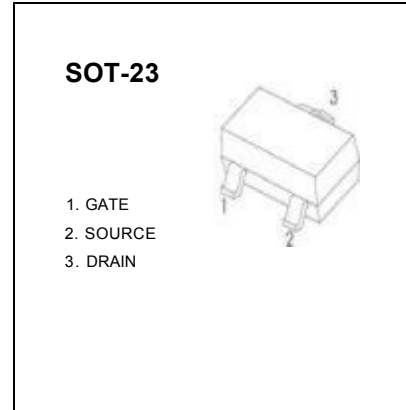


**SOT-23 Plastic-Encapsulate MOSFETS**
**2N7002** MOSFET (N-Channel)

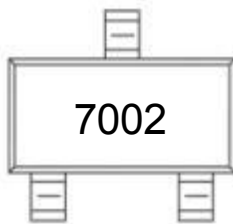
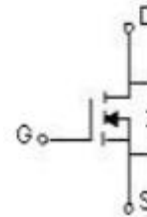
$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_b$
60V	5Ω@10V	115mA
	7Ω@5V	


**FEATURE**

- High density cell design for low  $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

**APPLICATION**

- Load Switch for Portable Devices
- DC/DC Converter

**MARKING**

**Equivalent Circuit**

**MAXIMUM RATINGS ( $T_a=25^{\circ}C$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	20	V
Continuous Drain Current	$I_b$	0.115	A
Power Dissipation	$P_b$	0.225	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{stg}$	-50 ~+150	

## SOT-23 Plastic-Encapsulate MOSFETS

Ta=25 °C unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}, I_D=250\text{ }\mu\text{A}$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\text{ }\mu\text{A}$	1		2.5	
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0\text{ V}, V_{GS}=\pm 20\text{ V}$			$\pm 80$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60\text{ V}, V_{GS}=0\text{ V}$			80	nA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10\text{ V}, V_{DS}=7\text{ V}$	500			mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=500\text{mA}$			5	$\Omega$
		$V_{GS}=5\text{ V}, I_D=50\text{mA}$			7	
Forward Trans conductance	$g_{fs}$	$V_{DS}=10\text{ V}, I_D=200\text{mA}$	80			ms
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$			3.75	V
		$V_{GS}=5\text{V}, I_D=50\text{mA}$			0.375	V
Diode Forward Voltage	$V_{SD}$	$I_S=115\text{mA}, V_{GS}=0\text{ V}$	0.55		1.2	V
Input Capacitance *	$C_{iss}$	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$			50	pF
Output Capacitance *	$C_{oss}$				25	
Reverse Transfer Capacitance *	$C_{rss}$				5	

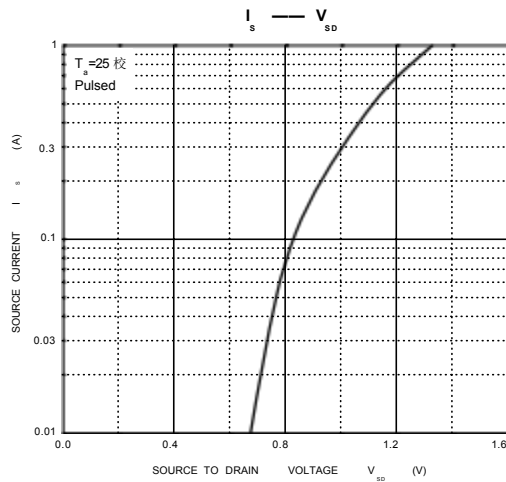
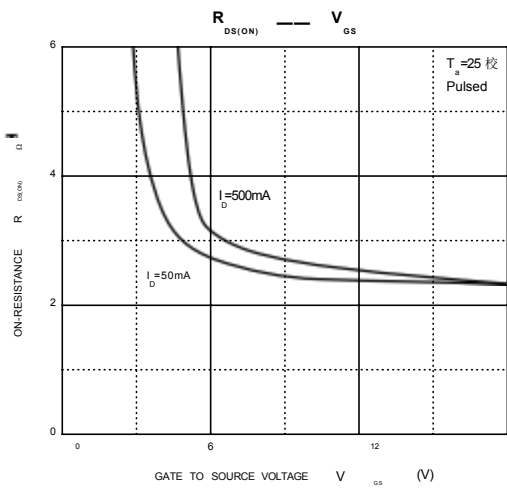
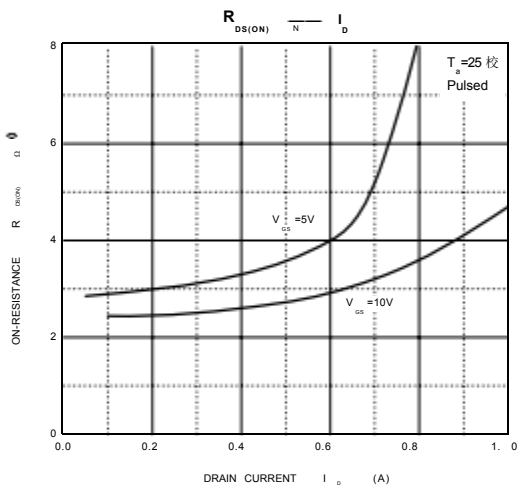
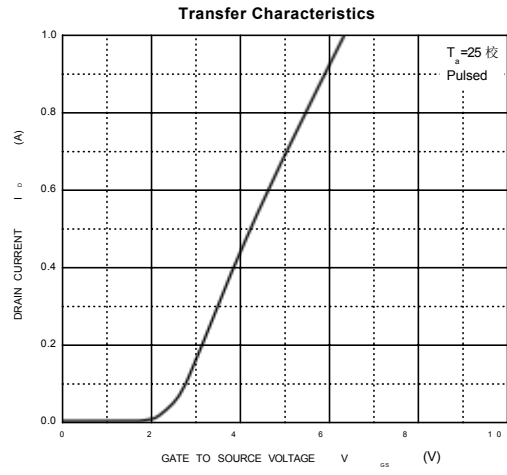
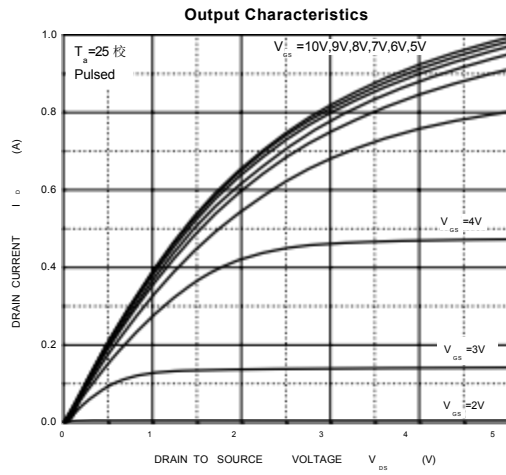
## SWITCHING TIME

Turn-on Time *	$t_{d(on)}$	$V_{DD}=25\text{ V}, R_L=50\Omega,$ $I_D=500\text{mA}, V_{GEN}=10\text{ V}$			20	ns
Turn-off Time *	$t_{d(off)}$	$R_G=25\Omega$			40	

\*These parameters have no way to verify.

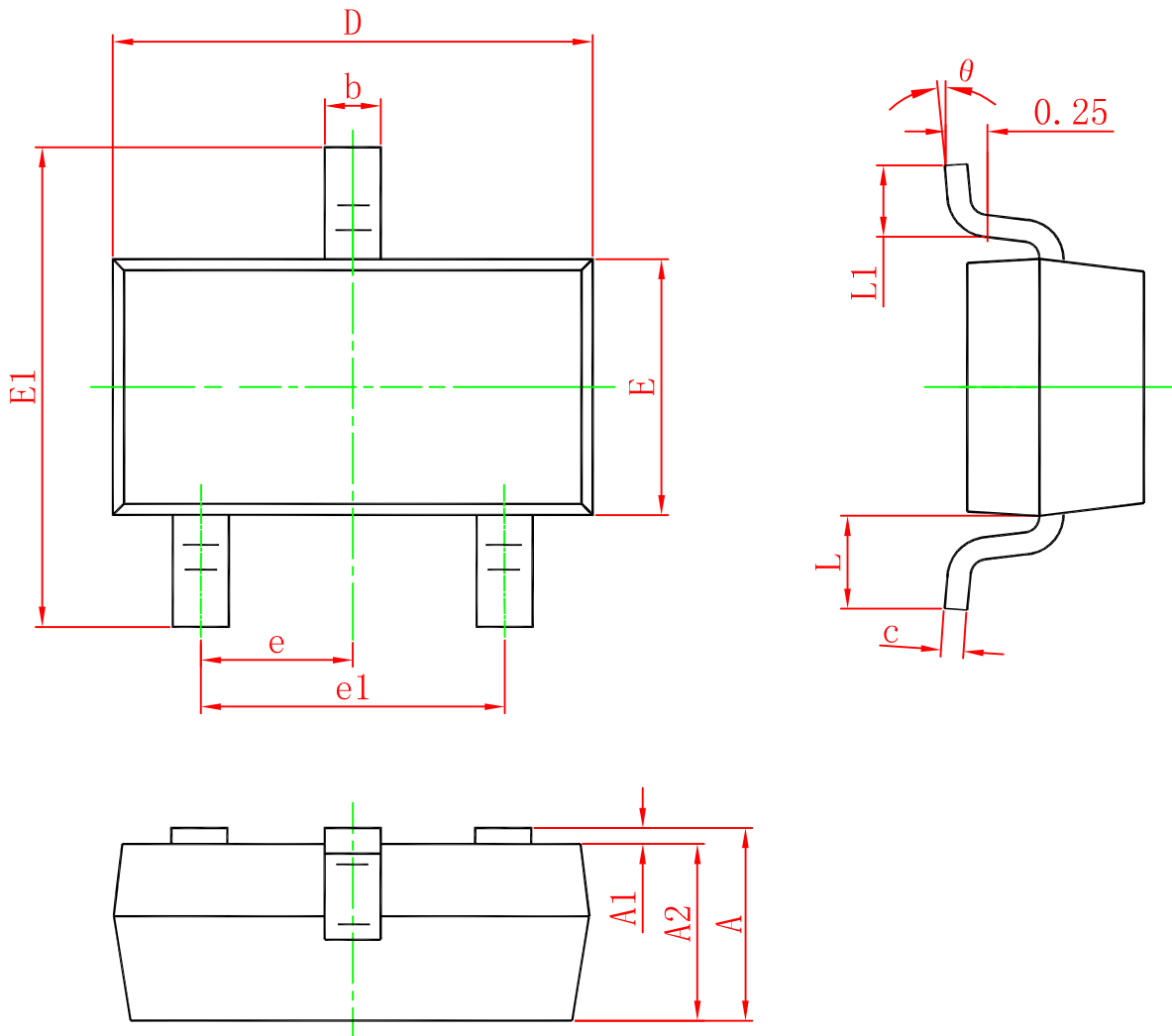
# SOT-23 Plastic-Encapsulate MOSFETS

## Typical Characteristics



SOT-23 Plastic-Encapsulate MOSFETS

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°