



MT2302 Plastic-Encapsulate MOSFETS

FEATURE

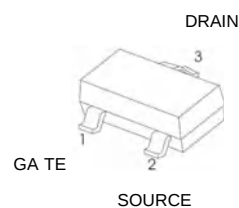
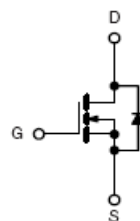
TrenchFET Power MOSFET

APPLICATIONS

Load Switch for Portable Devices

DC/DC Converter

MARKING: 2302



SOT-23

Maximum ratings ($T_a=25^{\circ}\text{C}$ 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	2.3	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Operating Junction	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~+150	



Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =10μA	20			V
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	0.5	0.65	1.0	
Gate-body leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Drain-source on-resistance ^a	r _{DS(on)}	V _{GS} =4.5V, I _D =2.5A		0.055	0.085	Ω
		V _{GS} =2.5V, I _D =2.1A		0.070	0.125	
Forward transconductance ^a	g _{fs}	V _{DS} =5V, I _D =2.5A		8		S
Diode forward voltage	V _{SD}	I _S =0.94A,V _{GS} =0V		0.76	1.2	V
Dynamic						
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =2.5A		4.0	10	nC
Gate-source charge	Q _{gs}			0.65		
Gate-drain charge	Q _{gd}			1.5		
Input capacitance ^b	C _{iSS}	V _{DS} =10V,V _{GS} =0V,f=1MHz		300		pF
Output capacitance ^b	C _{oSS}			120		
Reverse transfer capacitance ^b	C _{rSS}			80		
Switching ^b						
Turn-on delay time	t _{d(on)}	V _{DD} =10V, R _L =5.5Ω, I _D ≈2.5A, V _{GEN} =4.5V,R _g =6Ω		7	15	ns
Rise time	t _r			55	80	
Turn-off delay time	t _{d(off)}			16	60	
Fall time	t _f			10	25	

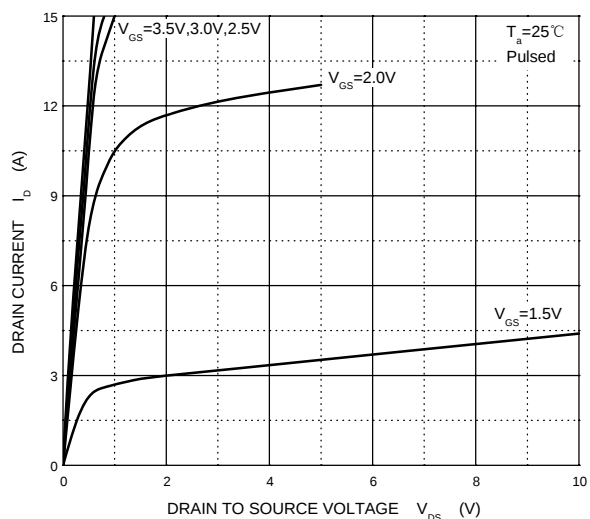
Notes :

- Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
- These parameters have no way to verify.

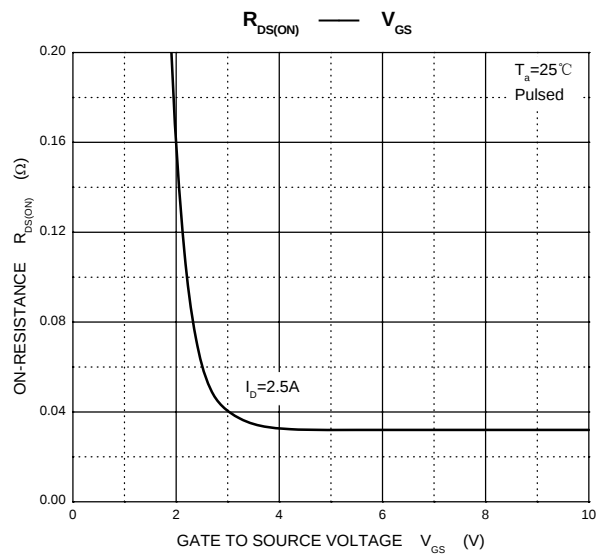
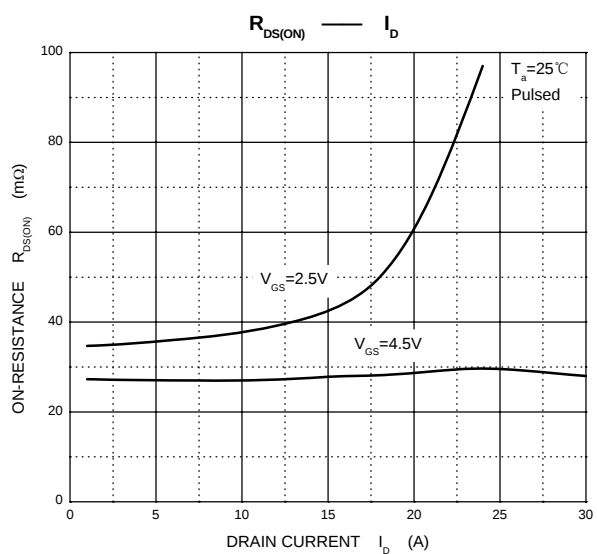
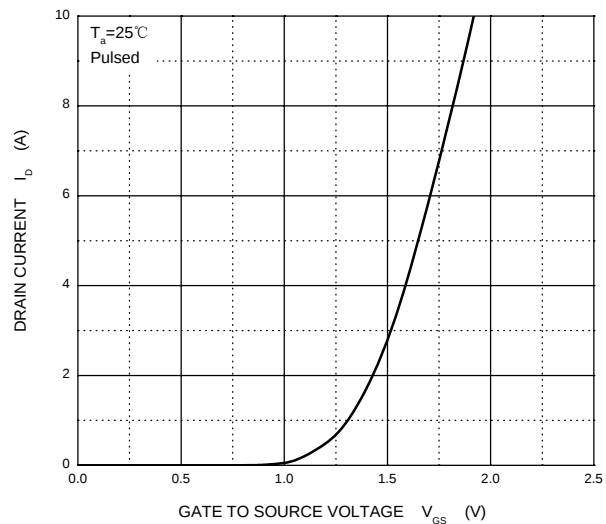


Typical Characteristics

Output Characteristics



Transfer Characteristics

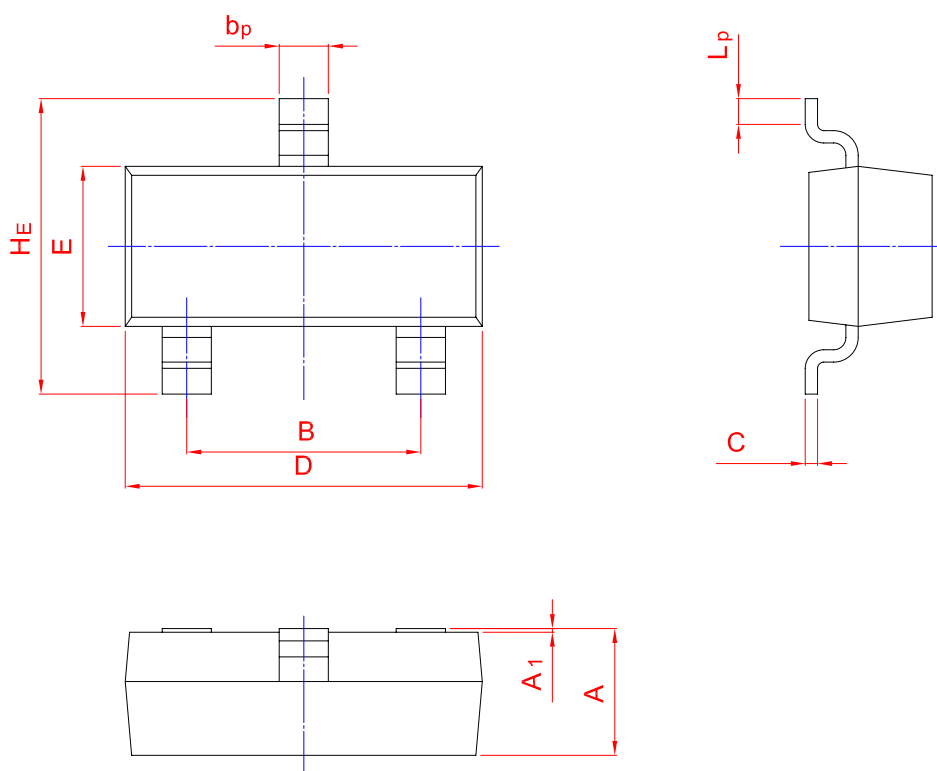
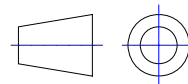




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20