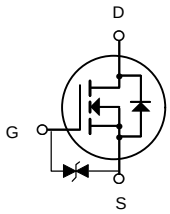
Description

The FDV301N uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

SOT-23



N-Channel MOSFET

General Features

V_{DS} = 30V I_D =0.1A

$R_{DS(ON)}$ < 2.2Ω@ V_{GS}=10V

ESD Rating：HBM≥2000V

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
FDV301N	SOT-23	HXY MOSFET	3000

Absolute Maximum Ratings (T_C=25℃unless otherwise noted)

Symbol	Parameter		Limit	Unit
V_{DS}	Drain-Source Voltage		30	V
V_{GS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current (T_J =150℃)	T_A =25℃	0.1	A
		T_A =100℃	0.07	
I_{DM}	Drain Current-Pulsed (Note 1)		0.65	A
P_D	Maximum Power Dissipation		0.35	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range		-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)		200	℃/W

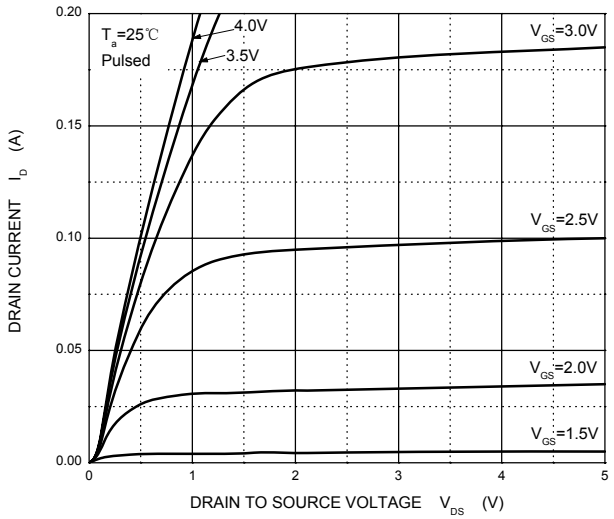
Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0V, I_D = 10μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V,V_{GS} = 0V			0.2	μA
Gate –Source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±2	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = 3V, I_D =100μA	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D =10mA		1.5	2.2	Ω
		V_{GS} =4.5V,I_D =1mA		2	3	Ω
Forward Transconductance	g_{FS}	V_{DS} =3V, I_D = 10mA	20			mS
Dynamic Characteristics*						
Input Capacitance	C_{iss}	V_{DS} =5V,V_{GS} =0V,f =1MHz		13		pF
Output Capacitance	C_{oss}			9		pF
Reverse Transfer Capacitance	C_{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	$t_{d(on)}$	V_{GS} =5V, V_{DD} =5V, I_D =10mA, Rg=10Ω, R_L=500Ω,		15		ns
Rise Time	t_r			35		ns
Turn-Off Delay Time	$t_{d(off)}$			80		ns
Fall Time	t_f			80		ns

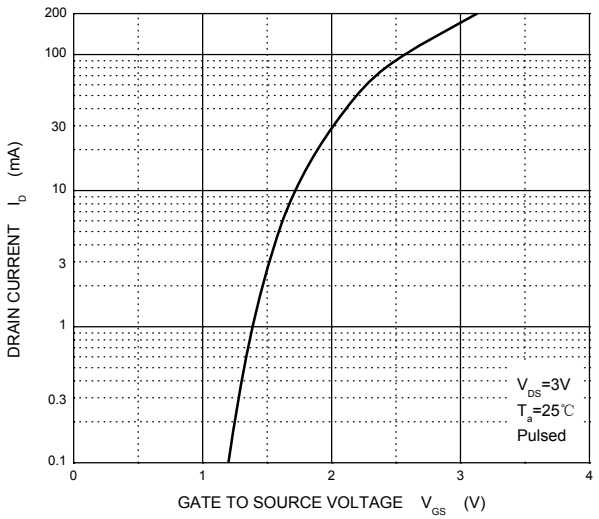
* These parameters have no way to verify.

Typical Characteristics

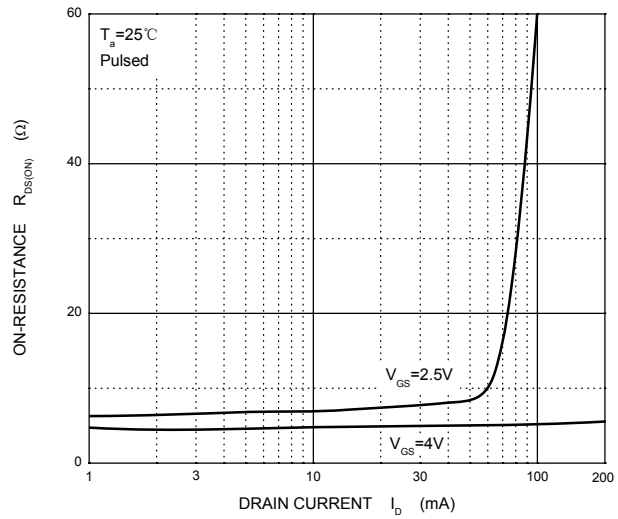
Output Characteristics



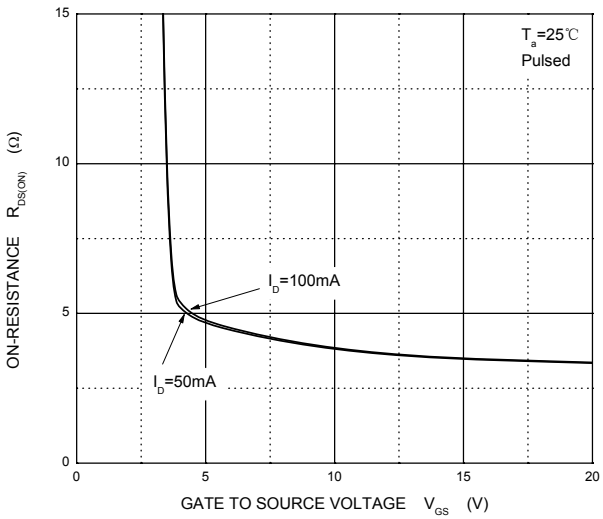
Transfer Characteristics



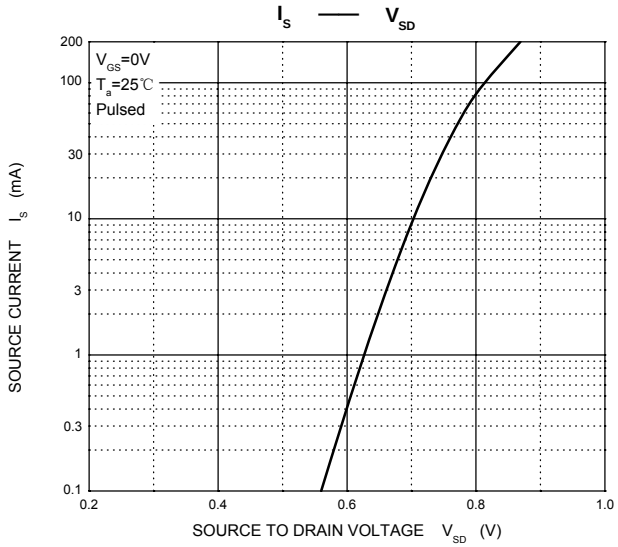
$R_{DS(ON)}$ —— I_D



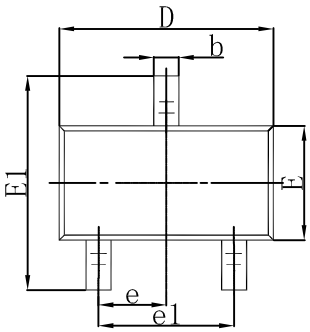
$R_{DS(ON)}$ —— V_{GS}

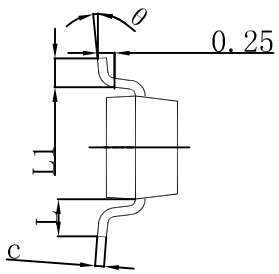


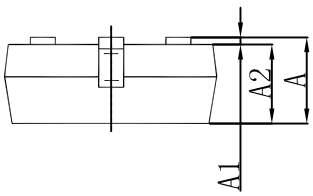
I_S —— V_{SD}



SOT-23 Package Outline Dimensions

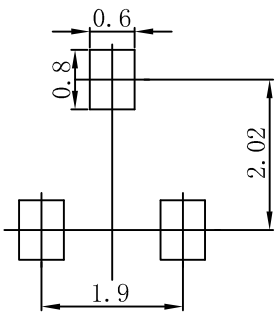






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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