

N-Channel 50-V(D-S) MOSFETS

V(BR)DSS	RDS(on)MAX	ID
50 V	2Ω @ 10V	500mA
	2.2Ω @ 4.5V	

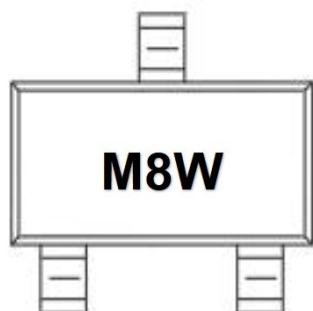
FEATURE :

- ※ TrenchFET Power MOSFET
- ※ Low On-Resistance
- ※ Low Input Capacitance
- ※ Fast Switching Speed
- ※ Low Input/Output Leakage
- ※ Lead Free By Design/RoHS Compliant

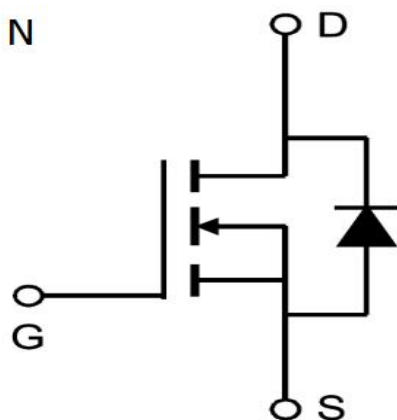
APPLICATION :

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

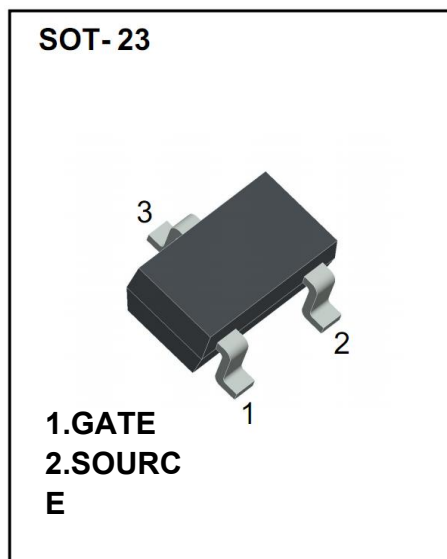
MARKING



Equivalent Circuit



SOT-23



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	50	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	500	mA
Pulsed Drain Current	IDM	1.2	A
Continuous Source-Drain Current(Diode Conduction)	IS	200	mA
Power Dissipation	PD	0.6	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	200	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	

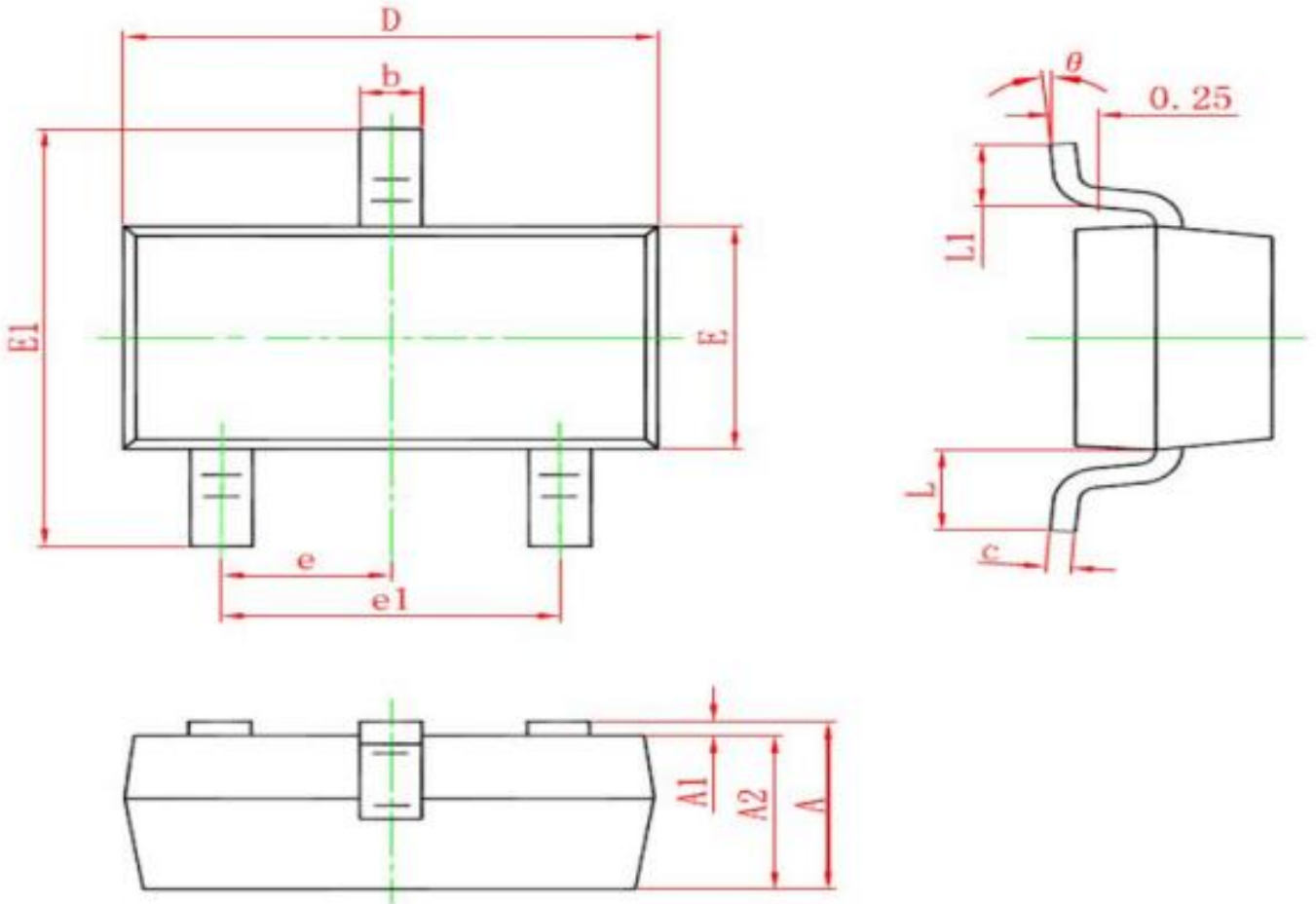
MOSFET ELECTRICAL CHARACTERISTICS
Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	50			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250μA	0.45		1.6	V
Gate-source leakage	IGSS	VDS = 0V, VGS = ±20V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 50V, VGS = 0V			0.5	μA
Drain-source on-state resistancea	RDS(on)	VGS = 10V, ID = 500mA		1.2	2	Ω
		VGS = 4.5V, ID = 200mA		1.3	2.2	Ω
Forward transconductancea	gfs	VDS = 10V, ID = 0.2A	80			mS
Diode forward voltage	VSD	IS=0.5A,VGS=0V		0.85	1.5	V
Dynamic						
Input capacitance	Ciss	VDS = 10V, VGS = 0V, f=1MHz		22		pF
Output capacitance	Coss			6		pF
Reverse transfer capacitanceb	Crss			4		pF
Total gate charge	Qg	VDS = 25V, VGS = 10V, ID = 0.5A		800		nC
Gate-source charge	Qgs			100		nC
Gate-drain charge	Qgd			100		nC
Gate resistance	Rg	f=1MHz		49		Ω
Switchingb						
Turn-on delay time	td(on)	VDD= 25V RL=25Ω, ID = 0.5A, VGEN= 10V,Rg=50Ω		3		ns
Rise time	tr			3.1		ns
Turn-off delay time	td(off)			9.5		ns
Fall time	tf			8.3		ns
Drain-source body diode characteristics						
Continuous Source-Drain Diode Current	IS	Tc=25°C			0.194	A
Pulsed Diode forward Curren	ISM				1.2	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	0.95TYP		0.037TYP	
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
θ	0°	8°	0°	8°