VUSN003R30BNA

Datasheet

General Description

$V_{(BR)DSS}$	$R_{DS(ON)\_max}$	I_D
30V	3.0Ω@4.0V	0.1A
	4.2Ω@2.5V	

Symbol

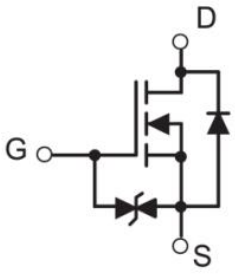
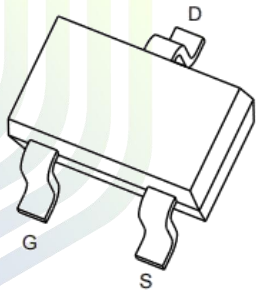


Figure 1 Symbol of VUSN003R30BNA

Features

- Excellent $R_{DS(on)}$
- Fast switching speed
- Easily designed drive circuits
- ESD Protected
- Easy to parallel

Package Type



SOT-723

Figure 2 Package Type of VUSN003R30BNA

Application

- Load Switch for Portable Devices
- Battery Switch

Ordering Information

Product Name	Package
VUSN003R30BNA	SOT-723

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	±100	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		1.4	4.2	
Forward tranconductance	g_{FS}	V_{DS}= 3V, I_D= 10mA	20			mS
Dynamic Characteristics						
Input Capacitance	C_{ISS}	V_{DS}=15V		30		pF
Output Capacitance	C_{OSS}	V_{GS}=0V		7.6		pF
Reverse Transfer Capacitance	C_{RSS}	f=1MHz		3.0		pF
Gate Resistance	Rg	f =1MHz, Open Drain		160		Ω
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

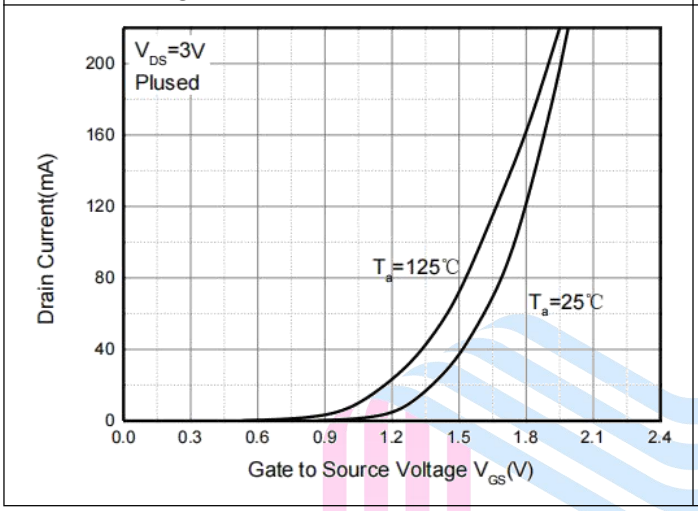


Figure 4: Output Characteristics

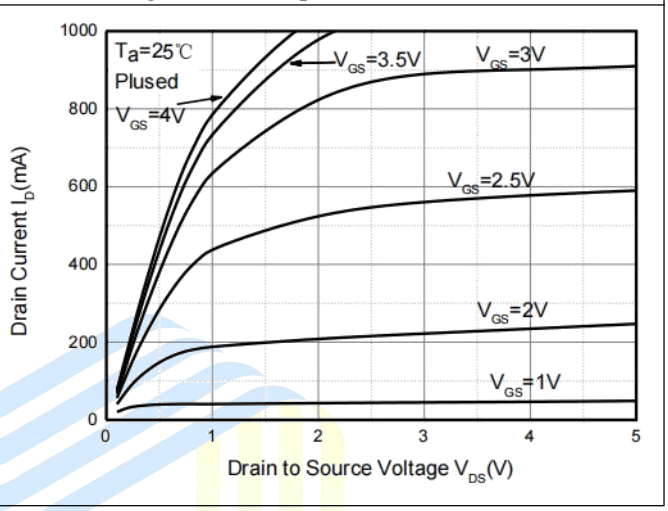


Figure 5: On-Resistance vs. Drain Current

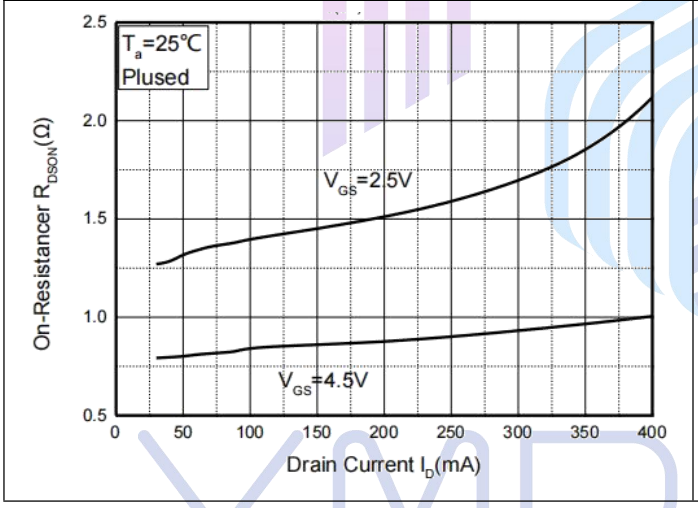


Figure 6: On-Resistance vs. Gate Voltage

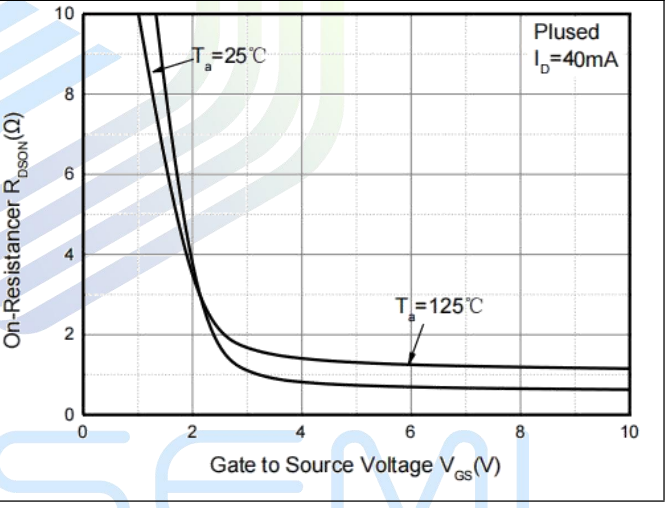
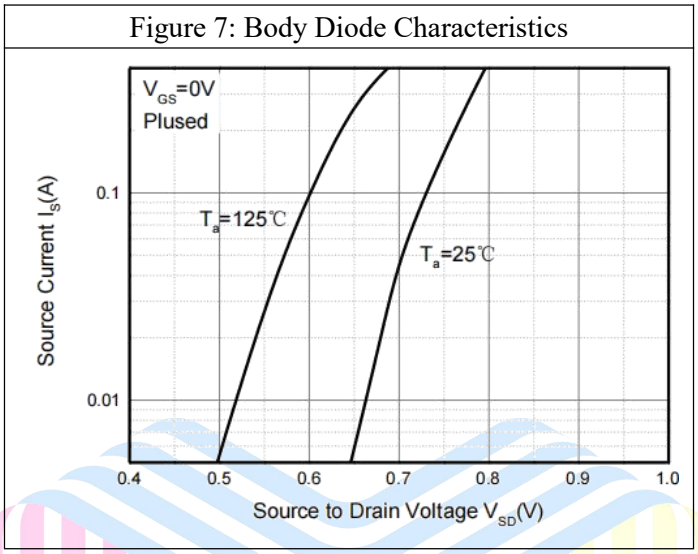
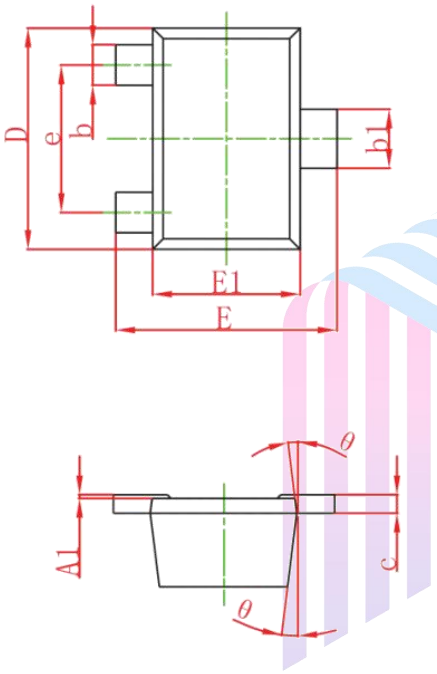


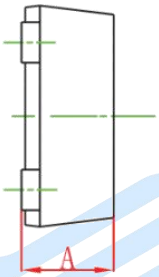
Figure 7: Body Diode Characteristics



Mechanical Dimensions:

SOT-723 Package Information





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

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Via-Media Semiconductor Limited Company

http://www.vmdsemi.com

Main Sites:

- **Headquarters**

Hangzhou Via-Media Semiconductor Co., LTD.
1305-1306, Building 71, No. 90, Wensan Road, Xihu District, Hangzhou, Zhejiang Province, P.R. China
Tel: +86-0571-8515 0563

- **Chengdu Office**

Chengdu Winhi Semiconductor Co., LTD.
Floor 15, Building 5, No. 171, Hele 2nd Street, Chengdu, Sichuan Province, P.R. China
Tel: +86-028-8505 0771

- **Shanghai**

Shanghai R&D Center.
1506~1508, Xinyin Building, 888 Yishan Road, Shanghai, P.R of China
Tel: +86- 021-54201999

- **Shenzhen**

Shenzhen Sales office
Room 4A15, Block AB, Tianxiang Building, Chegongmiao , Futian District, Shenzhen, P.R of China
Tel: +86-0755- 82570682

- **Xi'an**

Xi'an R&D Center
1703B, Building A, Greenland Center, Jinye Road, High-Tech Zone, Xi'an, Shaanxi, P.R of China