

Description

- High speed switching application.

Features

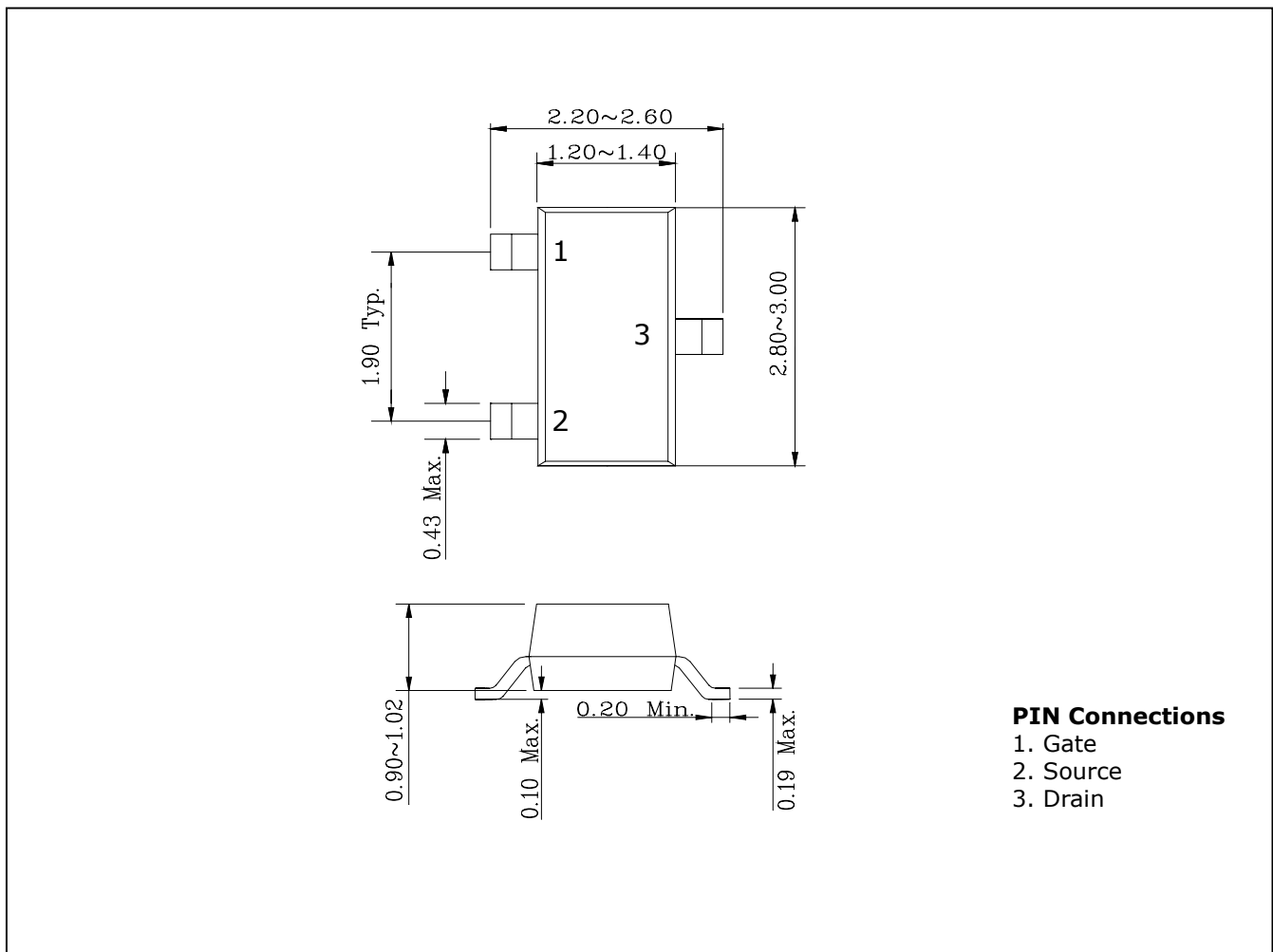
- High density cell design for low $R_{DS(on)}$.
- Voltage controlled small signal switch
- High saturation current capability.

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

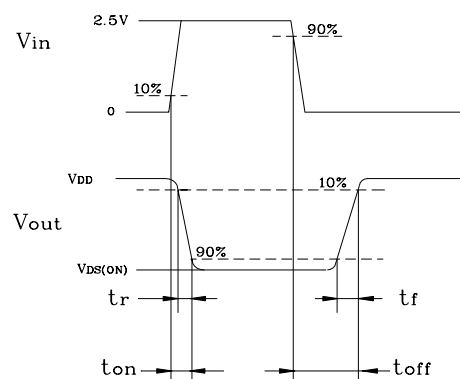
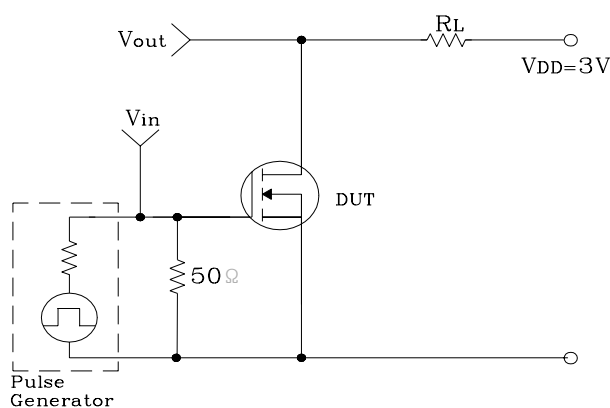
(Ta=25°C)

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	7.5	Ω
		$V_{GS}=10V, I_D=100mA$	-	2.4	7.5	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 $I_D - V_{DS}$

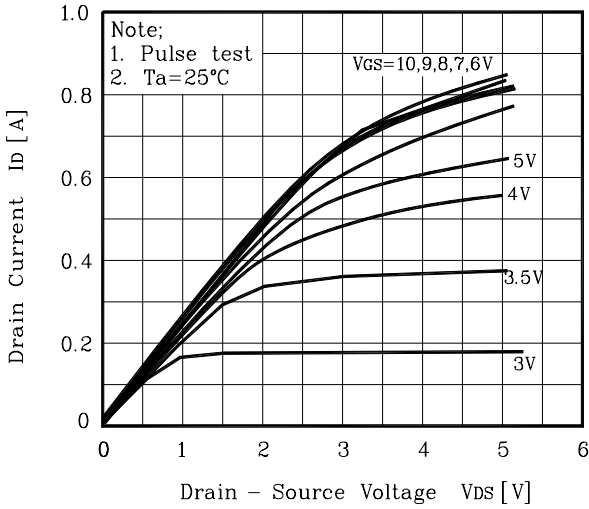


Fig. 2 $I_D - V_{GS}$

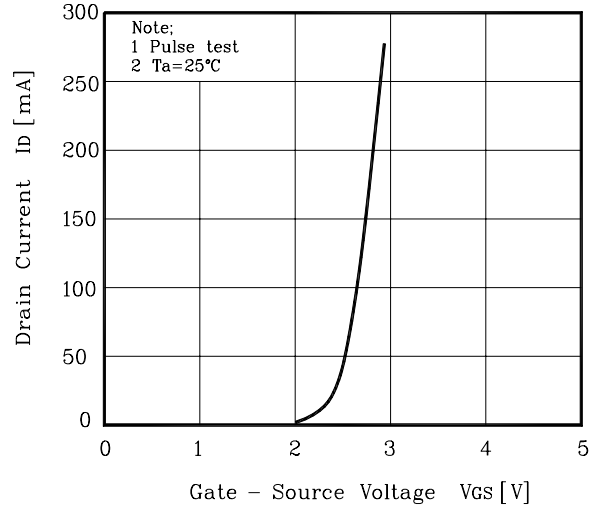


Fig. 3 $R_{DS(on)} - I_D$

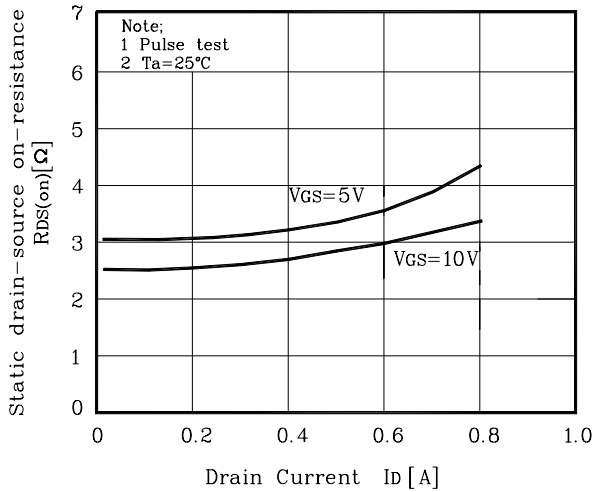


Fig. 4 $R_{DS(on)} - V_{GS}$

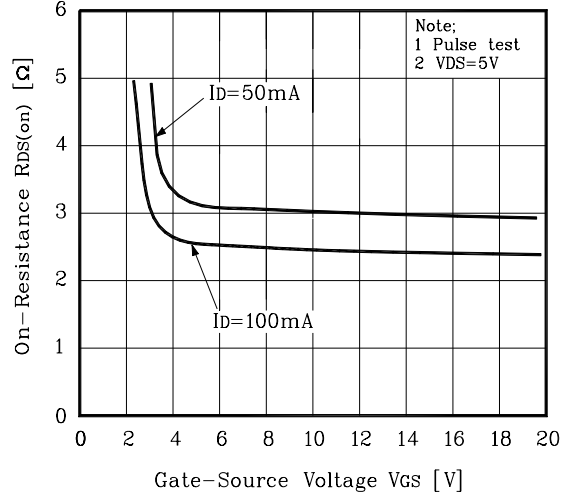


Fig. 5 Capacitance- V_{DS}

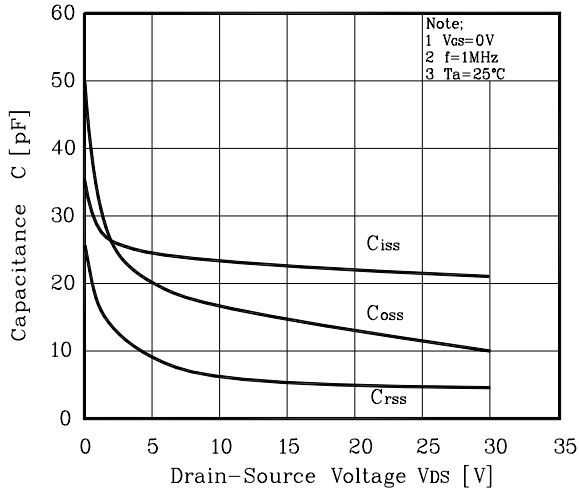
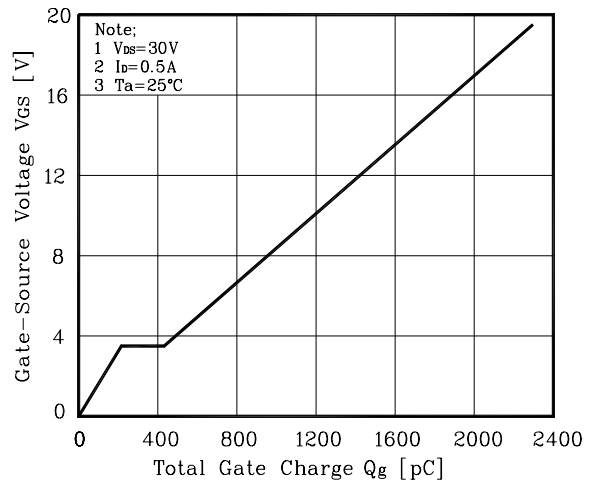
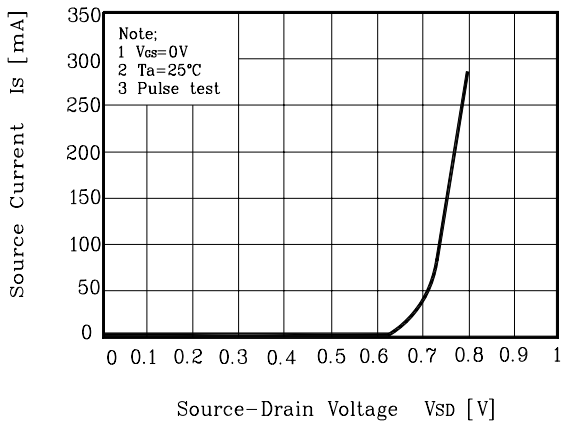


Fig. 6 $V_{GS} - Q_g$



Electrical Characteristic Curves

Fig. 7 $I_S - V_{SD}$



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