VUDA002R37ANA

Datasheet

General Description

$V_{(BR)DSS}$	$R_{DS(ON)\_max}$	I_D
20V	370mΩ@4.5V	0.75A
	480mΩ@2.5V	
	620mΩ@1.8V	

Symbol

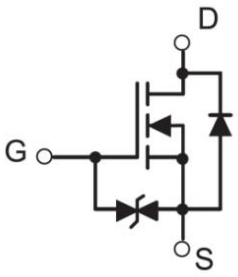
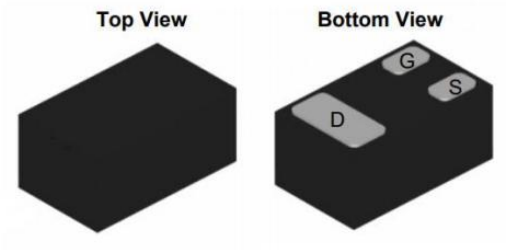


Figure 1 Symbol of VUDA002R37ANA

Features

- Lead Free Product is Acquired
- Surface Mount Package
- Operated at Low Logic Level Gate Drive

Package Type



DFN1006-3L

Figure 2 Package Type of VUDA002R37ANA

Application

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

Ordering Information

Product Name	Package
VUDA002R37ANA	DFN1006-3L

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	I_D	0.75	A
Pulsed Drain Current (tp=10us)	I_{DM}	1.8	A
Total Power Dissipation Note1	P_D	100	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	℃

Thermal Resistance

Parameter	Symbol	Min	Typ	Max	Unit
Thermal Resistance, Junction-to-Ambient Note1	$R_{\theta JA}$		125		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	1.0	V
Static Drain-Source On-Resistance[Note2]	$R_{DS(ON)}$	V_{GS}=4.5V, I_D= 0.15A		270	370	mΩ
		V_{GS}= 2.5V, I_D= 0.15A		320	480	
		V_{GS}= 1.8V, I_D= 0.15A		415	620	
Forward tranconductance	g_{FS}	V_{DS}= 10V, I_D= 0.15A	15			S
Dynamic Characteristics						
Input Capacitance	C_{ISS}	V_{DS}=16V		79		pF
Output Capacitance	C_{OSS}	V_{GS}=0V		13		pF
Reverse Transfer Capacitance	C_{RSS}	f=1MHz		9		pF
Switching Parameters						
Turn-on Delay Time[Note3]	$t_{d(on)}$	V_{DS}= 10V		6.7		ns
Turn-on Rise Time[Note3]	t_r	V_{GS}= 4.5V		4.8		
Turn-off Delay Time[Note3]	$t_{d(off)}$	I_D= 0.5A		17.3		
Turn-off Fall Time[Note3]	t_f	R_G=10Ω		7.4		
Diode Characteristics						
Diode Forward Voltage [Note2]	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

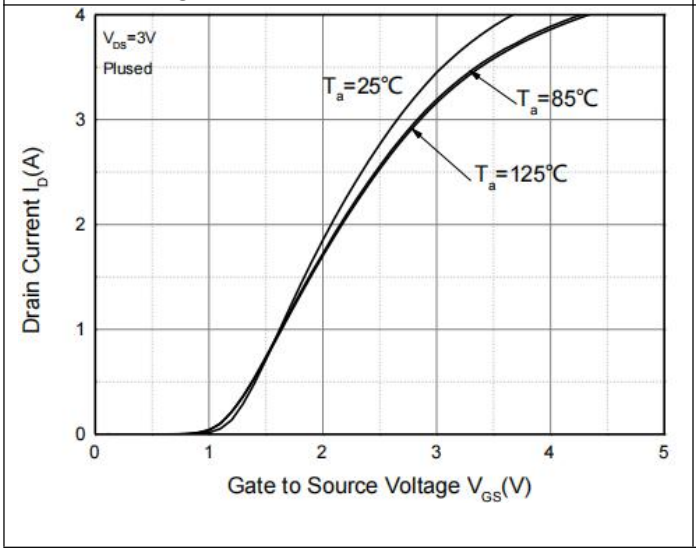


Figure 4: Output Characteristics

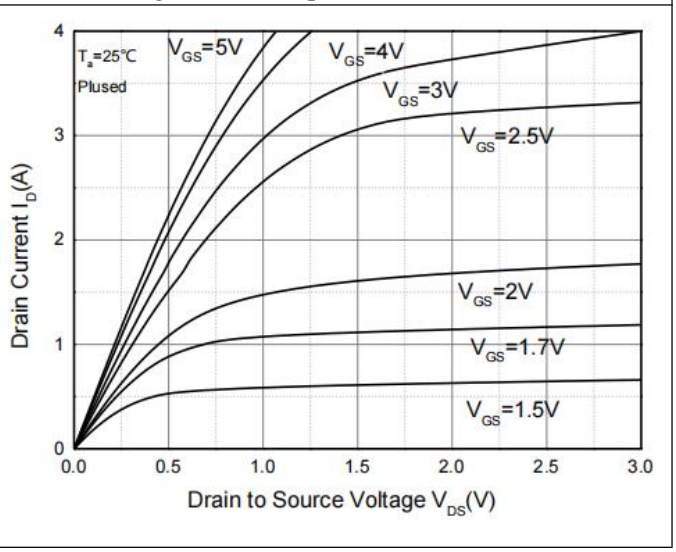


Figure 5: On-Resistance vs. Drain Current

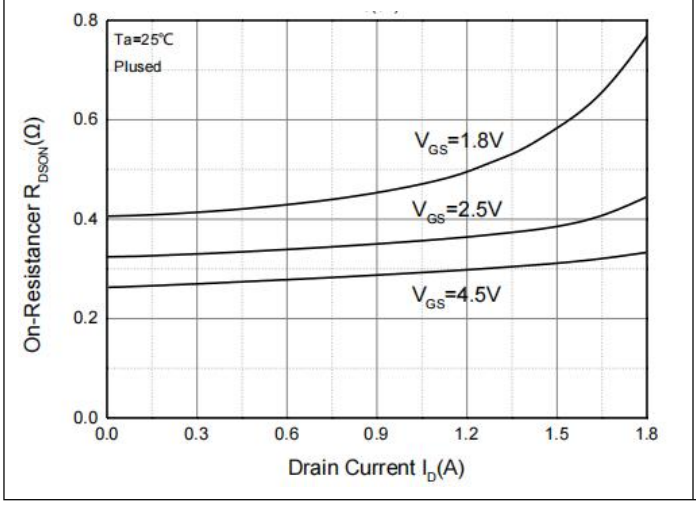


Figure 6: On-Resistance vs. Gate Voltage

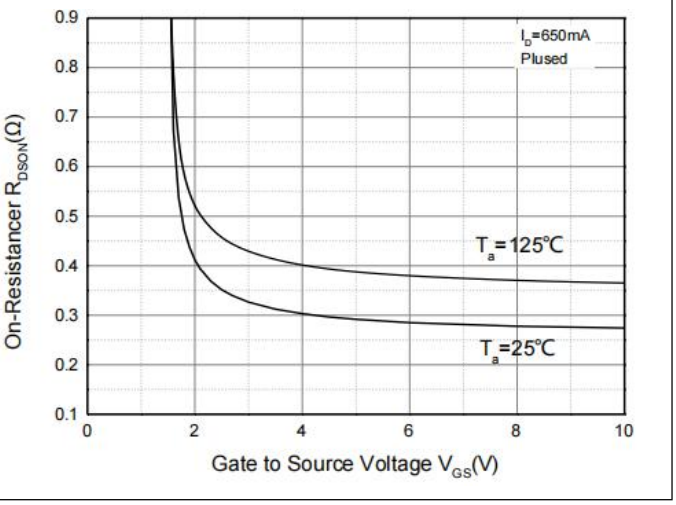


Figure 7: Body Diode Characteristics

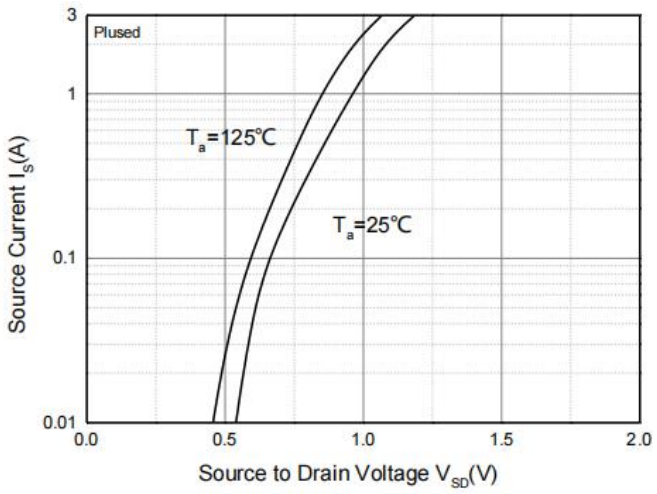
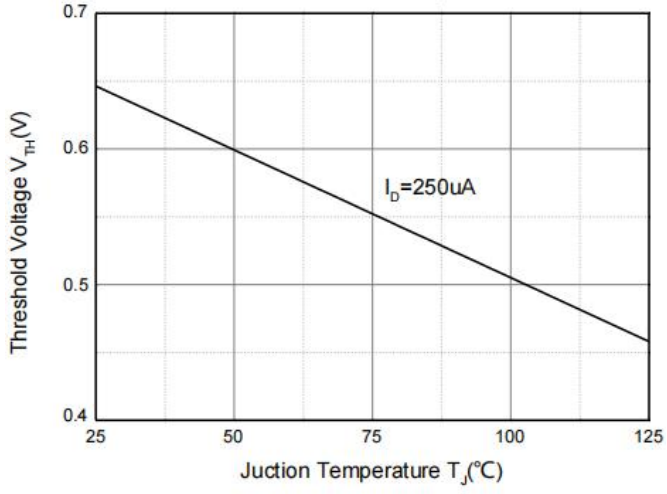
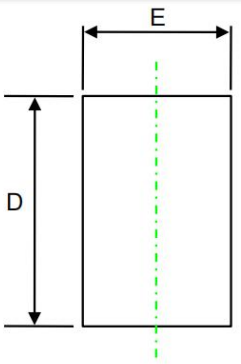


Figure 8: Threshold Voltage

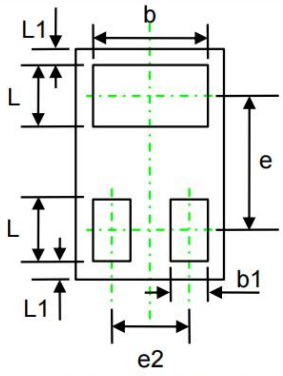


Mechanical Dimensions:

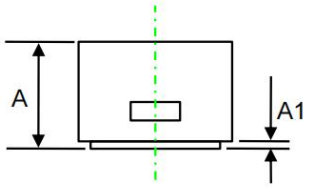
DFN1006-3L Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.34	0.37	0.40
A1	0.00	0.03	0.05
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.45	0.50	0.55
e	-	0.65	-
e2	-	0.35	-
L1	0.05 REF.		
L	0.20	0.25	0.30
b1	0.10	0.15	0.20

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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 Center.
17B, No.1 Phoenix Building, 2008 Shennan Road, 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