

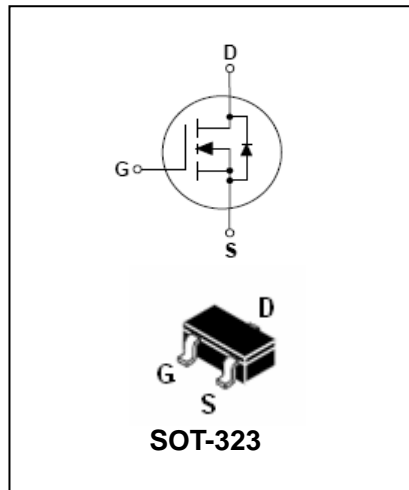


## N-Channel Enhancement Mode Field Effect Transistor

### 2N7002W

#### FEATURES

- Low On-Resistance.
- Low Gate Threshold Voltage.
- Low Input Capacitance.
- Fast Switching Speed.
- Low Input/Output Leakage.



#### APPLICATIONS

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

#### ORDERING INFORMATION

Type No.	Marking	Package Code
2N7002W	7002	SOT-323

#### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>DSS</sub>	Drain-Source voltage	60	V
V <sub>DGR</sub>	Drain-Gate voltage(R <sub>GS</sub> ≤1MΩ)	60	V
V <sub>GSS</sub>	Gate -Source voltage - continuous -Non Repetitive (t <sub>p</sub> <50μs)	± 20 ± 40	V
I <sub>D</sub>	Maximum Drain current -continuous -Pulsed	115 800	mA
P <sub>D</sub>	Power Dissipation	200	mW
R <sub>θJA</sub>	Thermal resistance,Junction-to-Ambient	625	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-55 to +150	°C



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#### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

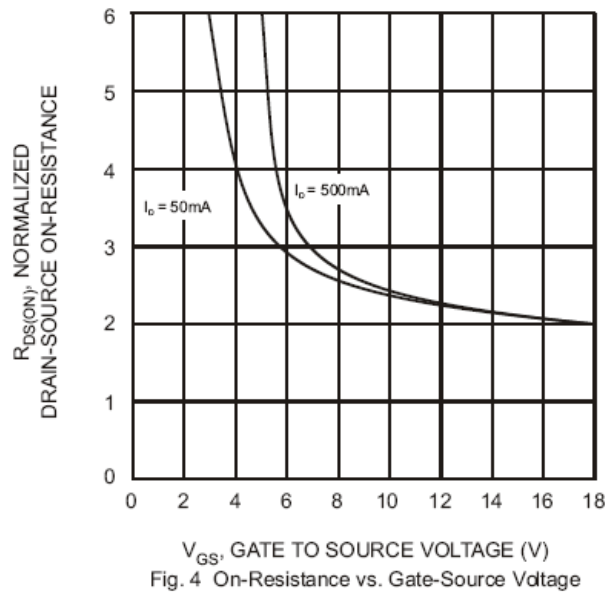
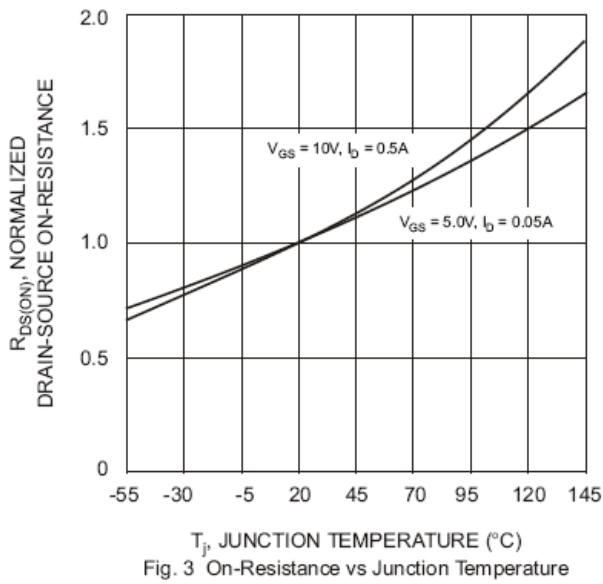
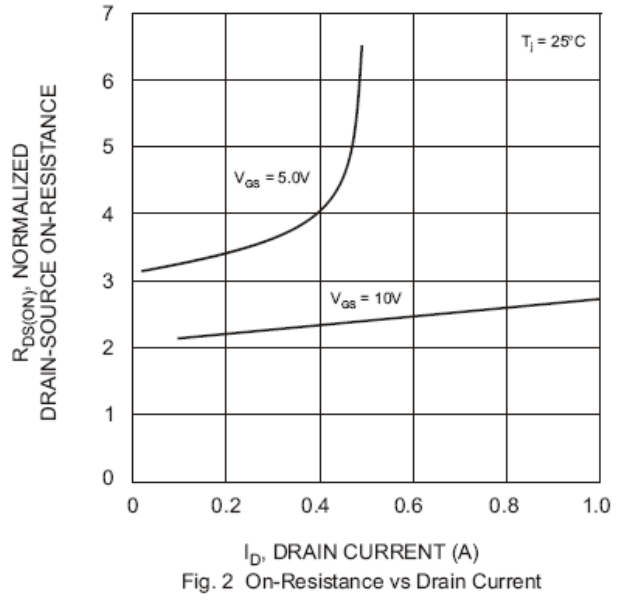
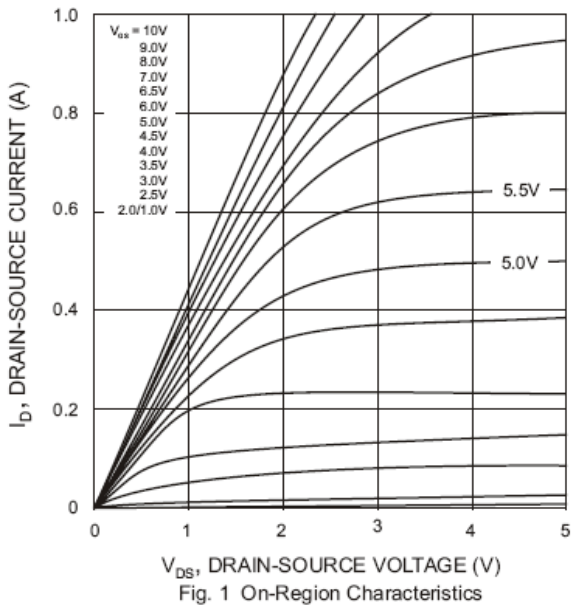
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	60	70	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	2.0	
Gate-body Leakage	$I_{GSS}$	Forward $V_{DS}=0V, V_{GS}=20V$	-	-	100	nA
		Reverse $V_{DS}=0V, V_{GS}=-20V$	-	-	-100	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	-	-	1	$\mu A$
		$V_{DS}=60V, V_{GS}=0V, T_j=125^\circ C$	-	-	500	
On-state Drain Current	$I_{D(on)}$	$V_{GS}=10V, V_{DS}=7.5V$	0.5	1.0	-	A
Drain-Source on-voltage	$V_{DS(on)}$	$V_{GS}=10V, I_D=500mA$	-	0.6	3.75	V
		$V_{GS}=5V, I_D=50mA$	-	0.09	1.5	
Forward transconductance	$g_{FS}$	$V_{DS}=10V, I_D=200mA$	80	-	-	mS
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS}=5.0V, I_D=50mA$	-	3.2	7.5	$\Omega$
		$V_{GS}=10V, I_D=500mA, T_j=125^\circ C$	-	4.4	13.5	
On-state drain current	$I_{D(on)}$	$V_{GS}=10V, V_{DS}=7.5V$	0.5	1.0	-	A
Drain-Source diode forward voltage	$V_{SD}$	$V_{GS}=0V, I_D=115mA$	-	0.88	1.5	V
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	$t_{D(on)}$	$V_{DD} = 30V, I_D = 0.2A,$ $R_L = 150\Omega, V_{GS} = 10V,$ $R_{GEN} = 25\Omega$	-	7	20	ns
Turn-Off Delay Time	$t_{D(off)}$		-	11	20	ns



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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified





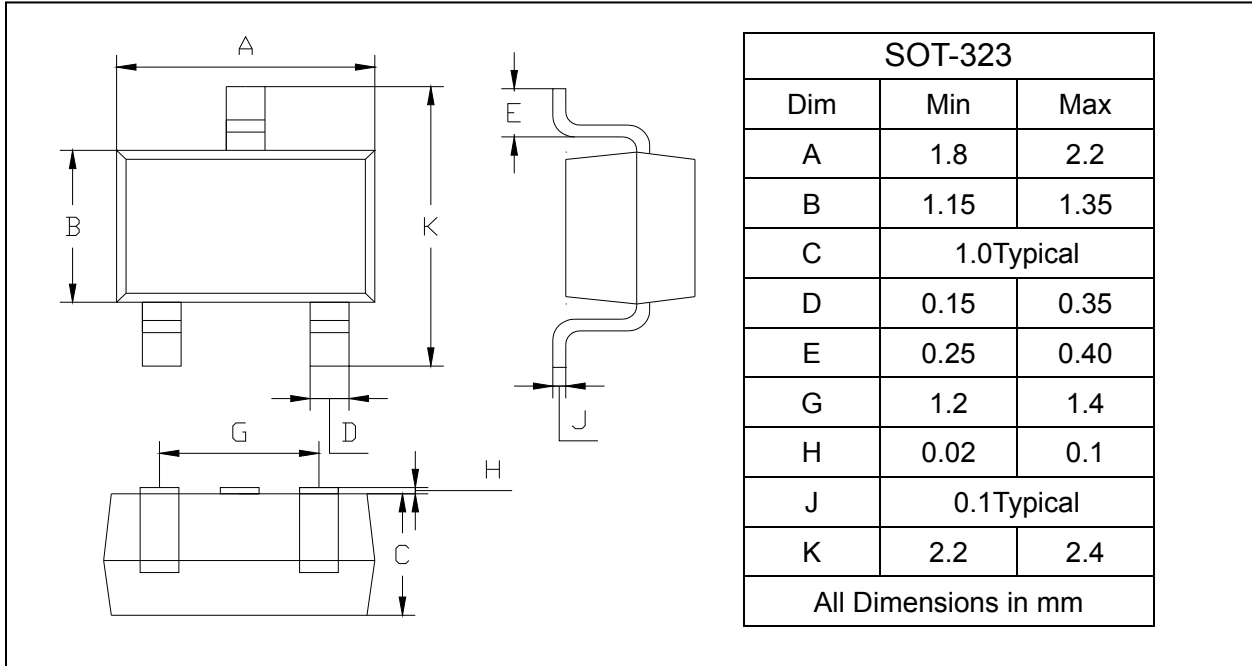
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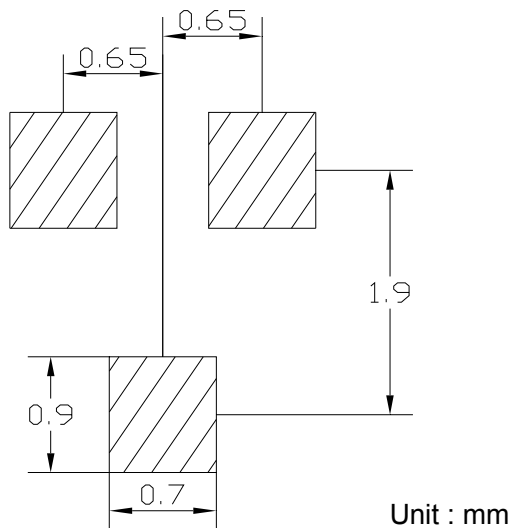
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
2N7002W	SOT-323	3000/Tape&Reel