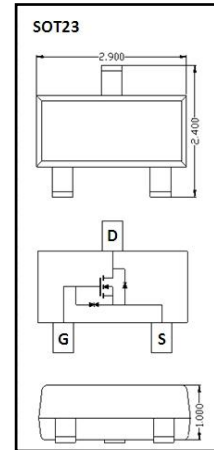
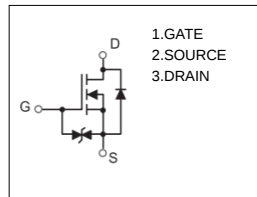


- ◇Epoxy meets UL 94 V-0 flammability rating
- ◇High density cell design for low $R_{DS(ON)}$
- ◇Voltage controlled small signal switch
- ◇Rugged and reliable
- ◇ESD Protected

Device Marking Code	
2N7002K	72K

Internal Structure



MAXIMUM RATINGS ($T_a = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter	Value	Units
V_{DS}	Drain-source Voltage	60	V
V_{GS}	Gate-source-Voltage	± 20	V
I_D	Drain Current	340	mA
P_d	Total Power Dissipation	300	mW
T_J	Junction Temperature	-55 to 150	$^{\circ}\text{C}$
T_{J_s}	Storage Temperature	-55 to 150	$^{\circ}\text{C}$
R	Thermal Resistance from Junction to Ambient	357	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_a = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-source Voltage Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			V
$V_{GS(th)}$	Gate-Threshold Voltage (note 1)	$V_{DS}=V_{GS}, I_D=1mA$	1.0		2.5	V
I_{GSS}	Gate -body Leakage	$V_{DS}=0V, V_{GS}=\pm 10V$ $V_{DS}=0V, V_{GS}=\pm 5V$ $V_{DS}=0V, V_{GS}=\pm 20V$			± 200 ± 100 10	nA nA μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=48V, V_{GS}=0V$			1	μA
$R_{DS(on)}$	Drain-source On-resistance (note 1)	$V_{GS}=4.5V, I_D=200mA$ $V_{GS}=10V, I_D=500mA$			5.3 5.0	Ω
V_{sd}	Diode Forward Voltage (note 1)	$V_{GS}=0V, I_S=300mA$			1.5	V

Q _r	Recovered charge	V _{GS} =0V, I _s =300mA, V _R =25V dI _s /dt=-100A/us		30		nC
----------------	------------------	---	--	----	--	----

Dynamic Characteristics

C _{iss}	Input Capacitance	V _{DS} =10V			40	pF
C _{oss}	Output Capacitance	V _{GS} =0V			30	
C _{rss}	Reverse Transfer Capacitance	f=1MHz			10	

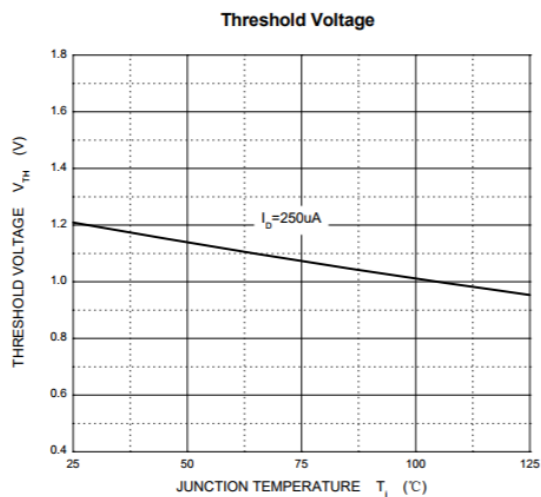
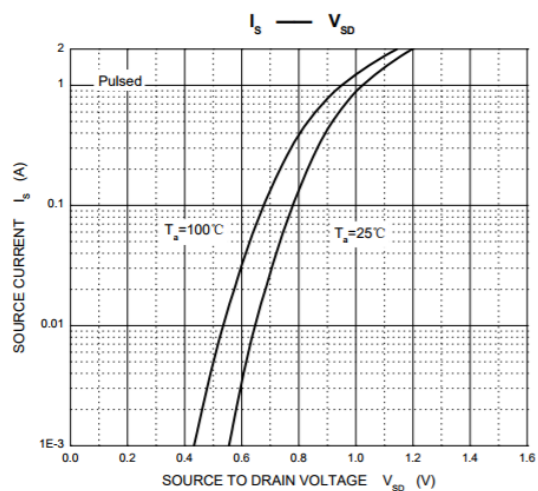
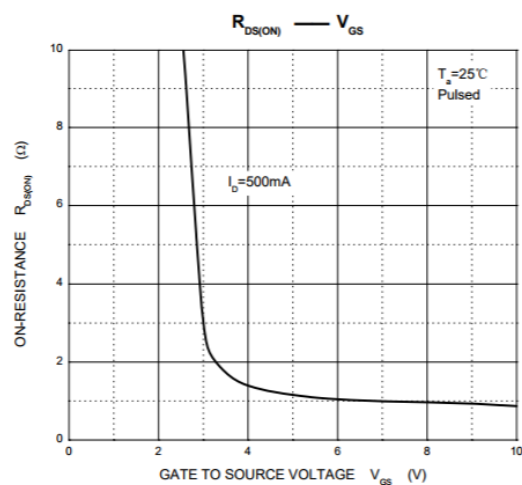
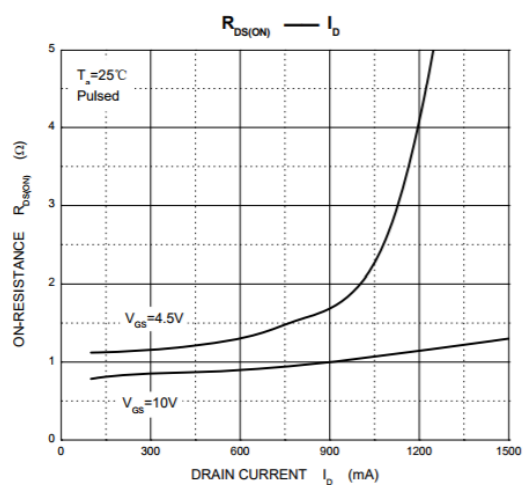
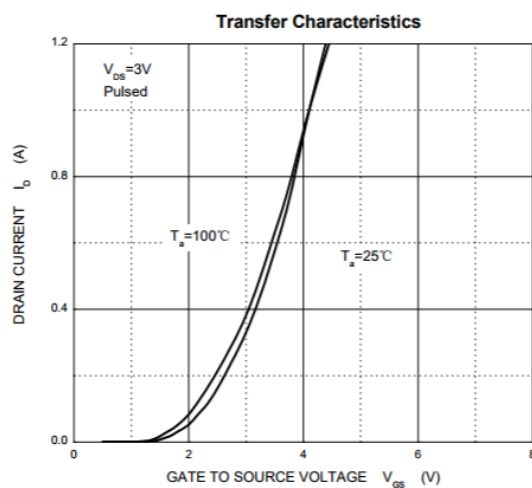
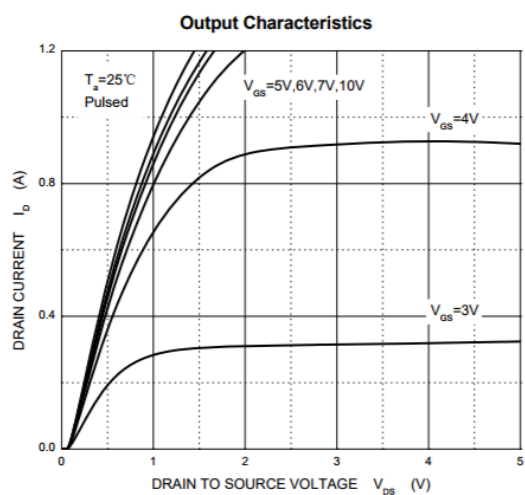
Switching Characteristics

t _{d(on)}	Turn on time	V _{DD} =50V, R _L =250 Ω			10	ns
t _{d(off)}	Turn off time	R _{GS} =50 Ω, V _{GS} =10V, R _G =50 Ω			15	
t _{rr}	Reverse recovery time	V _{GS} =0V, I _s =300mA V _R =25V, dI _s /dt=-100A/us		30		

Note:

1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS



ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
2N7002K	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

