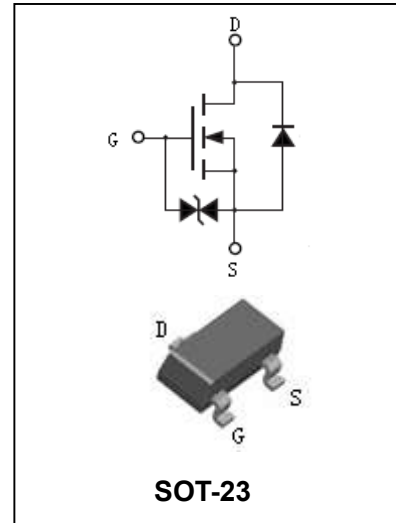


4V Drive Nch MOS FET

2N7002K

FEATURES

- Low on-resistance.
- High ESD.
- High-speed switching.
- Low-voltage drive(4V).
- Drive circuits can be simple.
- Parallel use is easy.



APPLICATIONS

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

ORDERING INFORMATION

Type No.	Marking	Package Code
2N7002K□	7002K	SOT-23

□: none is for Lead Free package;
“G” is for Halogen Free package.

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	63	V
V_{GSS}	Gate -Source voltage	± 20	V
I_D	Drain current	-continuous	±300
		-Pulsed	±800
I_S	Source current	-continuous	200
		-Pulsed	0.8
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W
T_J, T_{stg}	Junction and Storage Temperature	-65 to +150	°C

4V Drive Nch MOS FET

2N7002K

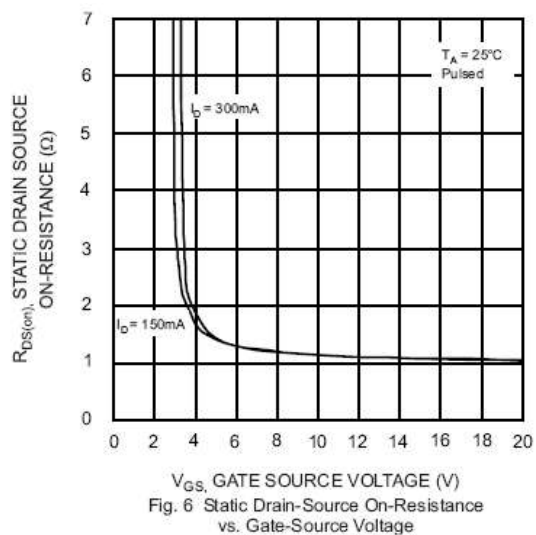
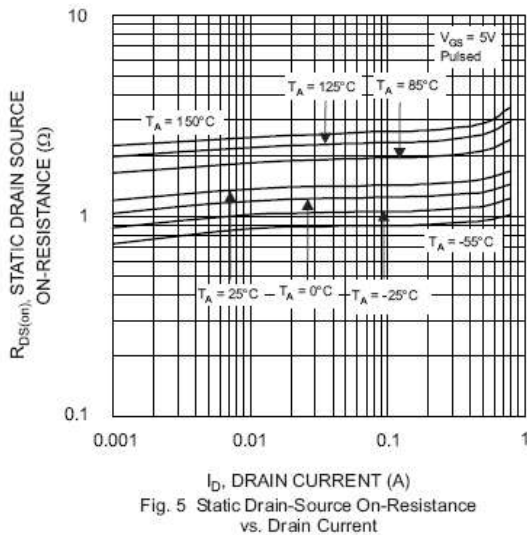
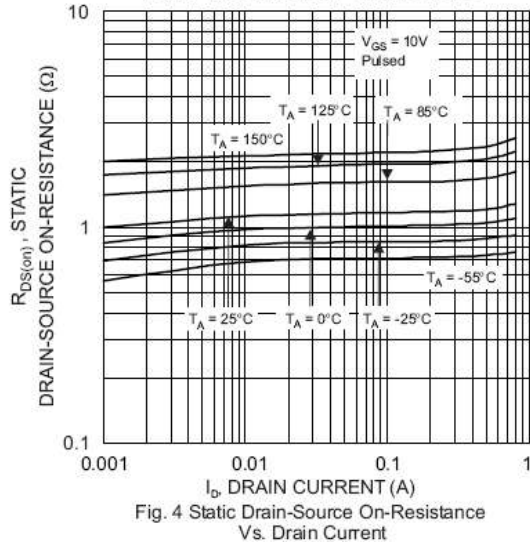
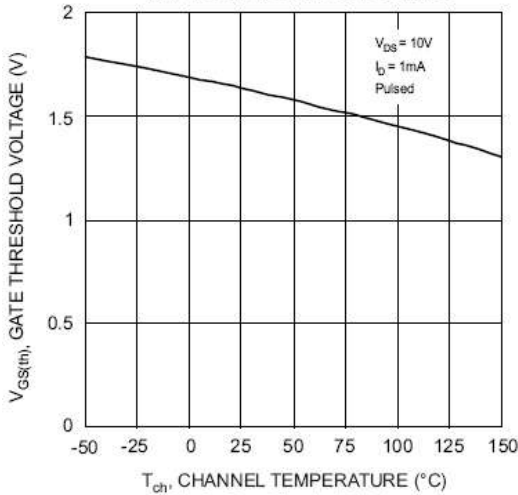
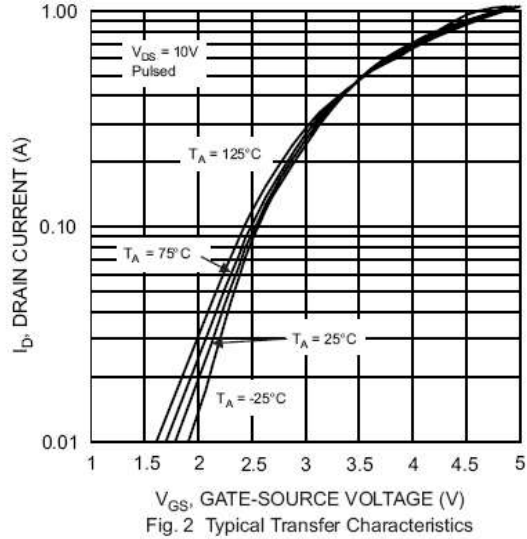
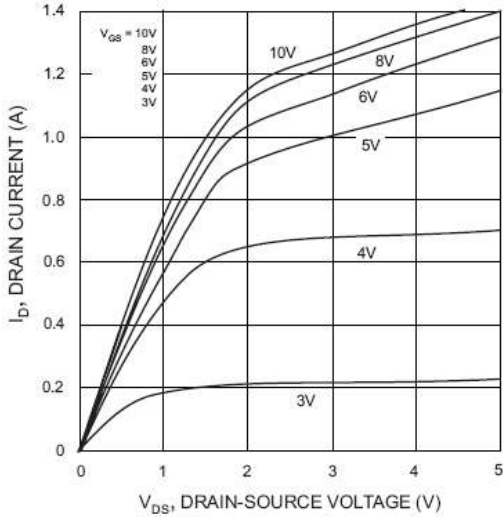
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 6	μA
Forward voltage	V_{SD}	$I_S=0.3A, V_{GS}=0V$			1.2	V
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	63			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.1		2.4	V
Drain cutoff Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			0.06	μA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=0.05A, V_{GS}=5V$			7.5	Ω
		$I_D=0.5A, V_{GS}=10V$			7.5	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=200mA$	80			mS
Input capacitance	C_{ISS}	$V_{DS}=10V, V_{GS}=0V, f=1.0MHz$		33		pF
Output capacitance	C_{OSS}			14		
Reverse transfer capacitance	C_{RSS}			9		
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=150mA,$ $R_L=200\Omega, V_{GS}=10V,$ $R_{GEN}=10\Omega$		6		ns
Rise time	t_R			5		ns
Turn-Off Delay Time	$t_{D(OFF)}$			13		ns
Fall time	t_F			80		ns
Total gate charge	Q_g	$V_{DD}=30V, V_{GS}=10V$ $I_D=200mA$		3	6	nC
Gate-source charge	Q_{gs}			0.6		nC
Gate-drain charge	Q_{gd}			0.5		nC

4V Drive Nch MOS FET

2N7002K

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



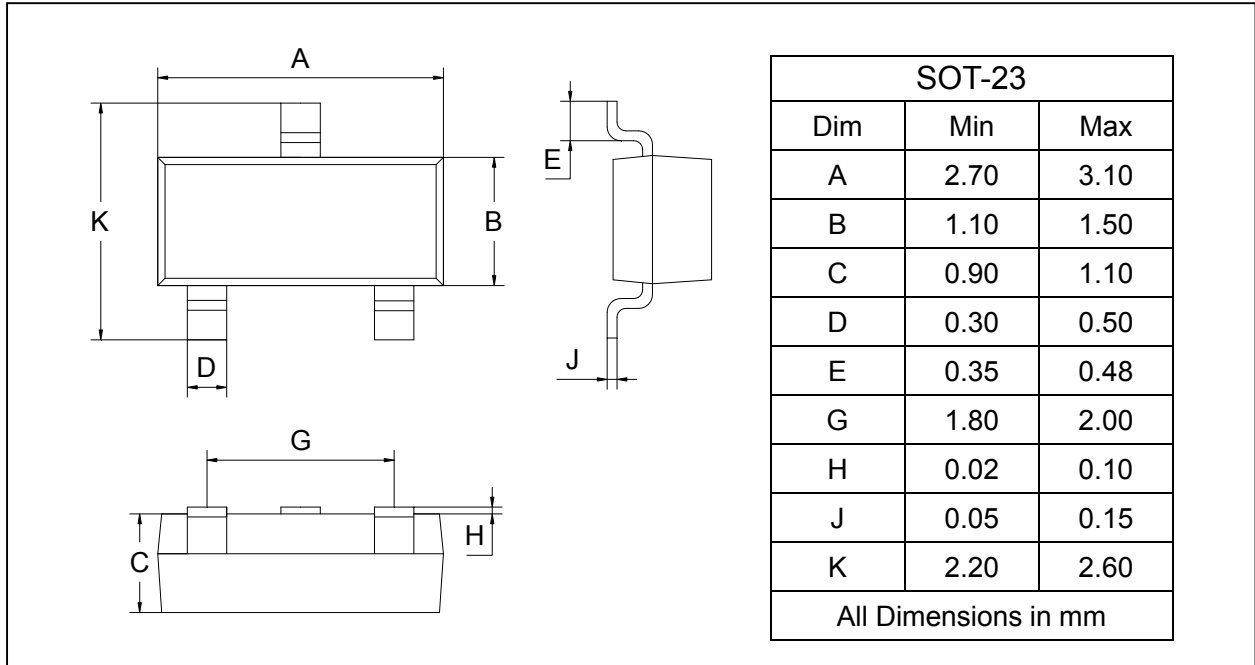
4V Drive Nch MOS FET

2N7002K

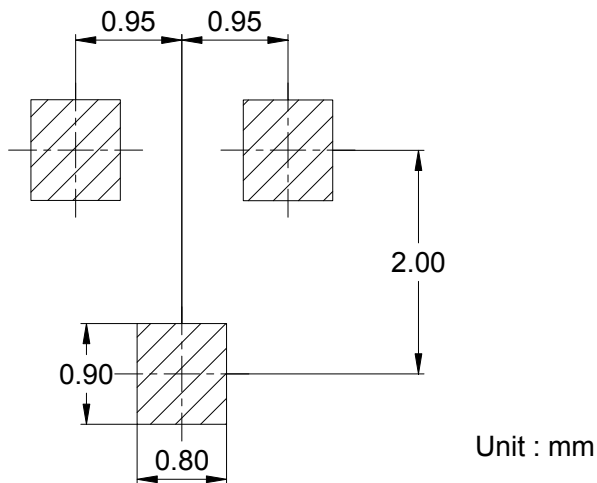
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2N7002K	SOT-23	3000/Tape&Reel