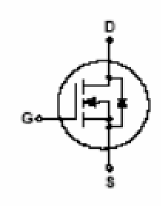
JXND ELECTRONICS CO.,LTD

Plastic-Encapsulate Transistor
MOSFET(N-Channel) 2N7002K

FEATURES

High density cell design for low RDS(ON)
Voltage cotrolled small signal switch
Rugged and reliable
ESD Rating：HBM 2300V
High saturation current capability



SOT-23

1. GATE
2. SOURCE
3. DRAIN

MARKING:7002K

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol （符号）	**Parameter** （参数名称）	**Value** （额定值）	**Units** （单位）
V_{DS}	Drain-Source voltage	60	V
I_D	Drain current	300	mA
P_D	Power Dissipation	225	mW
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

Parameter	**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	1	1.7	2.5	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±500	nA
		V_{DS}=0V, V_{GS}=±20V			±10	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	uA
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=500mA		1	2	Ω
		V_{GS}=5V, I_D=400mA		1.3	3	Ω
Forward Trans conductance	gfs	V_{DS}=10V, I_D=200mA	0.1			s
Diode Forward Voltage	V_{SD}	I_S=200mA ,V_{GS}=0V			1.2	V
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1MHz			50	pF
Output Capacitance	Coss				25	
Reverse Transfer Capacitance	Crss				5	

SWITCHING TIME

Turn-On Time	$t_{d(on)}$	V_{DD}=30V, V_{GS}=10V I_D=200mA, R_{GEN}=10Ω,		10		ns
Turn-On Rise Time	t_r			50		ns
Turn-Off Time	$t_{d(off)}$			17		ns
Turn-Off Fall Time	t_f			10		ns

Typical Characteristics

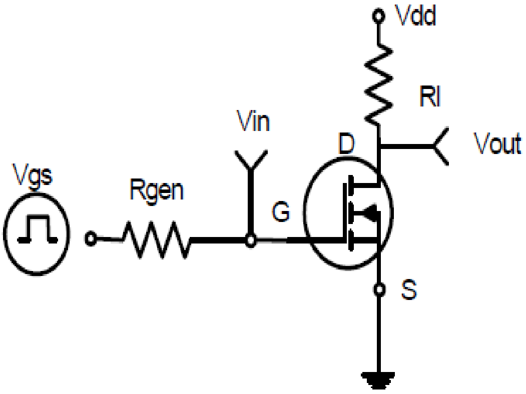


Figure 1:Switching Test Circuit

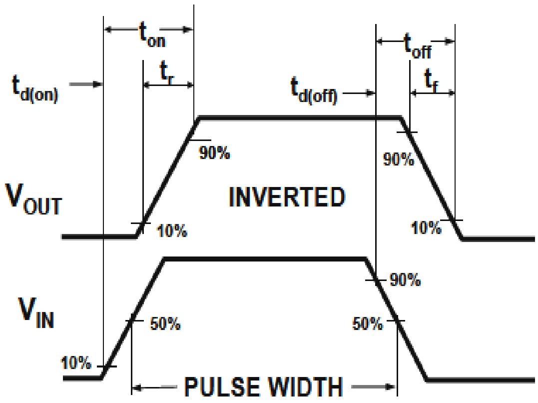


Figure 2:Switching Waveforms

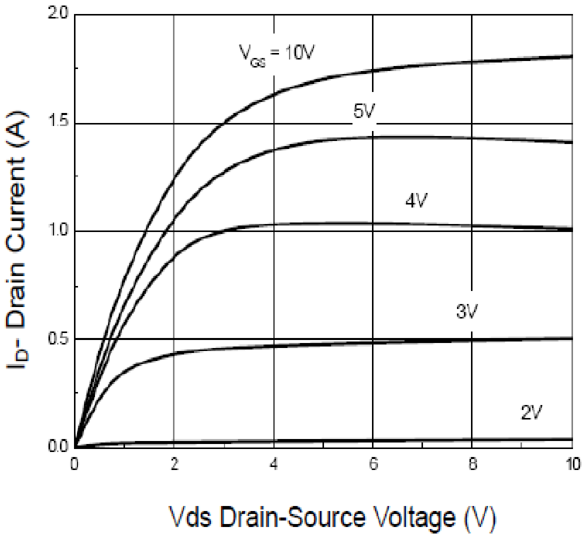


Figure 3 Output Characteristics

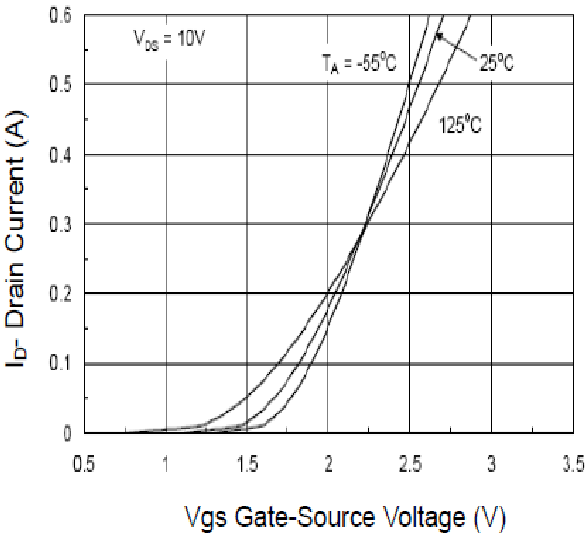


Figure 4 Transfer Characteristics