

## N-Channel 20-V(D-S) MOSFET

V(BR)DSS	RDS(on)MAX	ID
20 V	310mΩ@ 4.5V	0.9A
	360mΩ@ 2.5V	
	460mΩ@ 1.8V	

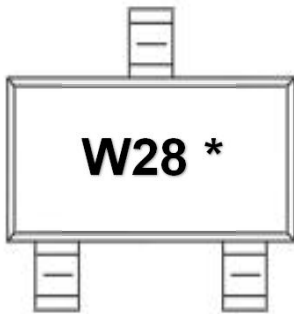
### FEATURE

- TrenchFET Power MOSFET
- Supper high density cell design
- Extremely Low Threshold Voltage
- Excellent ON resistance for higher DC current

### APPLICATION

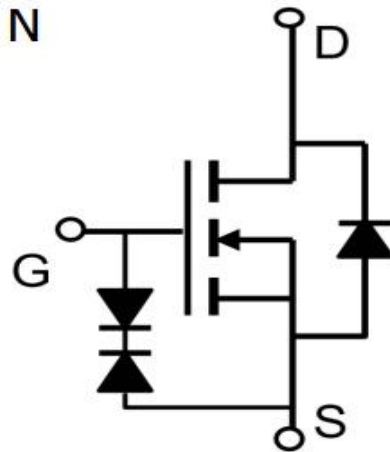
- ※ Load Switch for Portable Devices
- ※ DC/DC Converter
- ※ Power Switch

### MARKING

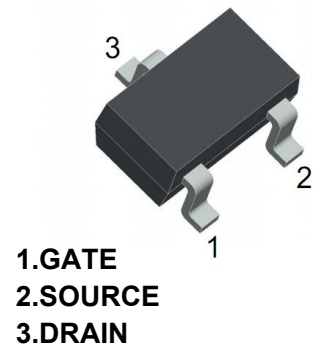


W28 = Device Code  
\* = Month (A~Z)

### Equivalent Circuit



### SOT-23



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	20	V
Gate-Source Voltage	VGS	±6	
Continuous Drain Current	ID	0.9	A
Pulsed Diode Curren	IDM	1.4	
Power Dissipation	PD	1	W
Thermal Resistance from Junction to Ambient (t≤10s)	RθJA	270	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	°C

### MOSFET ELECTRICAL CHARACTERISTICS

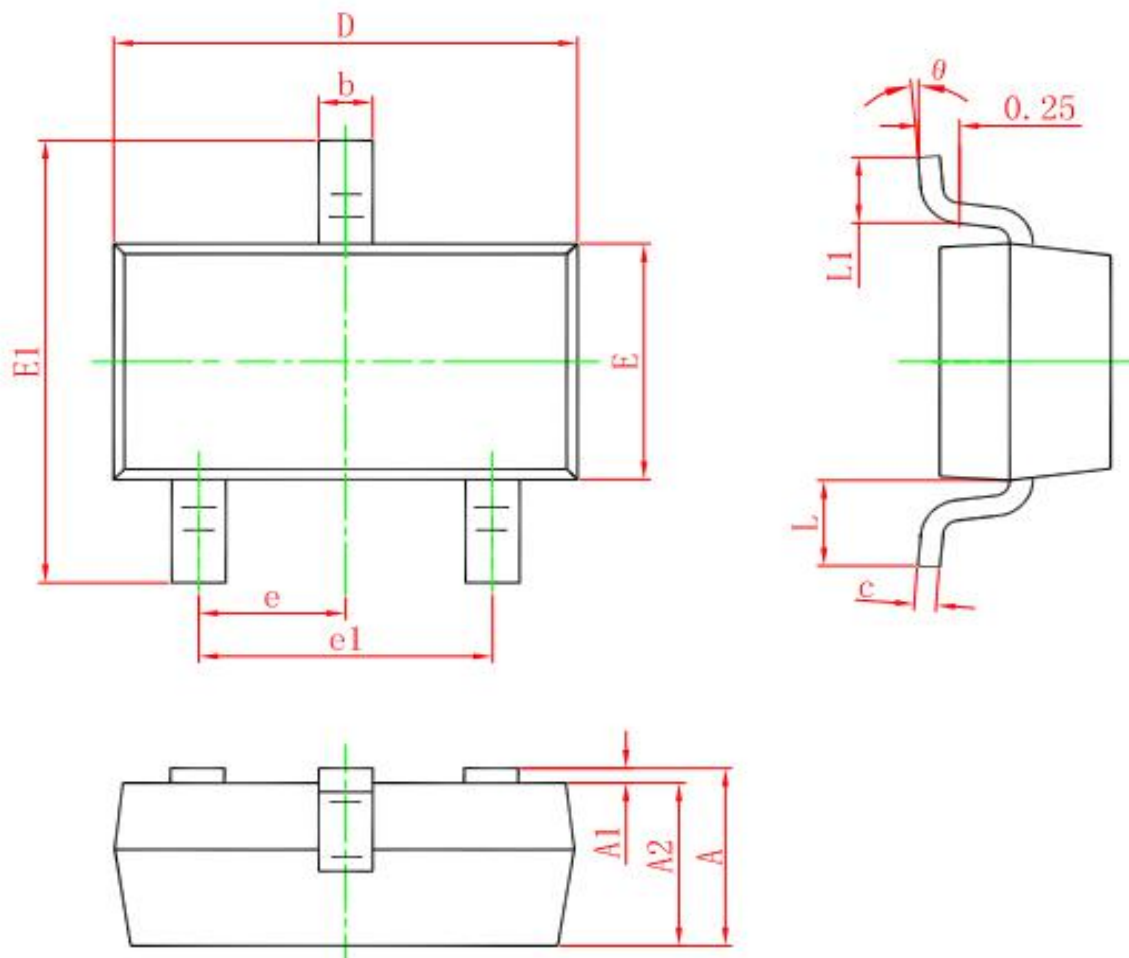
#### Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	20			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250μA	0.4		1	V
Gate-source leakage	IGSS	VDS = 0V, VGS = ±8V			±5	μA
Zero gate voltage drain current	IDSS	VDS = 16V, VGS = 0V			1	μA
Drain-source on-state resistancea	RDS(on)	VGS = 4.5V, ID = 0.55A		220	310	mΩ
		VGS = 2.5V, ID = 0.45A		260	360	mΩ
		VGS = 1.8V, ID = 0.35A		320	460	mΩ
Forward transconductancea	gfs	VDS = 4.5V, ID = 3.2A		2		S
Diode forward voltage	VSD	IS=1A,VGS=0V		0.8	1.5	V
<b>Dynamic</b>						
Input capacitance	Ciss	VDS = 10V, VGS = 0V, f=1KHz		50		pF
Output capacitance	Coss			13		pF
Reverse transfer capacitanceb	Crss			8		pF
Total gate charge	Qg	VDS = 10V, VGS = 4.5V, ID = 0.9A		1.2		nC
Gate-source charge	Qgs			0.15		nC
Gate-drain charge	Qgd			0.23		nC
Gate resistance	Rg	f=1KHz	0.3		1	Ω
<b>Switchingbtr</b>						
Turn-on delay time	td(on)	VDS= 10V RL=3.5Ω, ID ≈ 0.55A, VGEN= 4.5V,Rg=3Ω		22		ns
Rise time	tr			80		ns
Turn-off delay time	td(off)			700		ns
Fall time	tf			380		ns
<b>Drain-source body diode characteristicstr</b>						
Continuous Source-Drain Diode Current	IS	Tc=25°C			1.2	A
Pulsed Diode forward Curren	ISM				10	A

#### Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 10 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°