

**Description**

- High speed switching application.

**Features**

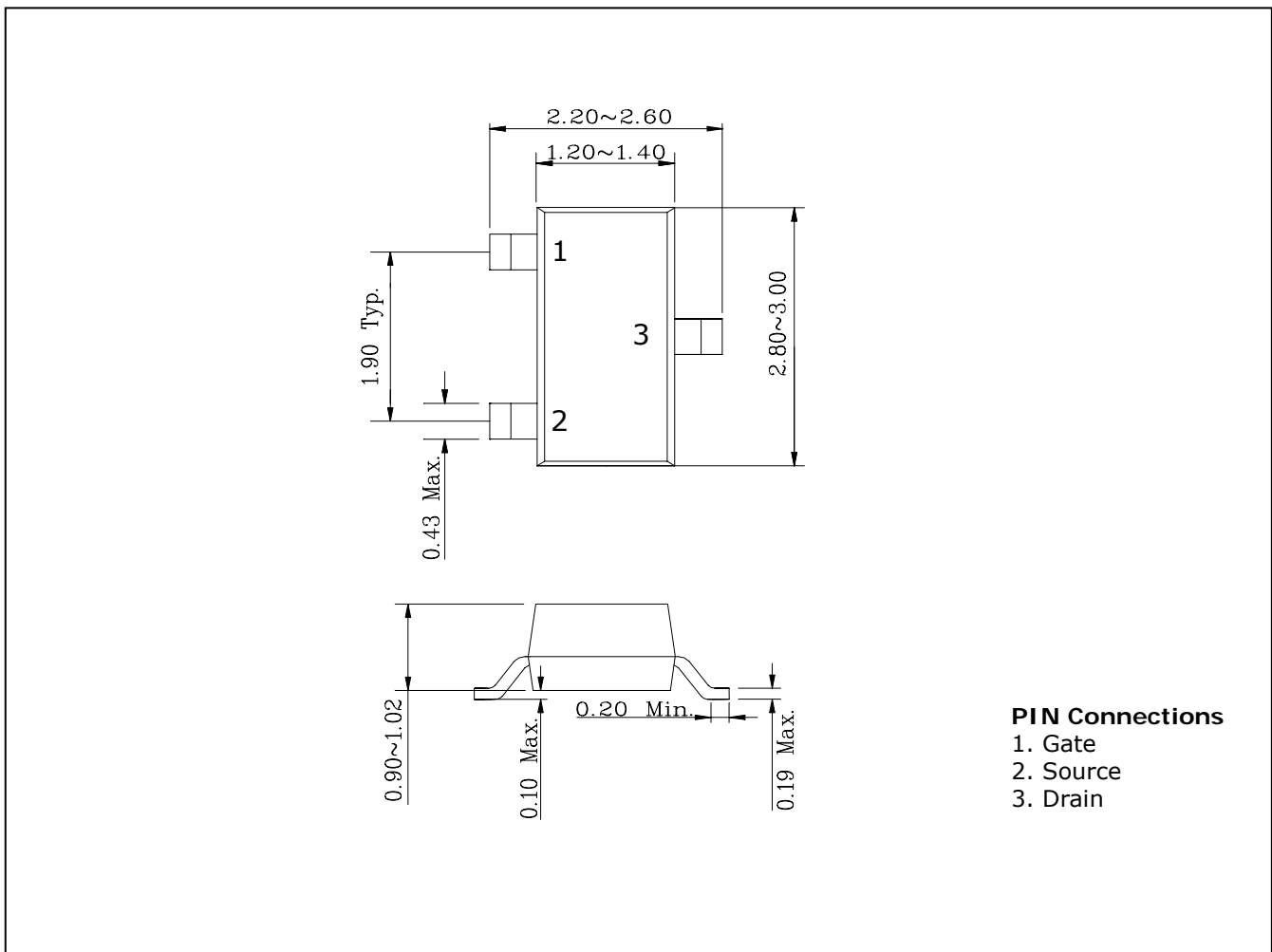
- High density cell design for low  $R_{DS(on)}$ .
- Voltage controlled small signal switch
- High saturation current capability.

**Ordering Information**

Type NO.	Marking	Package Code
STK7002	K702	SOT-23

**Outline Dimensions**

**unit : mm**



## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Drain-source voltage	$V_{DSS}$	60	V
Gate-source voltage	$V_{GSS}$	±20	V
Drain current (DC)	$I_D$	115	mA
Drain Current (Pulsed) ①	$I_{DP}$	800	mA
Drain power dissipation ②	$P_D$	350	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

## Electrical Characteristics

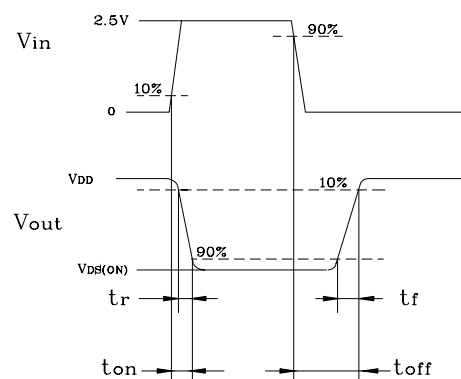
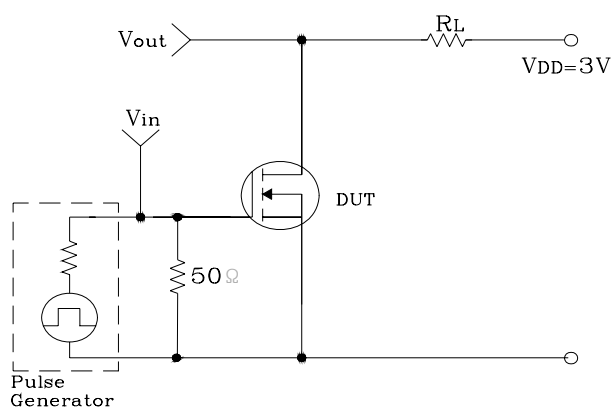
(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=10 \mu A, V_{GS}=0V$	60	-	-	V
Gate threshold voltage	$V_{GS(th)}$	$I_D=250 \mu A, V_{DS}=V_{GS}$	1	2.0	2.5	V
Drain-source cut-off current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate leakage current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	±100	nA
Static drain-Source on-resistance ③	$R_{DS(on)}$	$V_{GS}=5V, I_D=50mA$	-	3.2	5	Ω
		$V_{GS}=10V, I_D=500mA$	-	2.4	5	Ω
Forward transfer conductance ③	$g_{fs}$	$V_{DS}=10V, I_D=100mA$	80	-	-	mS
Input capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	22	-	pF
Output capacitance	$C_{oss}$		-	11	-	
Reverse Transfer capacitance	$C_{rss}$		-	2	-	
Turn-on time ④	$t_{on}$	$V_{DD}=30V, I_D=100mA$	-	7	-	ns
Turn-off time ④	$t_{off}$	$V_{GS}=10V, R_G=25\Omega$	-	11	-	ns

Note ;

- ① Limited by maximum junction temperature.
- ② Device mounted on 99.5% Alumina 10 x 8 x 0.6 mm
- ③ Pulse width ≤ 300 μs, Duty cycle ≤ 2%
- ④ Vin signal condition  
-. Rise & Fall time ≤ 5ns, Duty cycle ≤ 1%, Pulse width ≤ 10 μs

Fig Fig. 1 Switching Time Test Circuit



Electrical Characteristic Curves

Fig. 1  $I_D - V_{DS}$

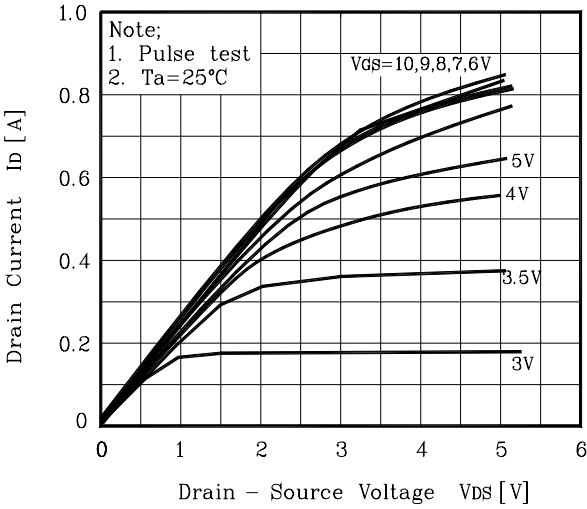


Fig. 2  $I_D - V_{GS}$

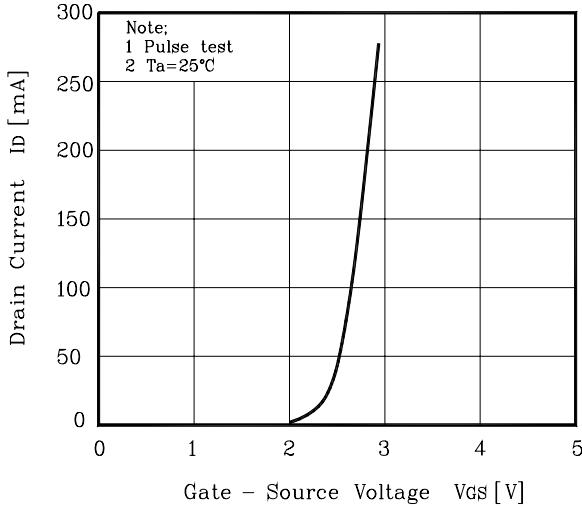


Fig. 3  $R_{DS(on)} - I_D$

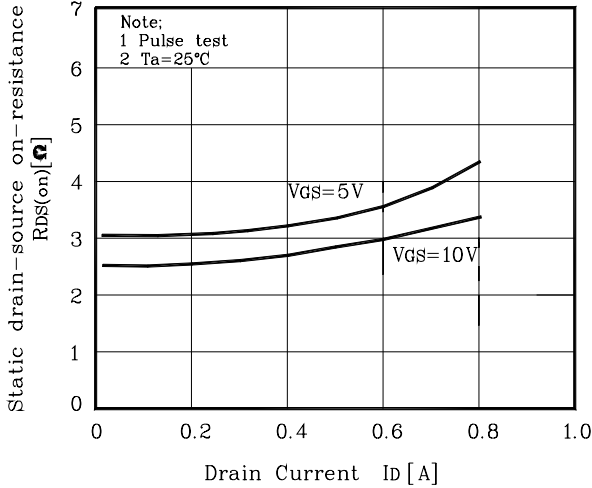


Fig. 4  $R_{DS(on)} - V_{GS}$

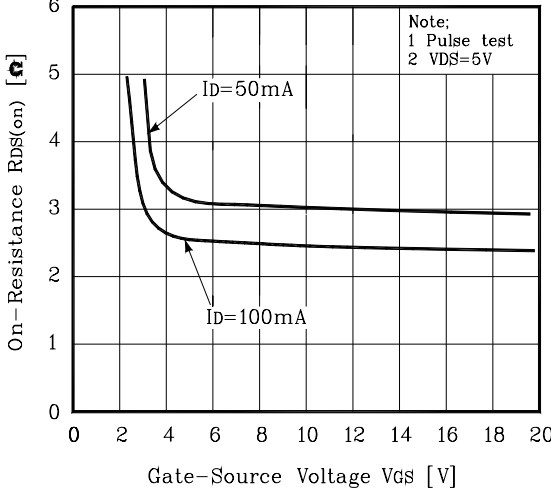


Fig. 5 Capacitance -  $V_{DS}$

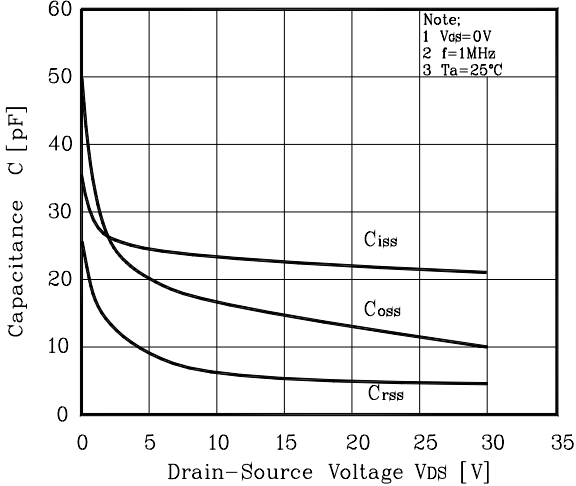
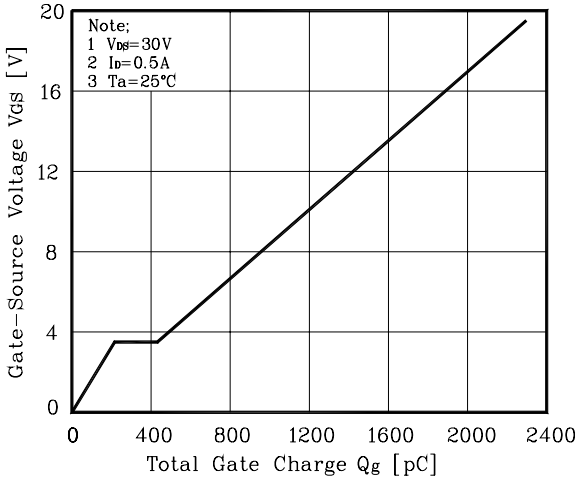
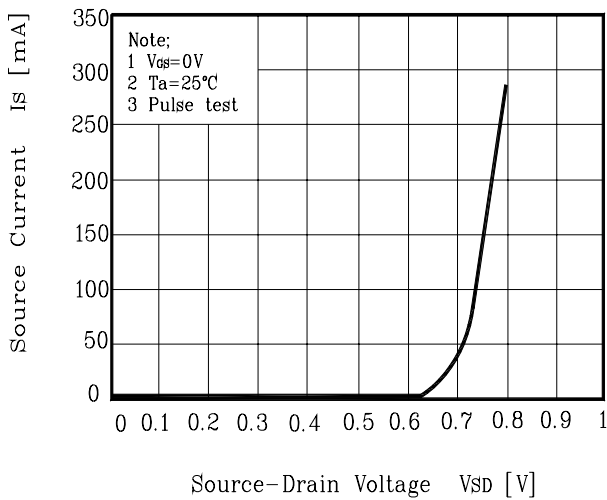


Fig. 6  $V_{GS} - Q_g$



Electrical Characteristic Curves

Fig. 7  $I_s - V_{SD}$



The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.