VUSN002R26ANA

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

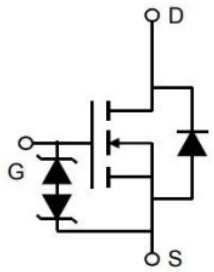
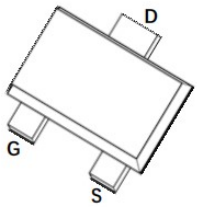


Figure 1 Symbol of VUSN002R26ANA

Features

- Lead Free Product is Acquired
- N-Channel Switch with Low $R_{DS(on)}$
- Surface Mount Package
- Operated at Low Logic Level Gate Drive

Package Type



SOT-723

Figure 2 Package Type of VUSN002R26ANA

Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift
- Battery Management for Ultra Small Portable

Ordering Information

Product Name	Package
VUSN002R26ANA	SOT-723

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	0.15	W
Junction Temperature	T_J	150	ºC
Storage Temperature	T_{STG}	-55 to 150	ºC
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	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	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	g_{FS}	V_{DS}= 10V, I_D= 0.8A		1.6		S
Dynamic Characteristics Note4						
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 Note4						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}= 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_G=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.
4. Guaranteed by design, not subject to producting.

Typical Performance Characteristics

Figure 3: Transfer Characteristics

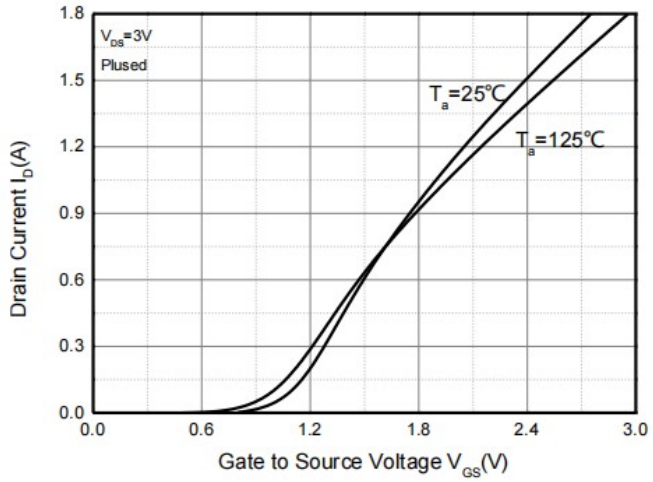


Figure 4: Output Characteristics

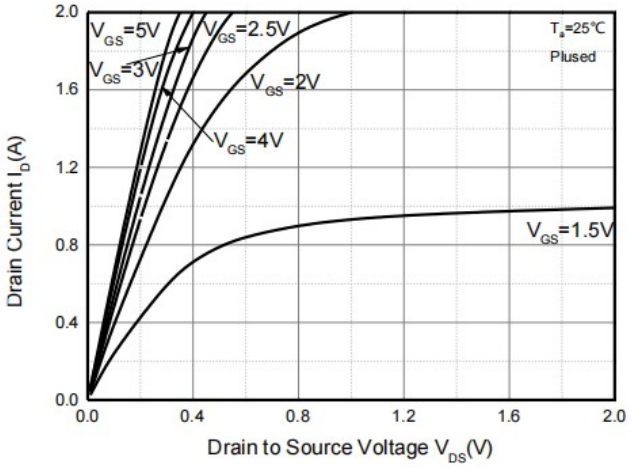


Figure 5: On-Resistance vs. Drain Current and Gate Voltage

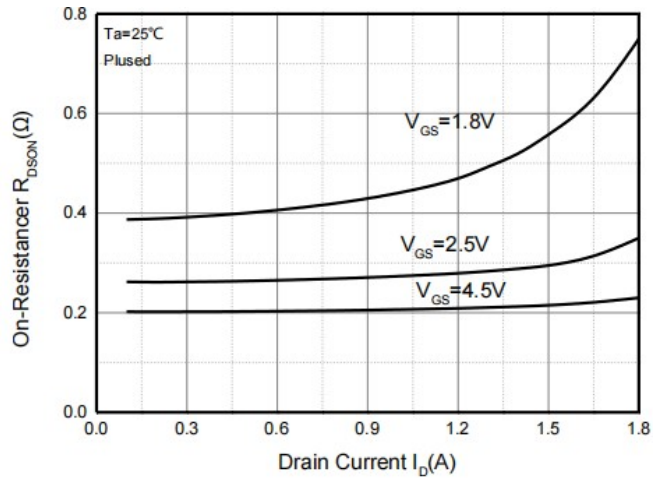


Figure 6: On-Resistance vs. Junction Temperature

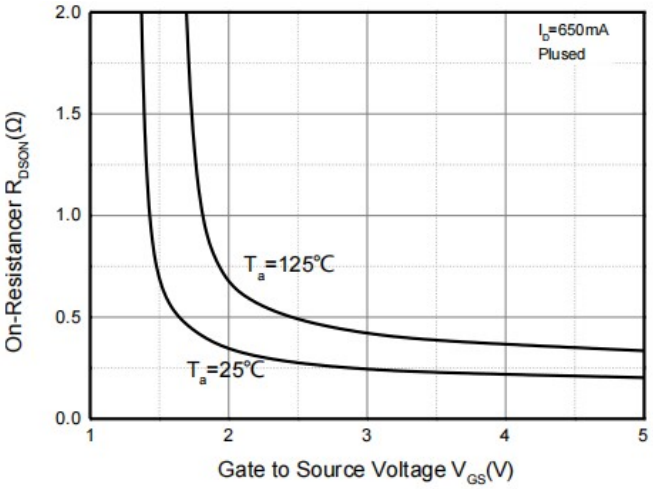


Figure 7: Body Diode Characteristics

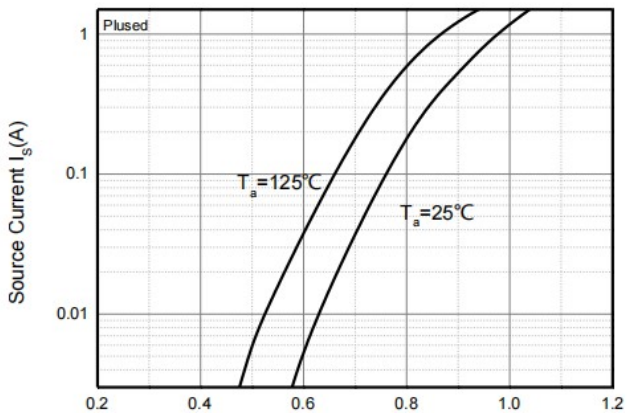
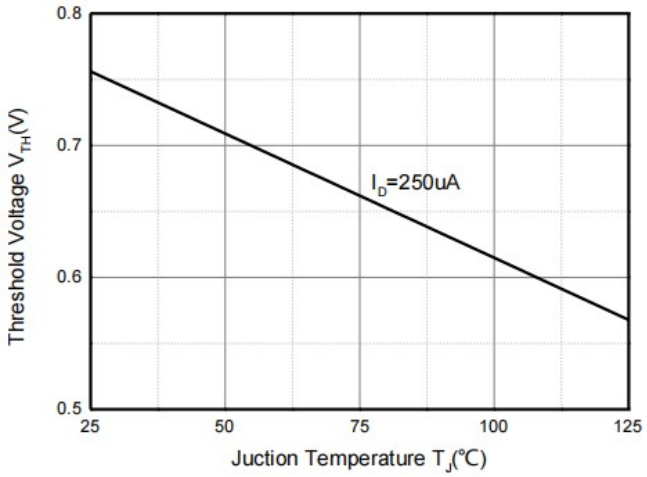
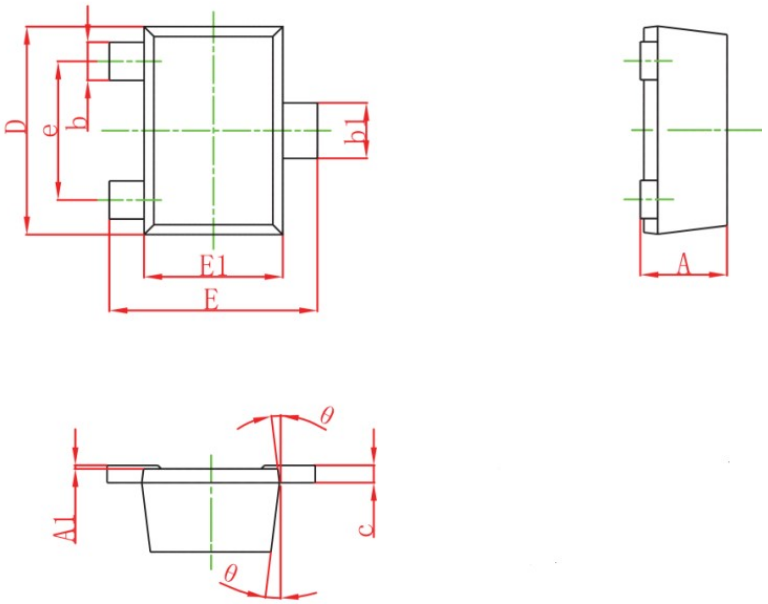


Figure 8: Threshold Voltage



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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