIN

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	60	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	3	A
Pulsed Drain Current	IDM	10	
Continuous Source-Drain Current(Diode Conduction)	IS	0.8	
Power Dissipation	PD	1.25	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	357	°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)**

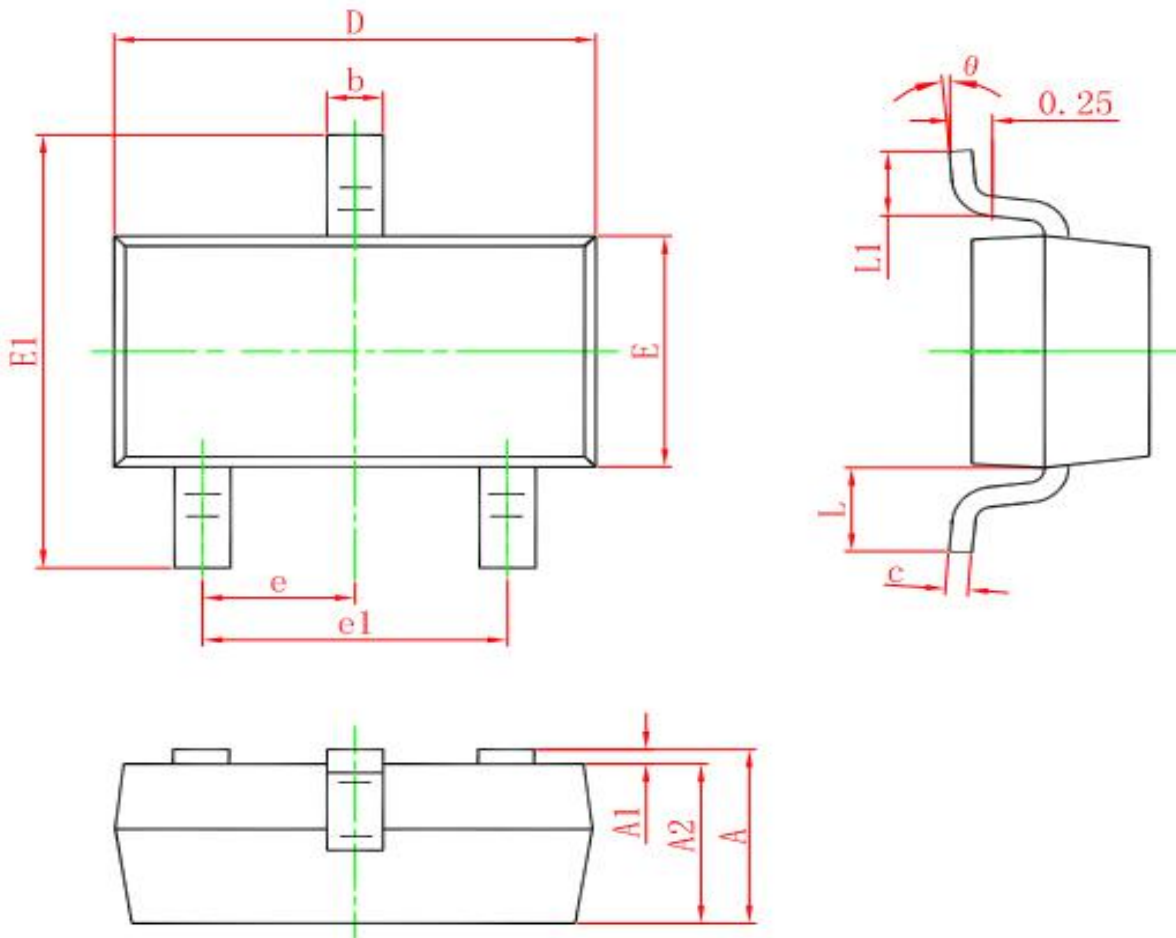
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	<b>V(BR)DSS</b>	VGS = 0V, ID = 250μA	60			V
Gate-source threshold voltage	<b>VGS(th)</b>	VDS = VGS, ID = 250μA	0.9		2	V
Gate-source leakage	<b>IGSS</b>	VDS = 0V, VGS = ±20V			±100	nA
Zero gate voltage drain current	<b>IDSS</b>	VDS = 60V, VGS = 0V			1	μA
Drain-source on-state resistance <sup>a</sup>	<b>RDS(on)</b>	VGS = 10V, ID = 3 A		72	95	mΩ
		VGS = 4.5V, ID = 2 A		82	100	mΩ
Forward transconductance <sup>a</sup>	<b>gfs</b>	VDS = 4.5V, ID = 3A		7		S
Diode forward voltage	<b>VSD</b>	IS=1A, VGS=0V		0.8	1.2	V
<b>Dynamic</b>						
Input capacitance	<b>Ciss</b>	VDS = 10V, VGS = 0V, f=1MHz		247		pF
Output capacitance	<b>Coss</b>			34		pF
Reverse transfer capacitance <sup>b</sup>	<b>Crss</b>			20		pF
Total gate charge	<b>Qg</b>	VDS = 10V, VGS = 4.5V, ID = 3A		6	4.5	nC
Gate-source charge	<b>Qgs</b>			1		nC
Gate-drain charge	<b>Qgd</b>			1.3		nC
Gate resistance	<b>Rg</b>	f=1MHz		5		Ω
<b>Switching<sup>b</sup></b>						
Turn-on delay time	<b>td(on)</b>	VDD= 10V RL=10Ω, ID ≈ 1A, VGEN= 4.5V, Rg=6Ω		7	15	ns
Rise time	<b>tr</b>			15	20	ns
Turn-off delay time	<b>td(off)</b>			15	25	ns
Fall time	<b>tf</b>			10	20	ns
<b>Drain-source body diode characteristics</b>						
Continuous Source-Drain Diode Current	<b>IS</b>	Tc=25°C			1.2	A
Pulsed Diode forward Current	<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 PACKAGE OUTLINE DIMENSIONS**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°



**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**

