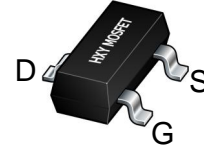




### Description

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.



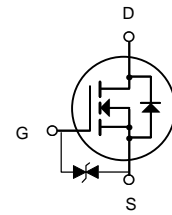
**SOT-23**

### General Features

$V_{DS} = 30V$   $I_D = 0.1A$

$R_{DS(ON)} < 2.2\Omega @ V_{GS}=10V$

ESD Rating: HBM  $\geq 2000V$



N-Channel MOSFET

### 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 ( $T_C=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Limit	Unit
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current ( $T_J = 150^\circ C$ )	$T_A = 25^\circ C$	0.1
		$T_A = 100^\circ C$	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	$^\circ C$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 2)	200	$^\circ C/W$



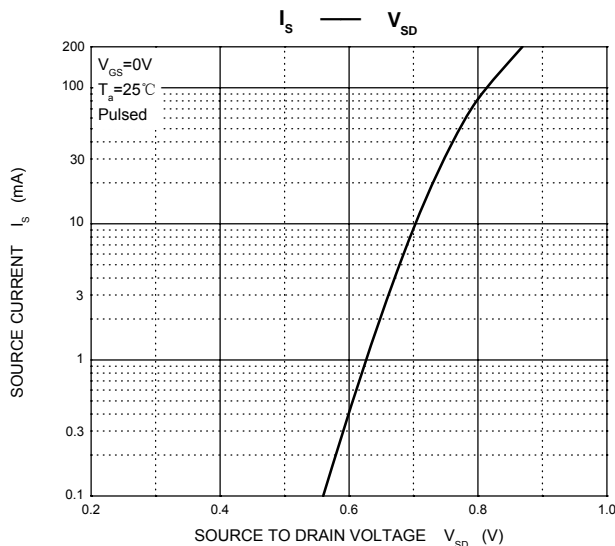
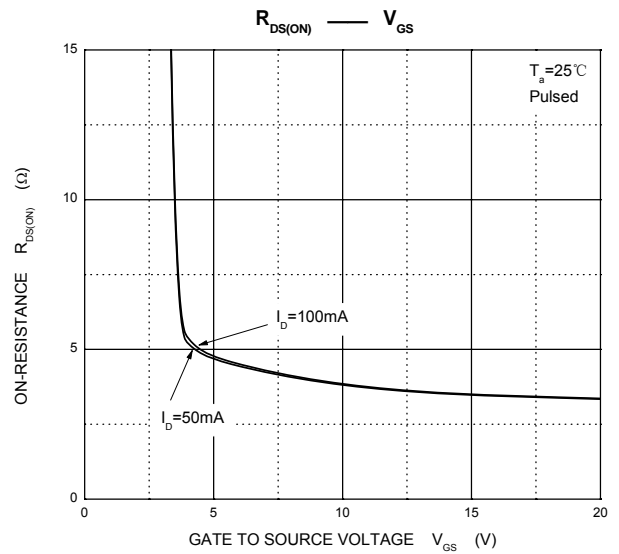
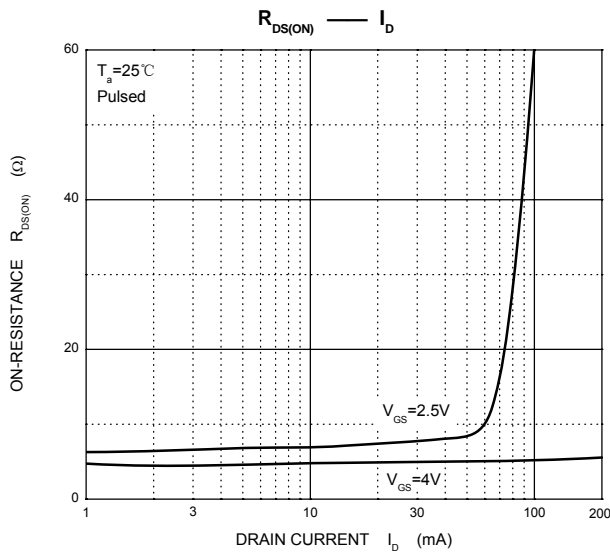
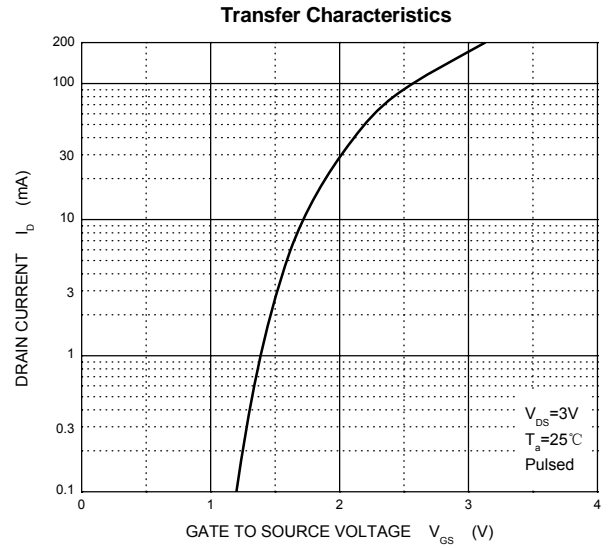
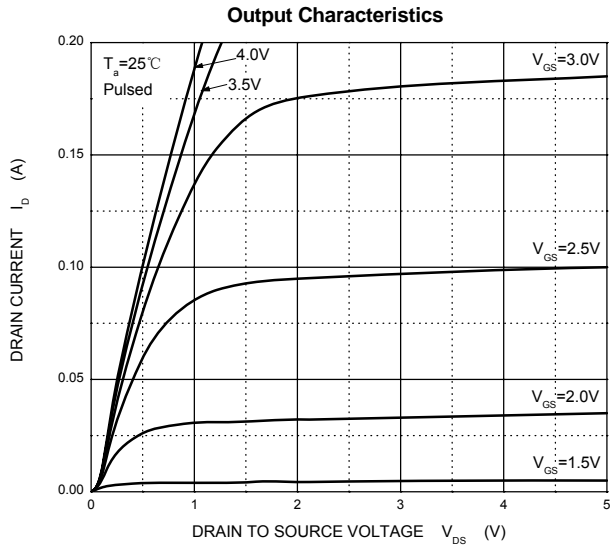
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Units	
<b>Off Characteristics</b>							
Drain-Source Breakdown Voltage	$V_{DS}$	$V_{GS} = 0V, I_D = 10\mu A$	30			V	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			0.2	$\mu A$	
Gate -Source leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 2$	$\mu A$	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 3V, I_D = 100\mu A$	0.8		1.5	V	
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10mA$		1.5	2.2	$\Omega$	
		$V_{GS} = 4.5V, I_D = 1mA$		2	3	$\Omega$	
Forward Transconductance	$g_{FS}$	$V_{DS} = 3V, I_D = 10mA$	20			mS	
<b>Dynamic Characteristics*</b>							
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
<b>Switching Characteristics*</b>							
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 5V,$ $I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega,$		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.

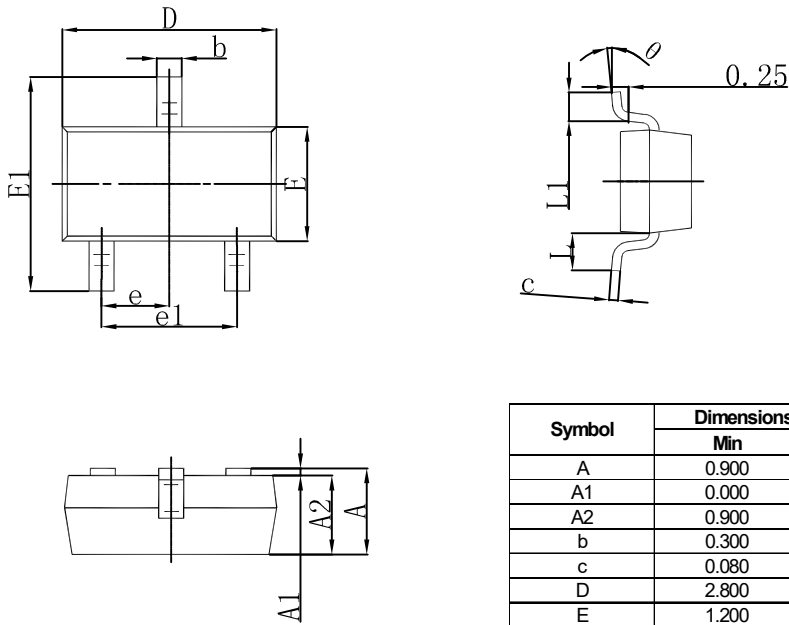


### Typical Characteristics



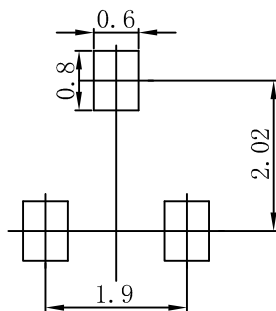


### SOT-23 Package Outline Dimensions



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:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.



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