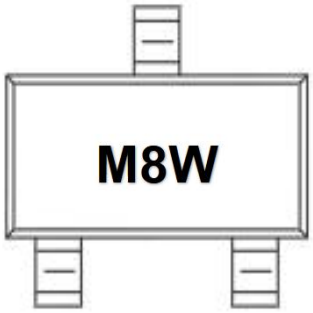
N-Channel 50-V(D-S) MOSFETS

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

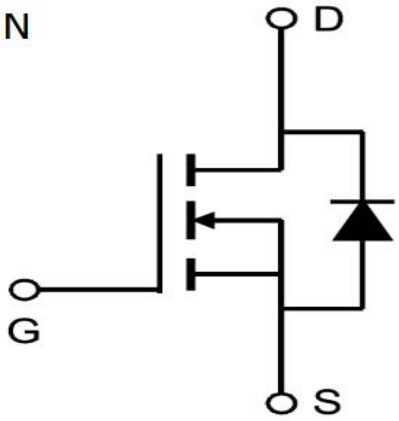
FEATURE :
※ TrenchFET Power MOSFET
※ Low On-Resistance
※ Low Input Capacitance
※ Fast Switching Speed
※ Low Input/Output Leakage
※ Lead Free By Design/RoHS Compliant

APPLICATION :
※ Load Switch for Portable Devices
※ DC/DC Converter

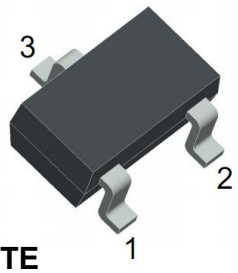
MARKING



Equivalent Circuit



SOT- 23



1.GATE
2.SOURCE

Maximum ratings (Ta=25℃ 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	℃/W
Operating Junction	**TJ**	150	℃
Storage Temperature	**TSTG**	-55~+150	

MOSFET ELECTRICAL CHARACTERISTICS

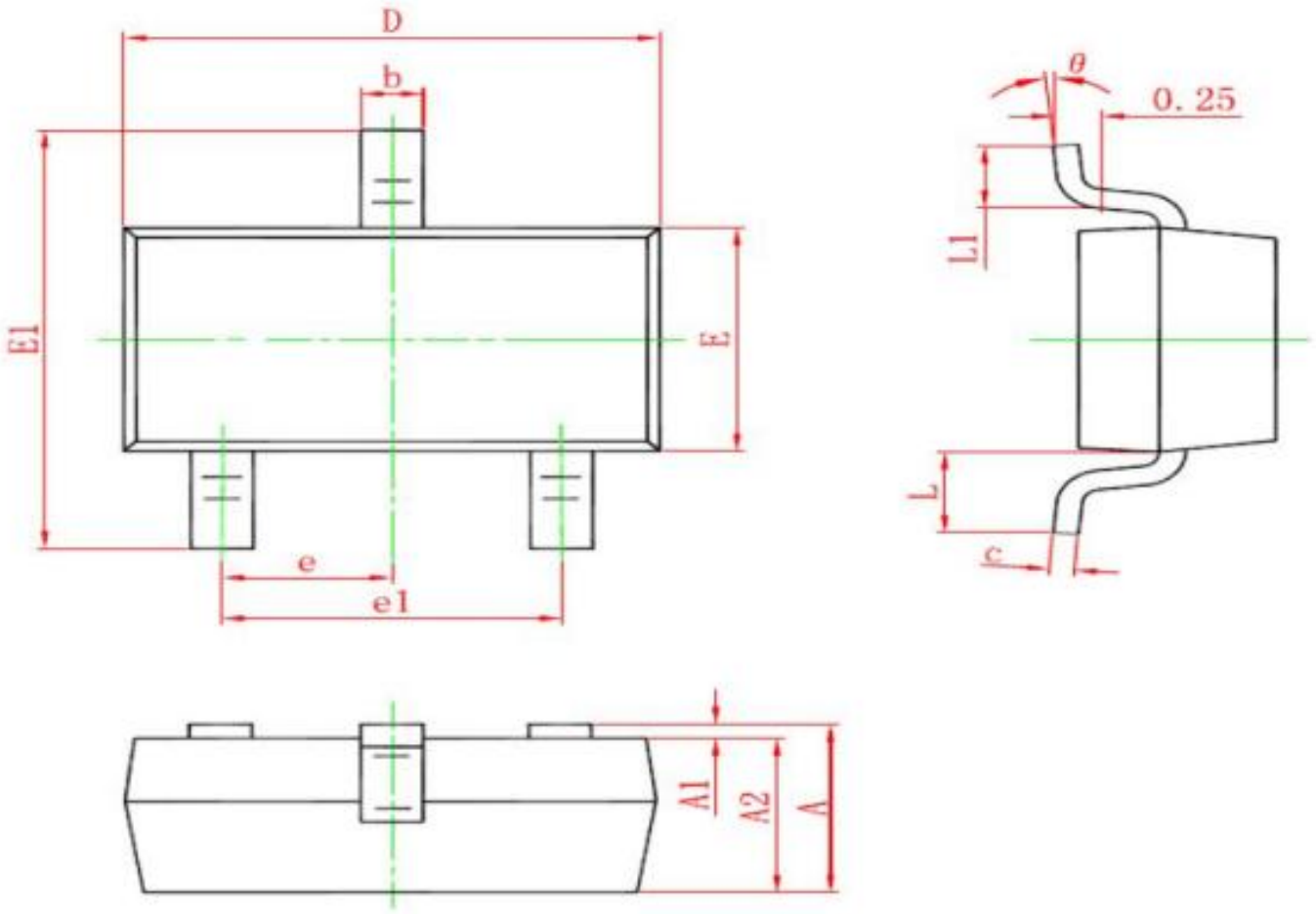
Static Electrical Characteristics (Ta = 25 ℃ Unless Otherwise Noted)

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℃			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°