

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	28mΩ@4.5V	3.5A
	33mΩ@2.5V	

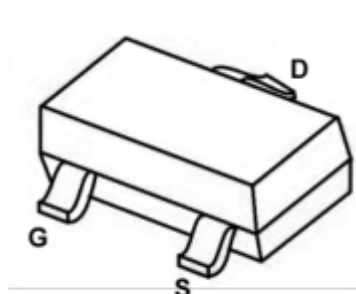
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Applications

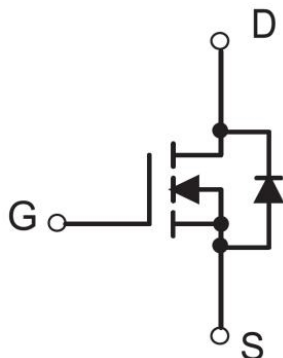
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

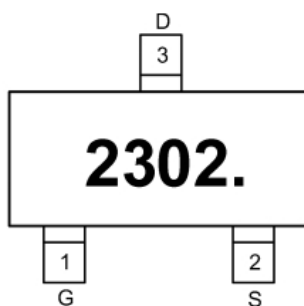


SOT-23

Circuit diagram



Marking



2302. =Device Code

Absolute 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	V
Continuous Drain Current	I_D	3.5	A
Plused Drain Current	I_{DM}	14	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

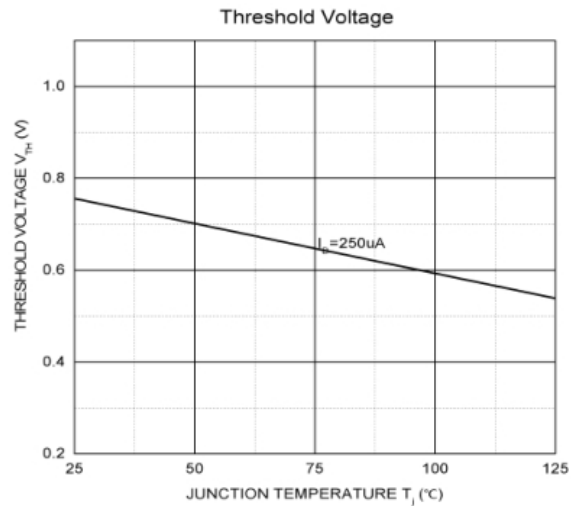
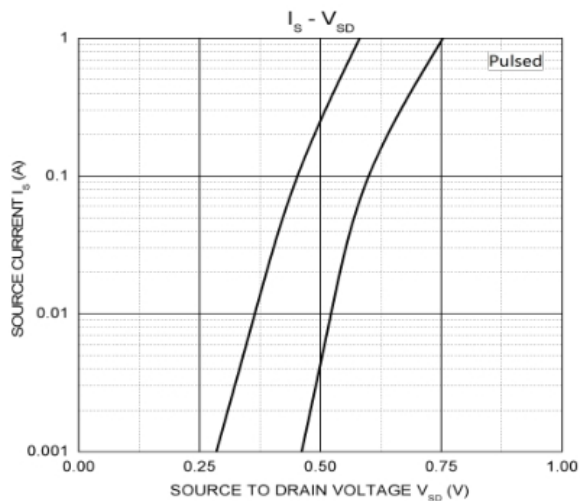
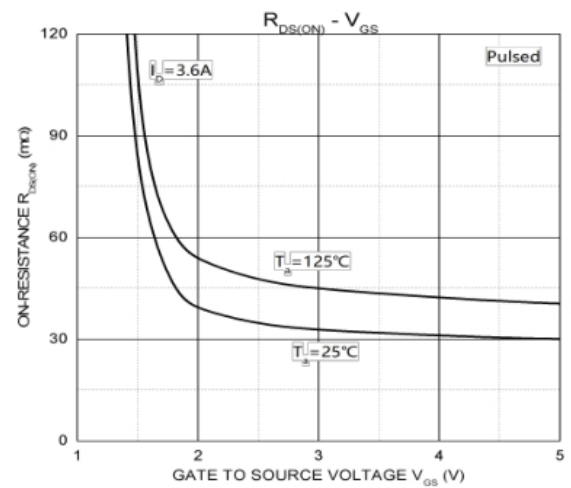
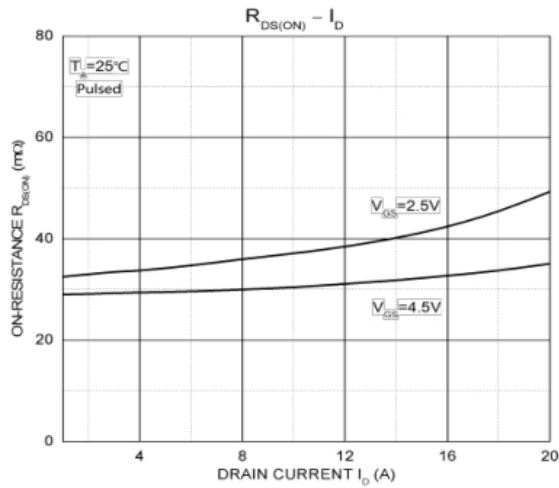
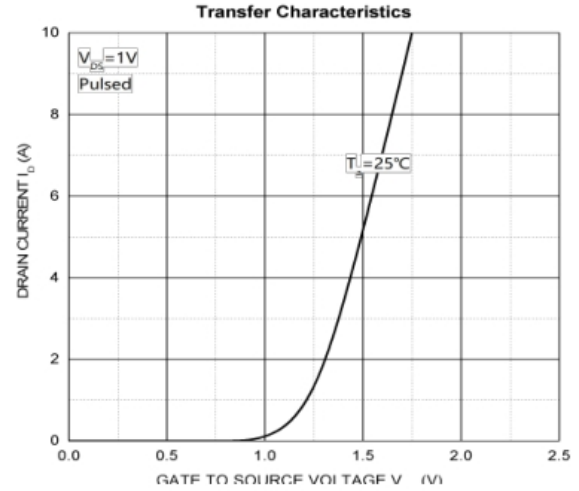
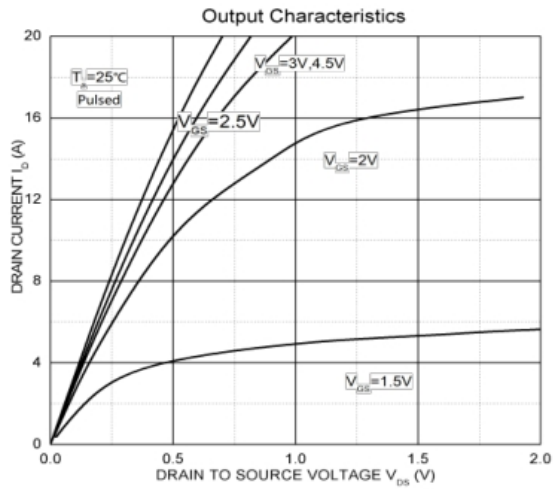
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} = ±8V, V _{DS} = 0V			±0.1	uA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.55	0.7	1	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =3.6A		28	45	mΩ
		V _{GS} =2.5V, I _D =3.1A		33	60	
Forward tranconductance1)	g _{FS}	V _{DS} =5V, I _D =3.6A	5			S
Dynamic Characteristics						
Input capacitance ²⁾	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		300		pF
Output capacitance ²⁾	C _{oss}			120		
Reverse transfer capacitance ²⁾	C _{rss}			80		
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =3.6A		4.0	10	nC
Gate-Source Charge	Q _{gs}			0.65		
Gate-Drain Charge	Q _{gd}			1.5		
Switching Characteristics ²⁾						
Turn-on Delay Time	T _{d(on)}	V _{DD} =10V, R _L =5.5Ω, I _D =3.6A, V _{GEN} =4.5V, R _{GEN} =6Ω		7	15	nS
Turn-on Rise Time	T _r			55	80	
Turn-Off Delay Time	T _{d(off)}			16	60	
Turn-Off Fall Time	t _f			10	25	
Source-Drain Diode Characteristics						
Diode Forward voltage	V _{DS}	I _S =1A, V _{GS} = 0V		0.76	1.2	V

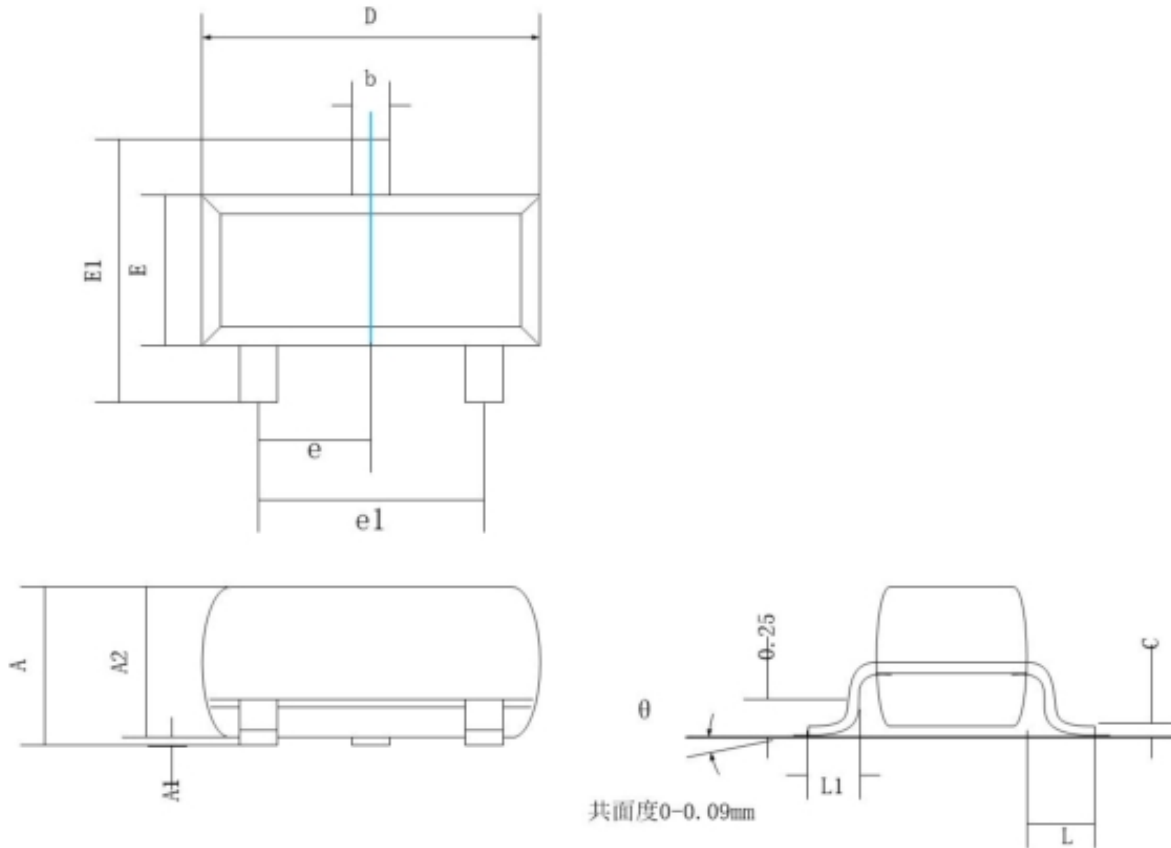
Notes:

1. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. These parameters have no way to verify.

Typical Characteristics



SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°