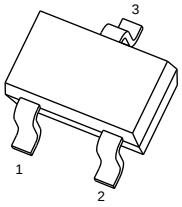
N-Channel Enhancement Mode MOSFETS

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30 V	8Ω@4V	100mA
	13 Ω@2.5V	

SOT-323

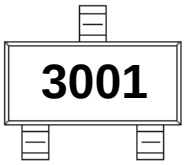
1. GATE
2. SOURCE
3. DRAIN



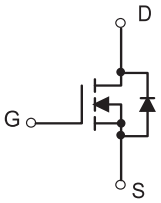
FEATURE

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Easily designed drive circuits
- Easy to parallel

MARKING



Equivalent Circuit



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Continuous Gate-Source Voltage	V_{GSS}	±20	
Continuous Drain Current	I_D	0.1	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	℃/W
Operating Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =10μA	30			V
Gate-body leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±500	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			200	nA
On characteristics						
Gate-threshold voltage (note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =1mA	0.80		1.50	V
Static drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =4V, I_D =10mA			8	Ω
		V_{GS} =2.5V, I_D =1mA			13	
Forward transconductance (note 1)	g_{FS}	V_{DS} =3V, I_D =10mA	20			S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =5V,V_{GS} =0V, f=1MHz		27		pF
Output capacitance	C_{oss}			13		
Reverse transfer capacitance	C_{rss}			6		
Switching characteristics						
Turn-on delay time (note 1,2)	$t_{d(on)}$	V_{DD}=5V, V_{DS}=5V, I_D =10mA,R_{GEN}=10Ω		15		ns
Rise time (note 1,2)	t_r			35		
Turn-off delay time (note 1,2)	$t_{d(off)}$			80		
Fall time (note 1,2)	t_f			80		

Notes:

1. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
2. These parameters have no way to verify.

Typical Characteristics

Figure 1. Typical Output Characteristics

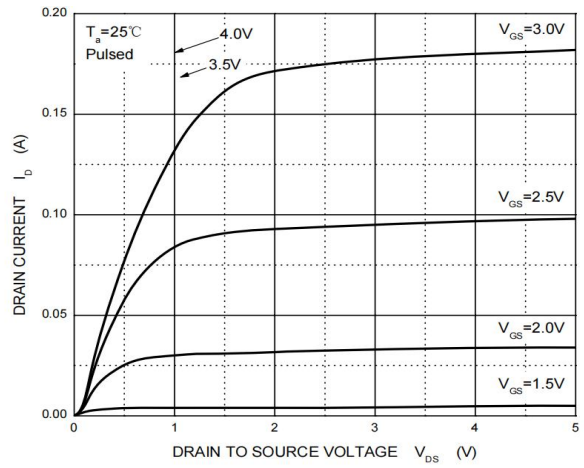


Figure 2. Typical Transfer Characteristics

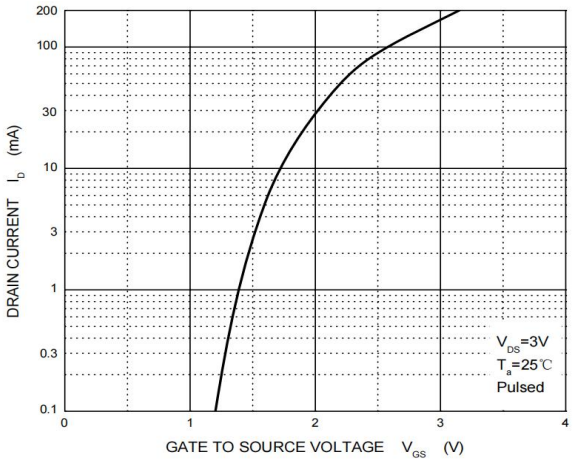


Figure 3.Drain-Source On-Resistance vs. Drain Current

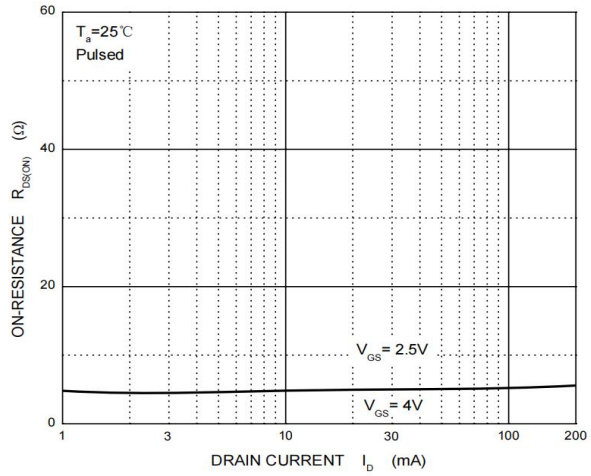


Figure 4. On-Resistance vs.Gate to Source Voltage

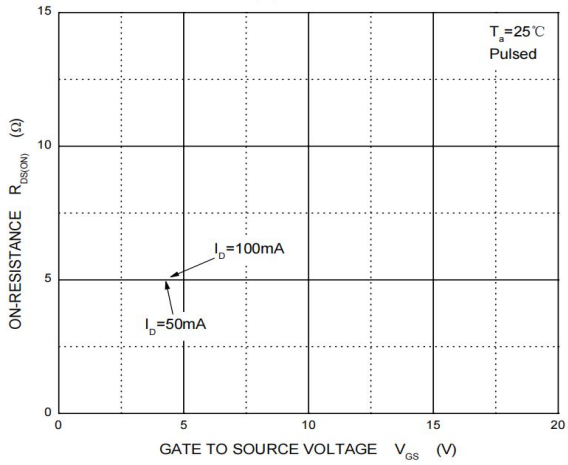
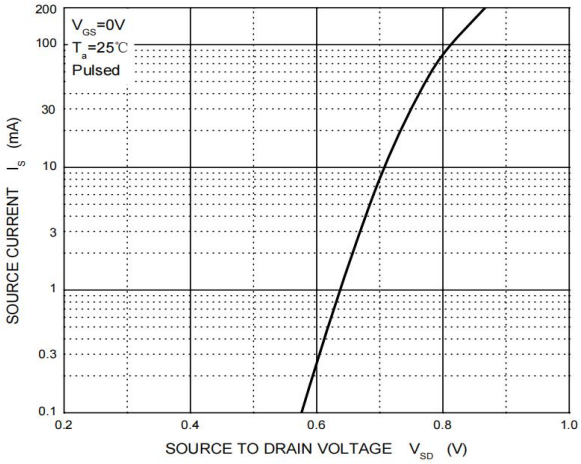
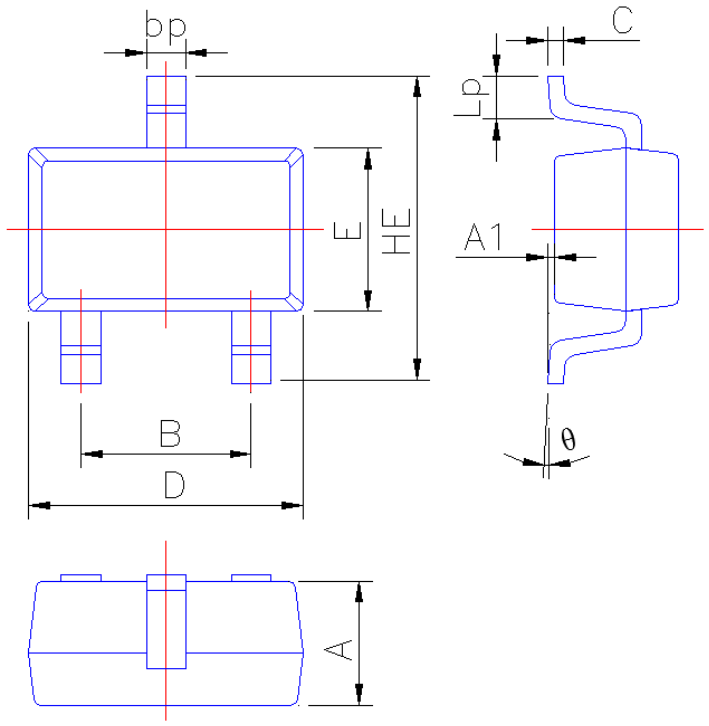


Figure 5. Source Current vs. Drain-Source Voltage



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-323**



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0°	6°