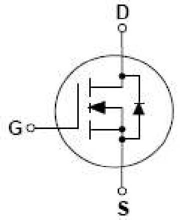
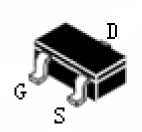
Small Signal MOSFET Transistor **2N7002T**

FEATURES

- Low on-resistance.
- Low gate threshold voltge.
- Low input capacitance.
- Fast switching speed.
- Low input/output leakage.

Lead-free





SOT-523

APPLICATIONS

- N-channel enhancement mode effect transistor.
- Switching application.

ORDERING INFORMATION

Type No.	Marking	Package Code
2N7002T	72	SOT-523

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Units**
V_{DSS}	Drain-Source voltage	60	V
V_{DGR}	Drain-Gate voltage(R_{GS}≤1MΩ)	60	V
V_{GSS}	Gate -Source voltage - continuous -Non Repetitive (t_p<50μs)	±20 ±40	V
I_D	Maximum Drain current -continuous -Pulsed	115 800	mA
P_D	Power Dissipation	150	mW
$R_{θJA}$	Thermal resistance,Junction-to-Ambient	833	℃/W
T_J, Tstg	Junction and Storage Temperature	-55 to +150	℃

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=10μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1		2	
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=20V V_{DS}=0V, V_{GS}=-20V			10 -10	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
		V_{DS}=60V,V_{GS}=0V,T_j=125℃			500	
On-state Drain Current	$I_{D(On)}$	V_{GS}=10V, V_{DS}=7.5V	0.5	1.0		A
Forward transconductance	g_{FS}	V_{DS}=10V,I_D=200mA	80			mS
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=5.0V,I_D=50mA		2	7.5	Ω
Input capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz		22	50	pF
Output capacitance	C_{OSS}			11	25	
Reverse transfer capacitance	C_{RSS}			2	5	
Turn-On Delay Time	$t_{D(ON)}$	V_{DD}=30V, I_D=0.2A, R_L=150Ω, V_{GS}=10V, R_{GEN}= 25Ω		7.0	20	ns
Turn-Off Delay Time	$t_{D(OFF)}$			11	20	ns

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

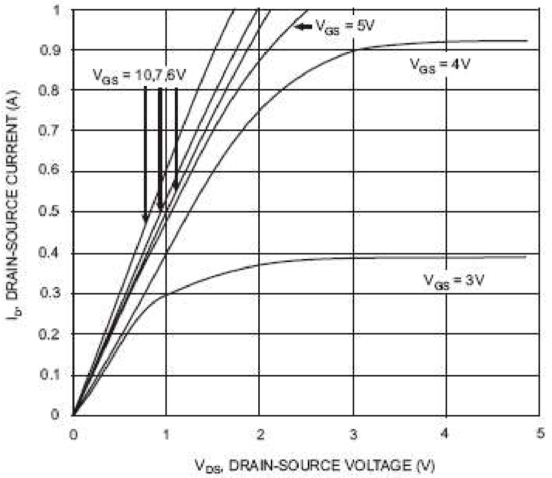


Fig. 1 On-Region Characteristics

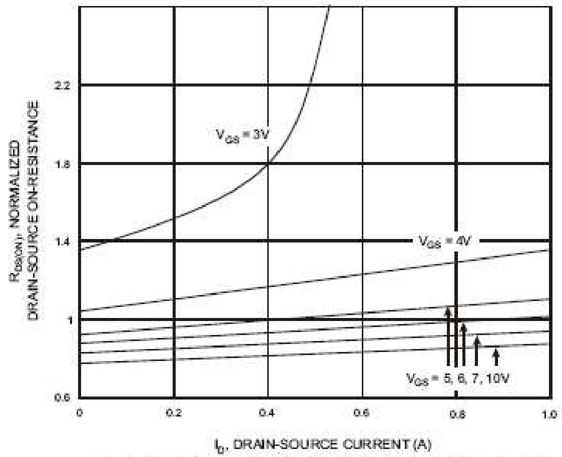


Fig. 2 On-Resistance Variation with Gate Voltage and Drain-Source Current

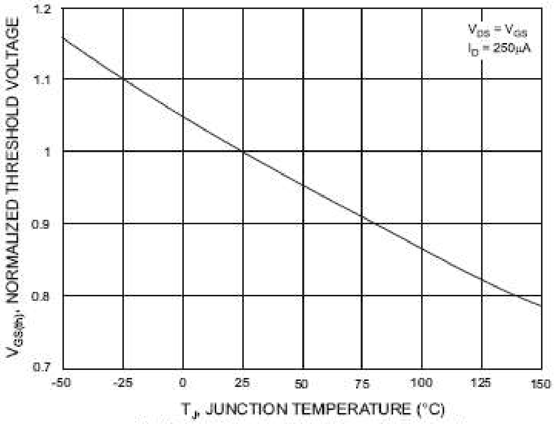


Fig. 3 Gate Threshold Variation with Temperature

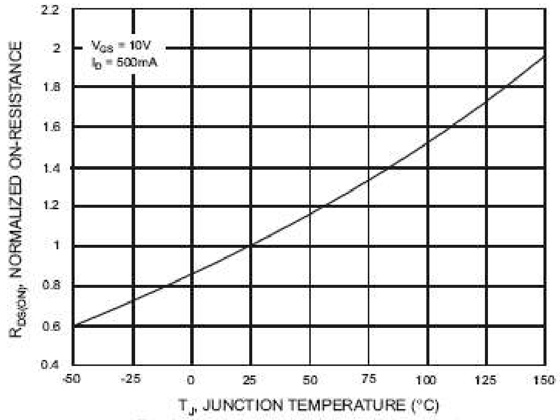


Fig. 4 On-Resistance Variation with Temperature

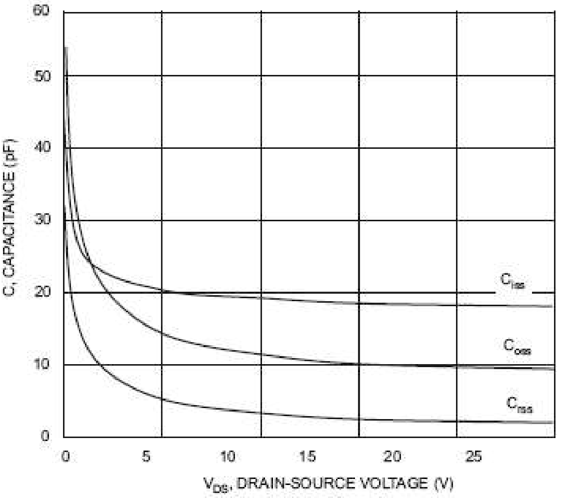


Fig. 5 Typical Capacitance

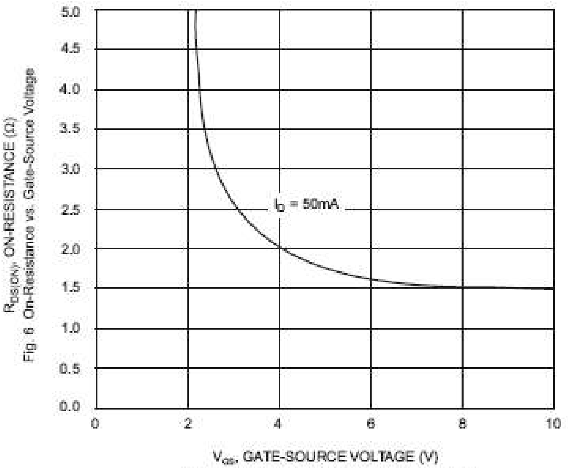
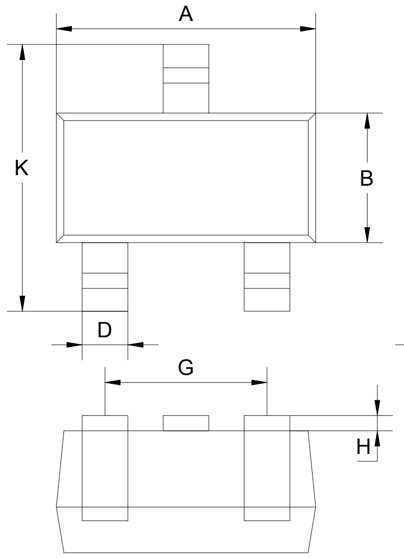


Fig. 6 On-Resistance vs. Gate-Source Voltage

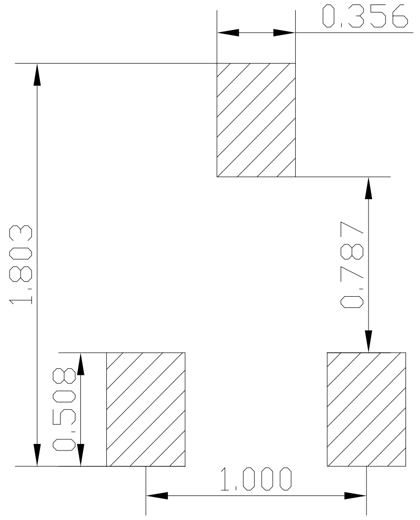
PACKAGE OUTLINE

Plastic surface mounted package SOT-523



SOT-523		
Dim	Min	Max
A	1.5	1.7
B	0.75	0.85
C	0.6	0.8
D	0.15	0.3
G	0.9	1.1
H	0.02	0.1
J	0.1Typical	
K	1.45	1.75
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
2N7002T	SOT-523	3000/Tape&Reel