



SHENZHEN LONG JING MICRO-ELECTRONICS CO., LTD.

SOT-23 Plastic-Encapsulate MOSFETs

SI2300

N-Channel 20V(D-S) MOSFET

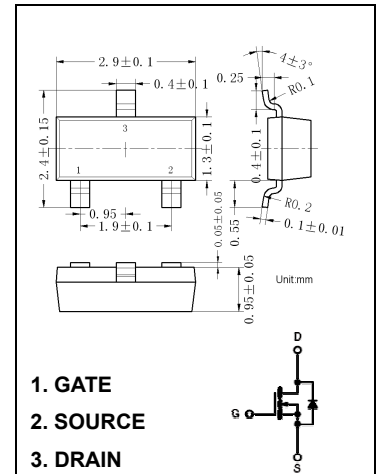
Features

- TrenchFET Power MOSFET

Application

- Load Switch for Portable Devices
- DC/DC Converter

Marking : AOSHB



Maximum Ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-source voltage	20	V
V_{GS}	Gate-source voltage	± 10	V
I_D	Continuous drain current	2.9	A
I_S	Continuous Source-Drain Current(Diode Conduction)	0.6	
P_D	Power dissipation	0.4	W
T_J	Operating Junction	150	$^\circ\text{C}$
T_{stg}	Storage temperature	-55 to 150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient ($t \leq 5s$)	312.5	$^\circ\text{C/W}$

Electrical Characteristics ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain- source breakdown voltage	$V_{GS} = 0\text{ V}, I_D = 10\mu\text{A}$	20			V
$V_{GS(th)}$	Gate threshold voltage	$V_{GS}=V_{DS}, I_D = 50\mu\text{A}$	0.50	0.95	1.2	
I_{DSS}	Zero gate voltage drain current	$V_{DS} = 20\text{ V}, V_{GS} = 0\text{ V}$			1	μA
I_{GSS}	Gate-body leakage current	$V_{GS} = \pm 10\text{ V}, V_{DS} = 0\text{ V}$			± 100	nA
$R_{DS(on)}$	Drain-Source on-state resistance ^a	$V_{GS} = 4.5\text{ V}, I_D = 2.9\text{ A}$		33	45	m Ω
		$V_{GS} = 2.5\text{ V}, I_D = 2.5\text{ A}$		37	59	
g_{fs}	Forward transconductance ^a	$V_{DS} \geq 5\text{ V}, I_D = 2.9\text{ A}$		8		S
V_{SD}	Diode forward voltage	$V_{GS} = 0\text{ V}, I_S = 0.94\text{ A}$		0.76	1.2	V
Dynamic						
C_{iss}	Input capacitance ^b	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V},$ $f = 1\text{ MHz}$		300		pF
C_{oss}	Output capacitance ^b			120		
C_{rss}	Reverse transfer capacitance ^b			80		

Q_g	Total gate charge	V_{DS} =10V,V_{GS}=4.5V, I_D =3.6A		4.0	10	nC
Q_{gs}	Gate-source charge			0.65		
Q_{gd}	Gate-drain charge			1.5		
Switching^b						
t_{d(on)}	Turn-on delay time	V_{DD}=10V, R_L=5.5Ω, I_D≈3.6A, V_{GEN}=4.5V,R_g=6Ω		7	15	ns
t_r	Rise time			55	80	
t_{d(off)}	Turn-off delay time			16	60	
t_f	Fall time			10	25	

Notes :

a. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

b. These parameters have no way to verify.

Typical Characteristics

