HUIZHOU JINSANE ELECTRONICS CO., LTD

SOT-23 Plastic-Encapsulate MOSFETS
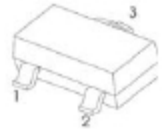
2302 N-Channel 20-V(D-S) MOSFET

FEATURE
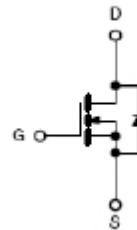
TrenchFET Power MOSFET

APPLICATIONS

Load Switch for Portable Devices

DC/DC Converter

SOT-23

1. GATE
2. SOURCE
3. DRAIN

Maximum ratings (T$_a$=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	
Continuous Drain Current	I_D	2.1	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (t≤5s)	$R_{\theta JA}$	357	℃/W
Operating Junction	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~+150	

Electrical characteristics (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID =10µA	20			V
Gate-threshold voltage	VGS(th)	VDS =VGS, ID =50µA	0.65	0.95	1.2	
Gate-body leakage	IGSS	VDS =0V, VGS =±8V			±100	nA
Zero gate voltage drain current	IDSS	VDS =20V, VGS =0V			1	µA
Drain-source on-resistance[a]	rDS(on)	VGS =4.5V, ID =3.6A		0.045	0.060	Ω
		VGS =2.5V, ID =3.1A		0.070	0.115	
Forward transconductance[a]	gfs	VDS =5V, ID =3.6A		8		S
Diode forward voltage	VSD	IS=0.94A,VGS=0V		0.76	1.2	V
Dynamic						
Total gate charge	Qg			4.0	10	
Gate-source charge	Qgs	VDS =10V,VGS =4.5V,ID =3.6A		0.65		nC
Gate-drain charge	Qgd			1.5		
Input capacitance [b]	Ciss			300		
Output capacitance [b]	Coss	VDS =10V,VGS =0V,f=1MHz		120		pF
Reverse transfer capacitance[b]	Crss			80		
Switching[b]						
Turn-on delay time	td(on)	VDD=10V,		7	15	
Rise time	tr	RL=5.5Ω, ID ≈3.6A,		55	80	ns
Turn-off delay time	td(off)	VGEN=4.5V,Rg=6Ω		16	60	
Fall time	tf			10	25	

Notes :

a. Pulse Test : Pulse width≤300µs, duty cycle ≤2%.

b. These parameters have no way to verify.