VUSB002R26ANA

Datasheet

General Description

$V_{(BR)DSS}$	$R_{DS(ON)\_max}$	I_D
20V	260mΩ@4.5V	0.75A
	360mΩ@2.5V	
	590mΩ@1.8V	

Symbol

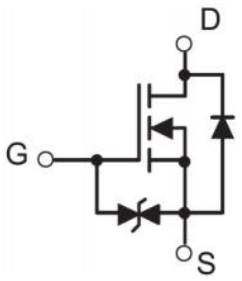
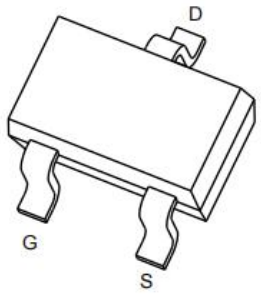


Figure 1 Symbol of VUSB002R26ANA

Features

- Excellent $R_{DS(on)}$ and Low Gate Charge
- Surface Mount Package
- Operated at Low Logic Level Gate Drive
- ESD Protected

Package Type



SOT-23

Figure 2 Package Type of VUSB002R26ANA

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch
- Logic Level Shift

Ordering Information

Product Name	Package
VUSB002R26ANA	SOT-23

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	±12	V
Continuous Drain Current Note1	I_D	0.75	A
Pulsed Drain Current (tp=10us)	I_{DM}	1.8	A
Total Power Dissipation Note1	P_D	0.35	W
Junction Temperature	T_J	150	ºC
Storage Temperature	T_{STG}	-55 to 150	ºC
Lead Temperature for Soldering Purposes(1/8" duration for 10 s)	T_L	260	ºC

Thermal Resistance

Parameter	Symbol	Min	Typ	Max	Unit
Thermal Resistance, Junction-to-Ambient Note1	$R_{\theta JA}$		357		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	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} = ±10V, V_{DS}= 0V			±20	uA
Gate Threshold Voltage[Note2]	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	0.35	0.75	1.1	V
Static Drain-Source On-Resistance[Note2]	$R_{DS(ON)}$	V_{GS}= 4.5V, I_D= 0.65A		190	260	mΩ
		V_{GS}= 2.5V, I_D= 0.55A		260	360	
		V_{GS}= 1.8V, I_D= 0.45A		390	590	
Forward tranconductance[Note2]	g_{FS}	V_{DS}= 10V, I_D= 0.8A		1.6		S
Dynamic Characteristics						
Input Capacitance	C_{ISS}	V_{DS}=16V		79	120	pF
Output Capacitance	C_{OSS}	V_{GS}=0V		13	20	pF
Reverse Transfer Capacitance	C_{RSS}	f=1MHz		9	15	pF
Switching Parameters						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}= 10V		6.7		ns
Turn-on Rise Time	t_r	V_{GS}= 4.5V		4.8		
Turn-off Delay Time	$t_{d(off)}$	I_D= 0.5A		17.3		
Turn-off Fall Time	t_f	R_{GEN}=10Ω		7.4		
Diode Characteristics						
Diode Forward Voltage[Note3]	V_{SD}	V_{GS}=0V, I_S= 0.15A			1.2	V

Notes :

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.

Typical Performance Characteristics

Figure 3: Transfer Characteristics

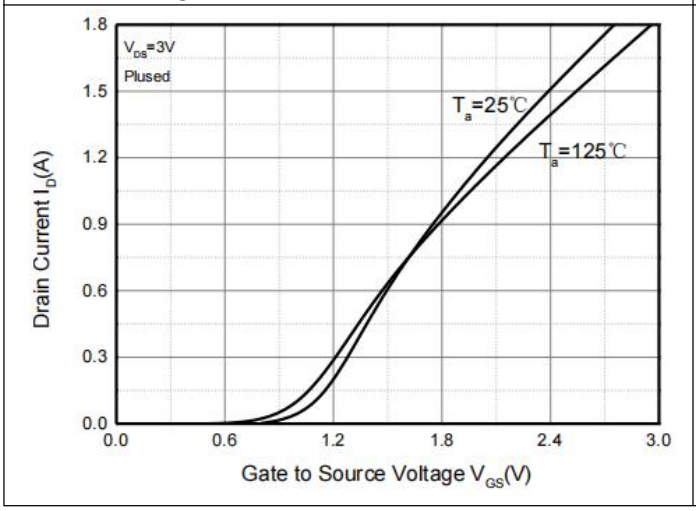


Figure 4: Output Characteristics

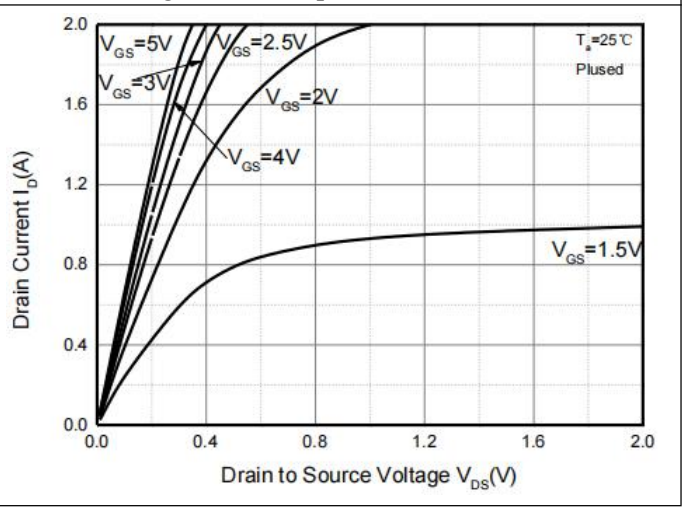


Figure 5: On-Resistance vs. Drain Current

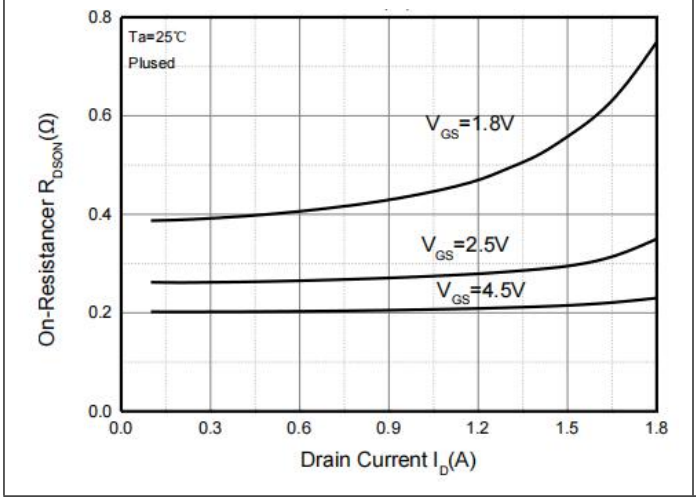


Figure 6: On-Resistance vs. Gate Voltage

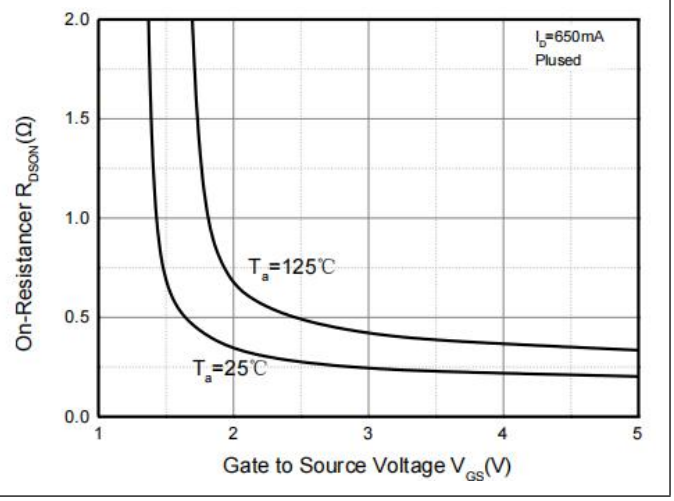


Figure 7: Body Diode Characteristics

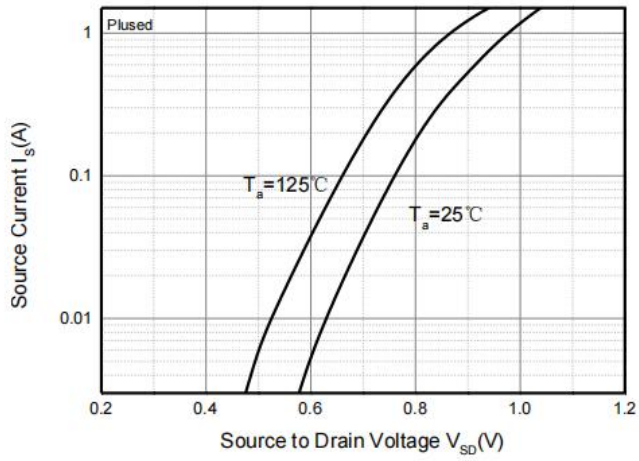
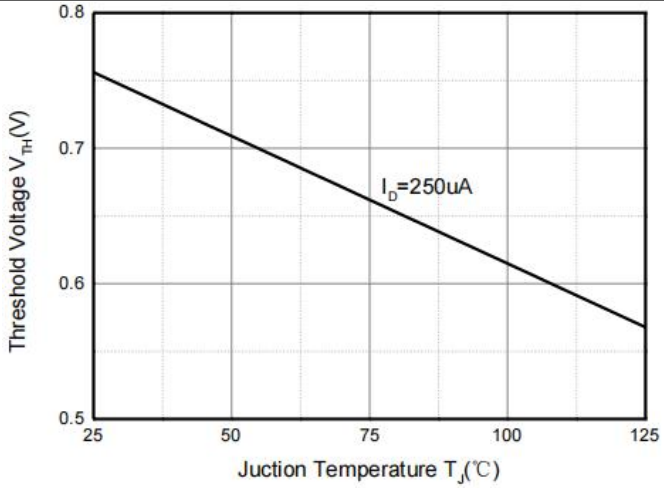
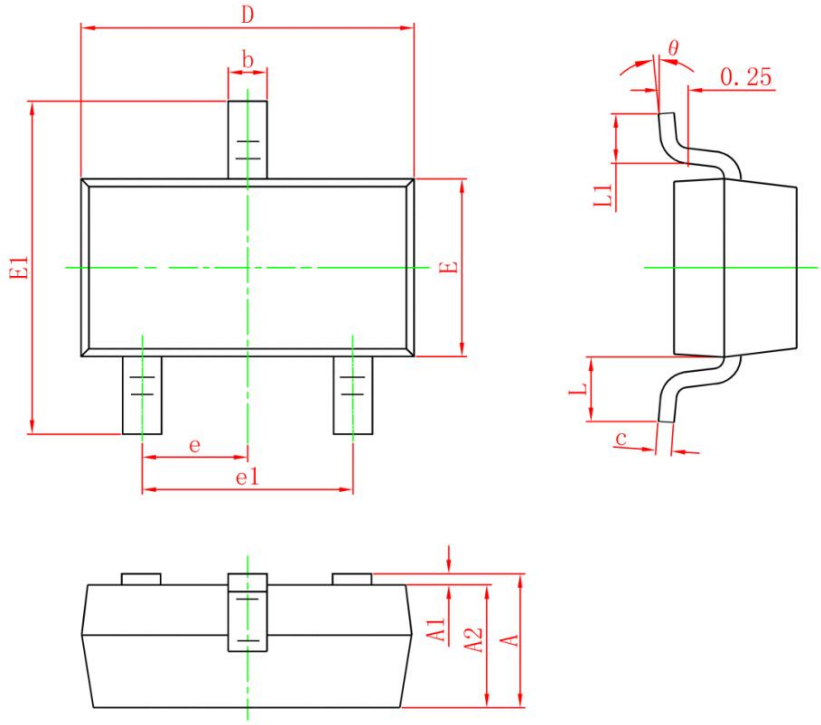


Figure 8: Threshold Voltage



Mechanical Dimensions:

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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