



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	1.6Ω@10V	340mA
	2.3Ω@4.5V	

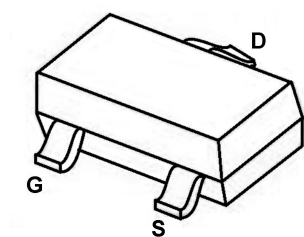
Feature

- 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

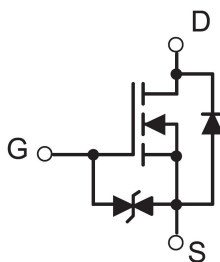
- Power Management in Note book
- Portable Equipment
- Battery Powered System

Package

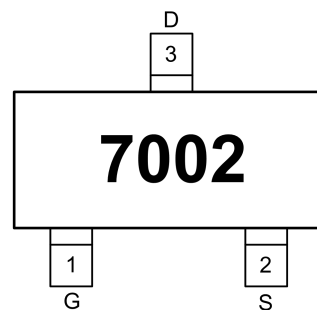


SOT-23

Circuit diagram



Marking



7002 =Device Code

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

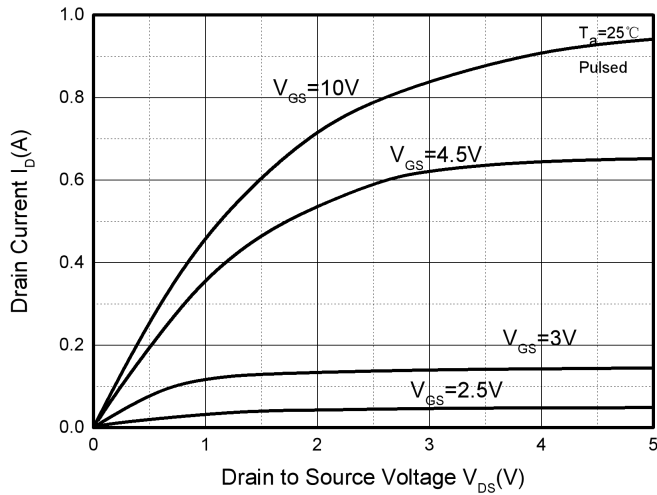
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	340	mA
Power Dissipation	P_D	0.35	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

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

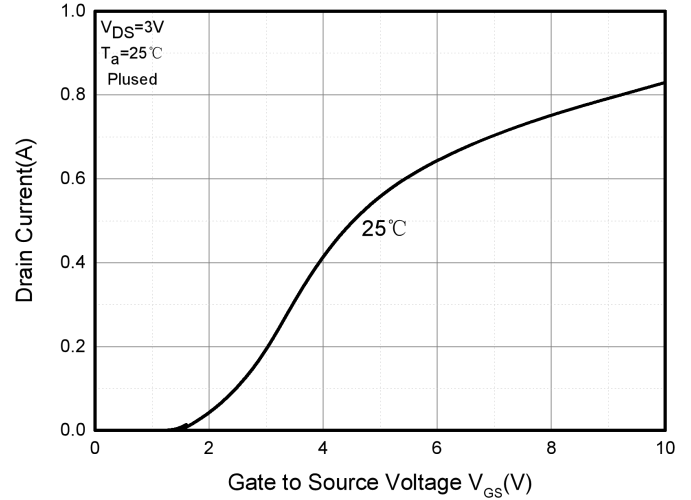
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.5	V
Gate-Body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±10	μA
Zero Gate 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		



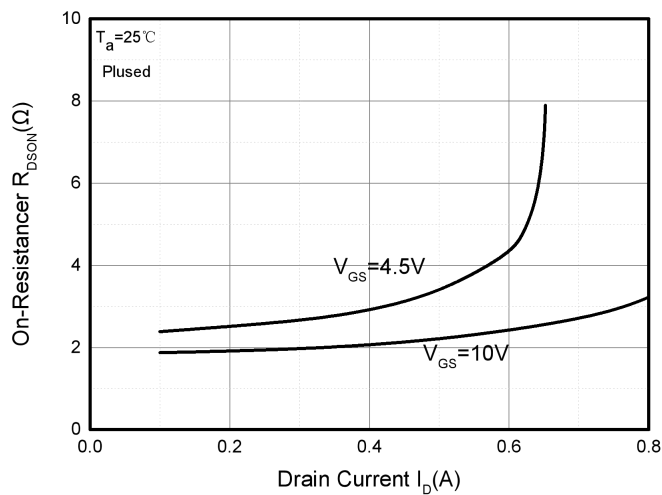
Typical Characteristics



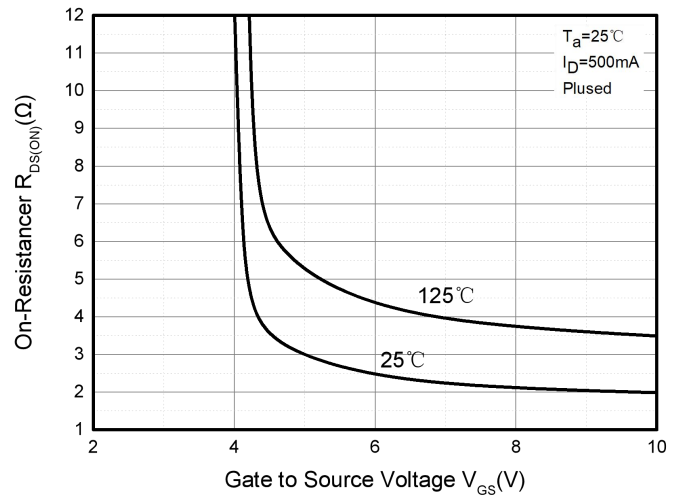
Output Characteristics



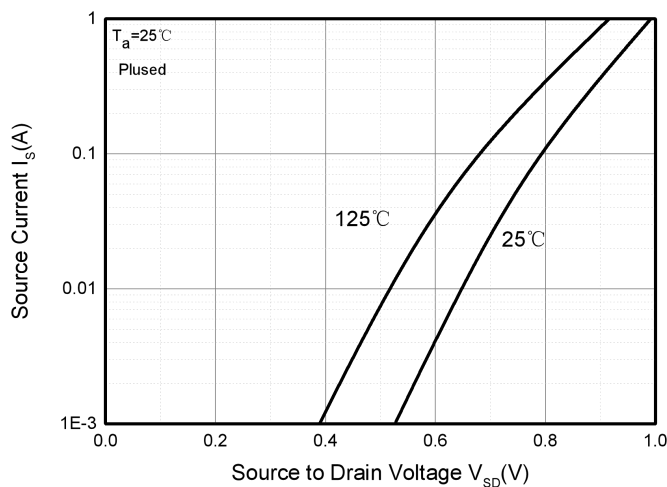
Transfer Characteristics



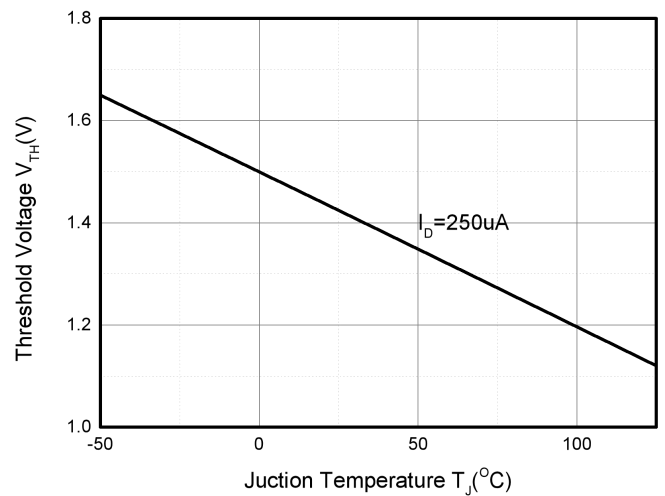
On-Resistance vs. Drain current



On-Resistance vs. Gate to Source Voltage



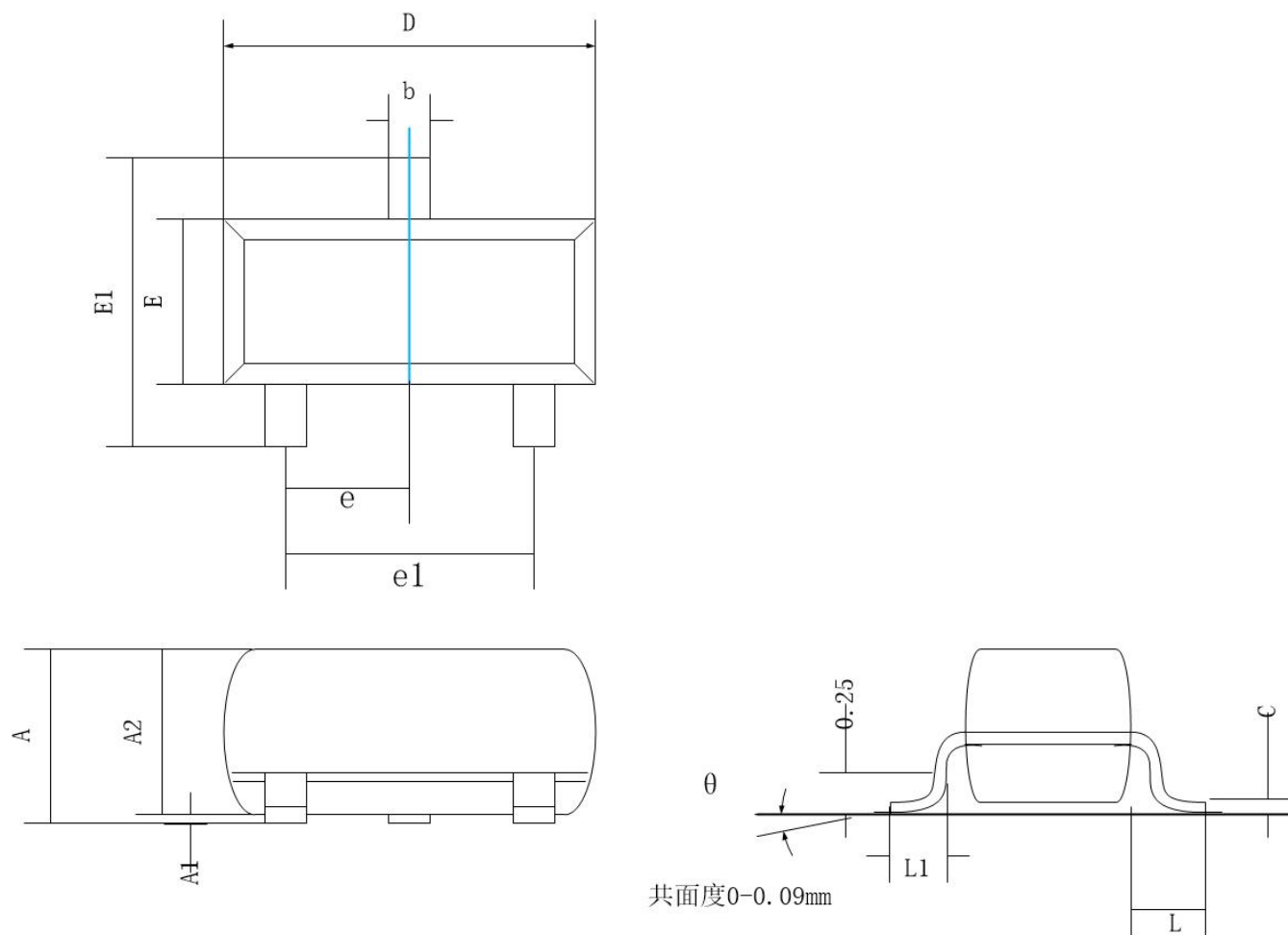
Source Current vs. Source to Drain Voltage



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°