2N7002KB规格书 V1.0

N-Channel Trench Power MOSFET

ZLW-QW-EN-G132

台湾卓朗微科有限公司
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Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	2.8Ω@10V	340mA
	3.2Ω@4.5V	

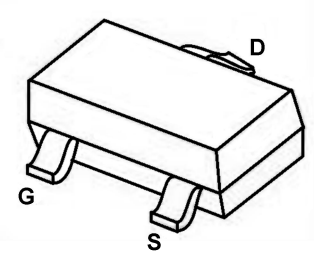
Feature

- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding
- ESD protected Gate HBM 1500V

Application

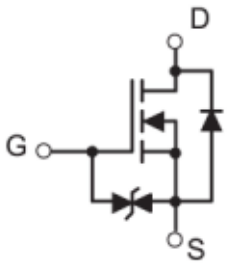
- Power Management in Note book
- Portable Equipment
- Battery Powered System

Package



SOT-23

Circuit diagram



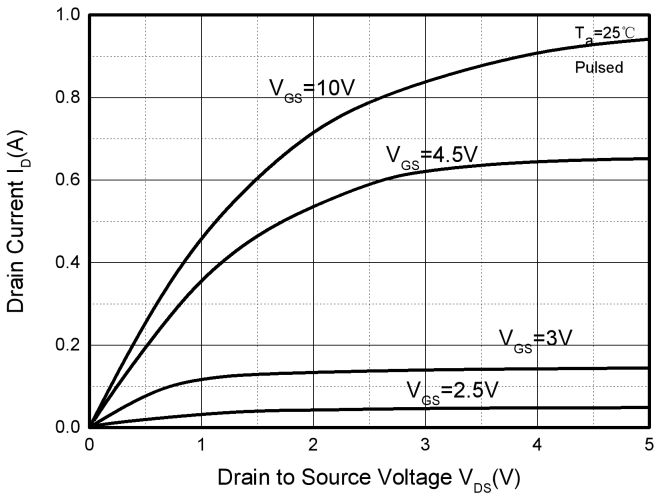
Absolute maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	340	mA
Power Dissipation	P_D	0.35	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

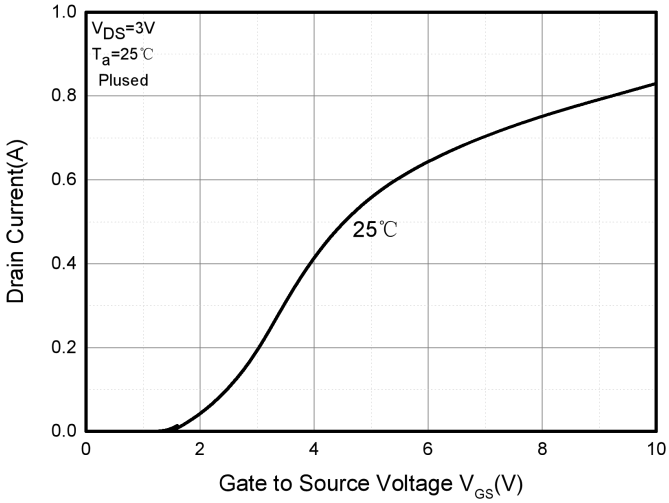
Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1	1.5	2.5	V
Gate-Body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=500mA		1.6	2.8	Ω
		V_{GS}=4.5V, I_D=200mA		2.3	3.2	
Diode Forward Voltage	V_{SD}	I_S=200mA, V_{GS}=0V		0.82	1.3	V
Dynamic characteristics						
Total Gate Charge	Qg	V_{DS}=15V, V_{GS}=4.5V, I_D=200mA		1.5		nC
Gate-Source Charge	Qgs			1.9		
Gate-Drain Charge	Qgd			0.4		
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1MHz		28		pF
Output Capacitance	Coss			9		
Reverse Transfer Capacitance	Crss			2		
Switching Characteristics						
Turn-On Delay Time	td(on)	V_{DD}=30V, R_L =150Ω I_D=200mA, V_{GEN}=10V, R_G=10Ω		8.5		ns
Turn-On Rise Time	tr			6		
Turn-Off Delay Time	td(off)			31.8		
Turn-Off Fall Time	tf			15.5		

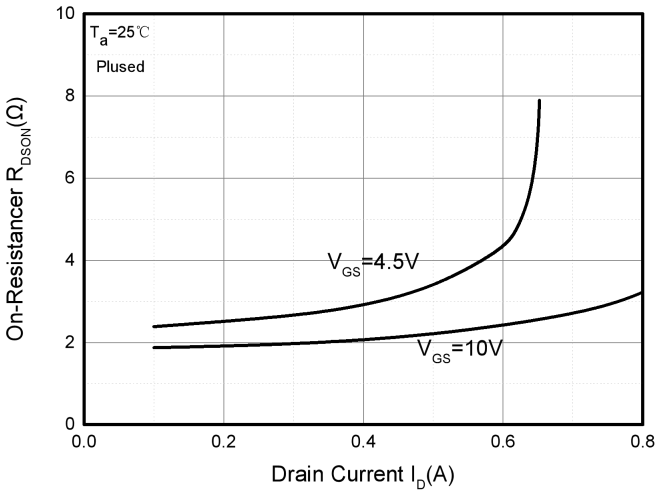
Typical Characteristics



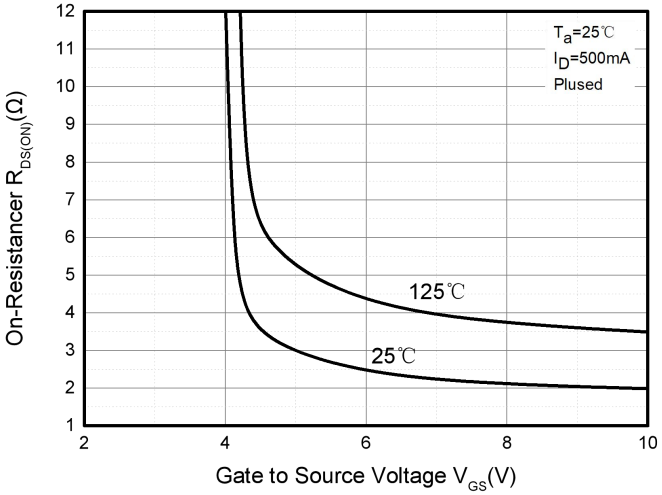
Output Characteristics



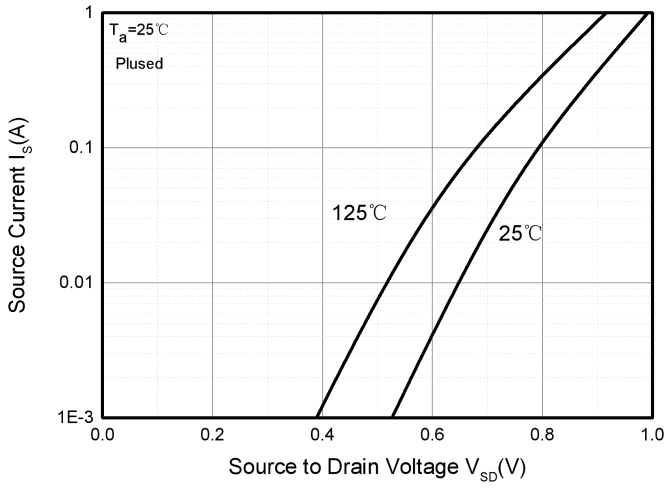
Transfer Characteristics



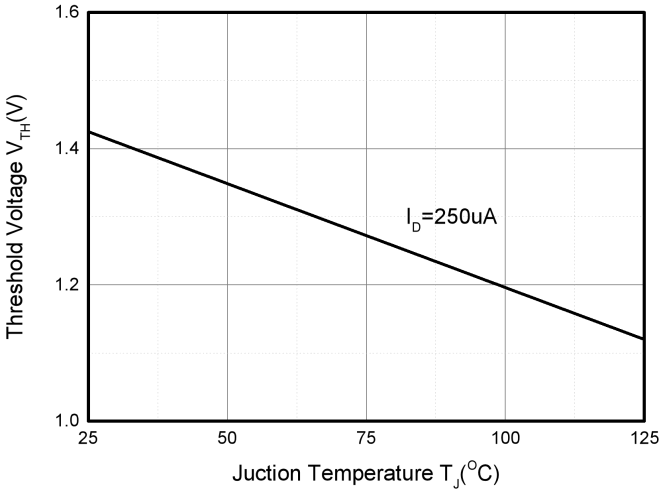
On-Resistance vs. Drain current



On-Resistance vs. Gate to Source Voltage

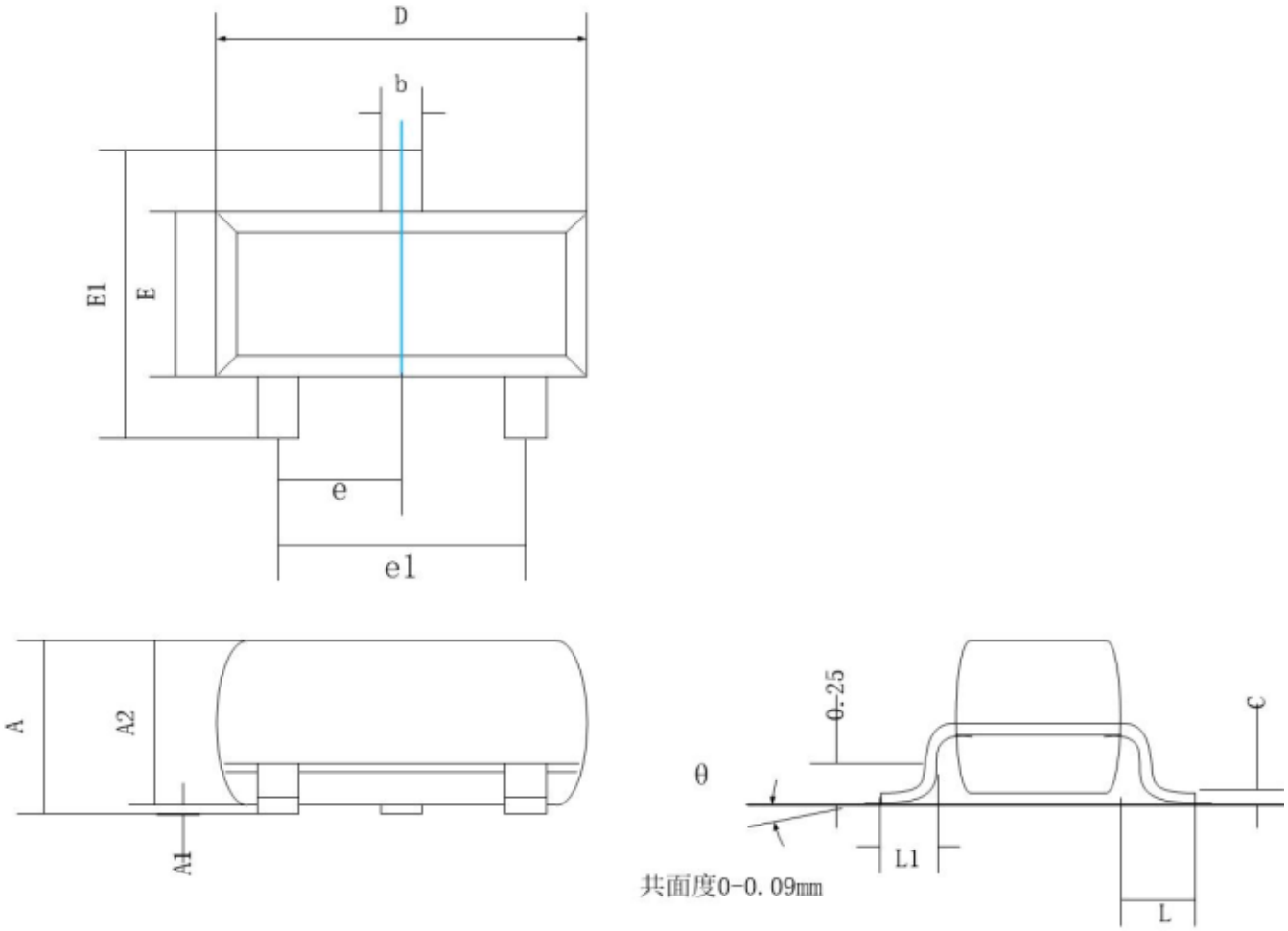


Source Current vs. Source to Drain Voltage



Threshold voltage vs. Junction temperature

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°