VUSG003R30BNB

Datasheet

General Description

$V_{(BR)DSS}$	$R_{DS(ON)\_max}$	I_D
30V	3.0Ω@4V	0.1A
	4.5Ω@2.5V	

Symbol

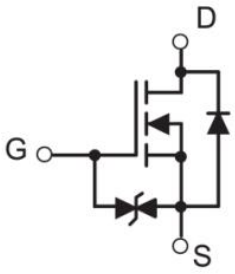


Figure 1 Symbol of VUSG003R30BNB

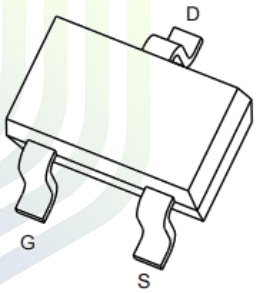
Features

- High density cell design for Low $R_{DS(on)}$
- Voltage controlled small signal switch
- Rugged and reliable
- Parallel use is easy
- ESD protected

Application

- Load Switch
- Battery Switch

Package Type



SOT-323

Figure 2 Package Type of VUSG003R30BNB

Ordering Information

Product Name	Package
VUSG003R30BNB	SOT-323

Absolute Maximum Ratings (T_A= 25 ºC, unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current Note1	I_D	0.1	A
Total Power Dissipation Note1	P_D	0.15	W
Junction Temperature	T_J	150	ºC
Storage Temperature	T_{STG}	-55 to 150	ºC

Thermal Resistance

Parameter	Symbol	Min	Typ	Max	Unit
Thermal Resistance, Junction-to-Ambient Note1	$R_{\theta JA}$		833		ºC/W

Electrical Characteristics (T_A= 25 ºC, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Statistic Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D= 250uA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 30V, V_{GS}=0V			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS}= 0V			±2	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	0.6		1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= 4V, I_D= 10mA		1.1	3.0	Ω
		V_{GS}= 2.5V, I_D= 1mA		1.2	4.5	
Forward tranconductance	g_{FS}	V_{DS}= 3V, I_D= 10mA	20			mS
Dynamic Characteristics						
Input Capacitance	C_{ISS}	V_{DS}=5V		13		pF
Output Capacitance	C_{OSS}	V_{GS}=0V		9		pF
Reverse Transfer Capacitance	C_{RSS}	f=1MHz		4		pF
Switching Parameters						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}= 5V		15		ns
Turn-on Rise Time	t_r	V_{GS}= 5V		35		
Turn-off Delay Time	$t_{d(off)}$	I_D= 10mA		80		
Turn-off Fall Time	t_f	R_G=10Ω ,R_L=500Ω		80		

Notes :

1.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C.

Typical Performance Characteristics

Figure 3: Transfer Characteristics

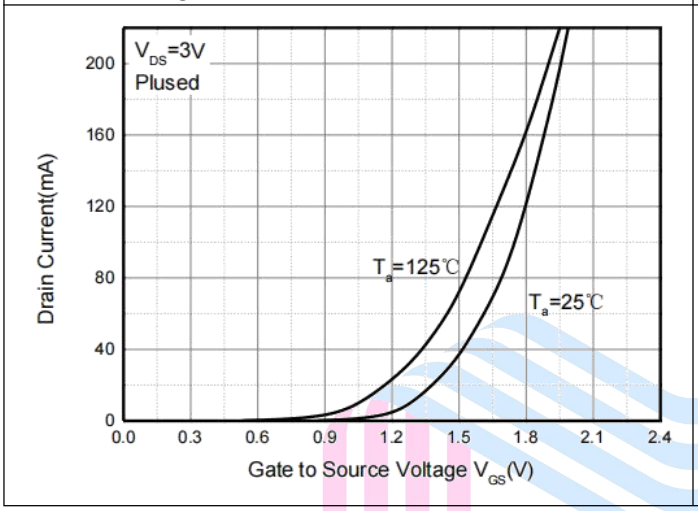


Figure 4: Output Characteristics

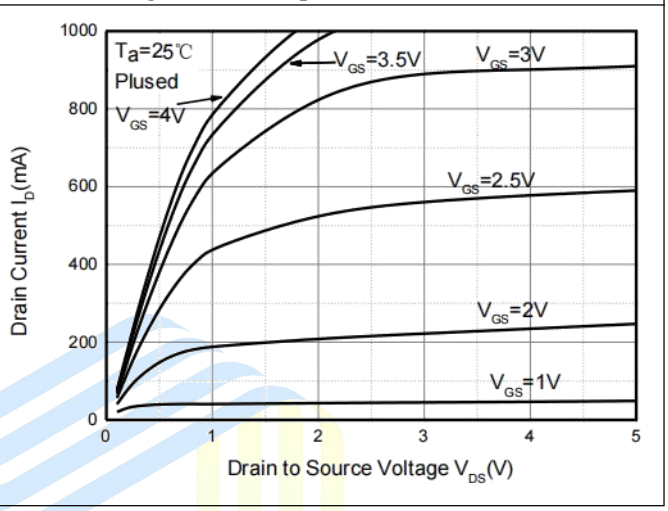


Figure 5: On-Resistance vs. Drain Current

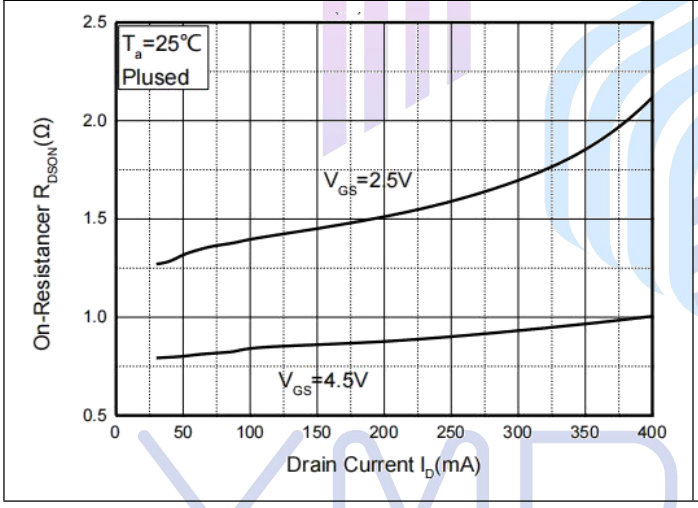


Figure 6: On-Resistance vs. Gate Voltage

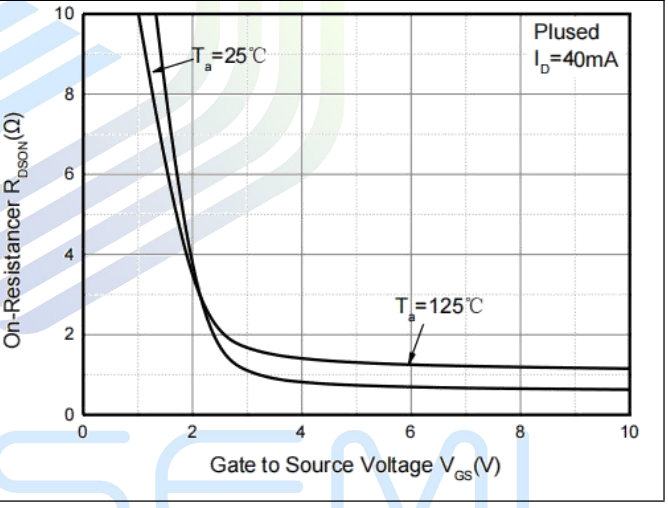
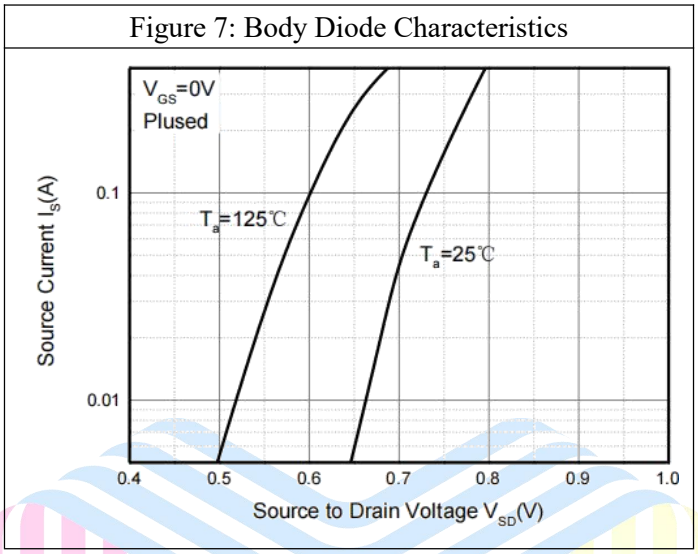
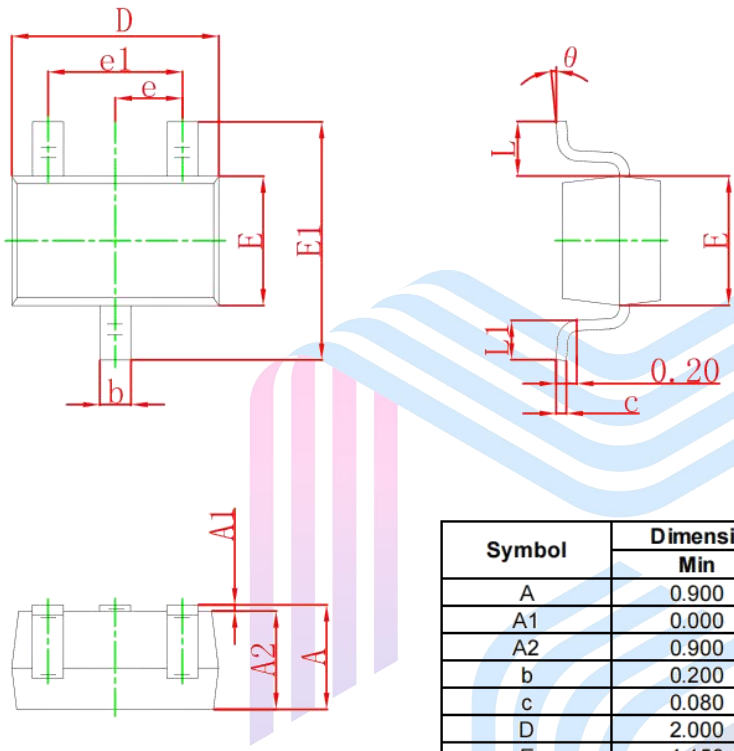


Figure 7: Body Diode Characteristics



Mechanical Dimensions:

SOT-323 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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