

**Description**

- High speed switching application.

**Features**

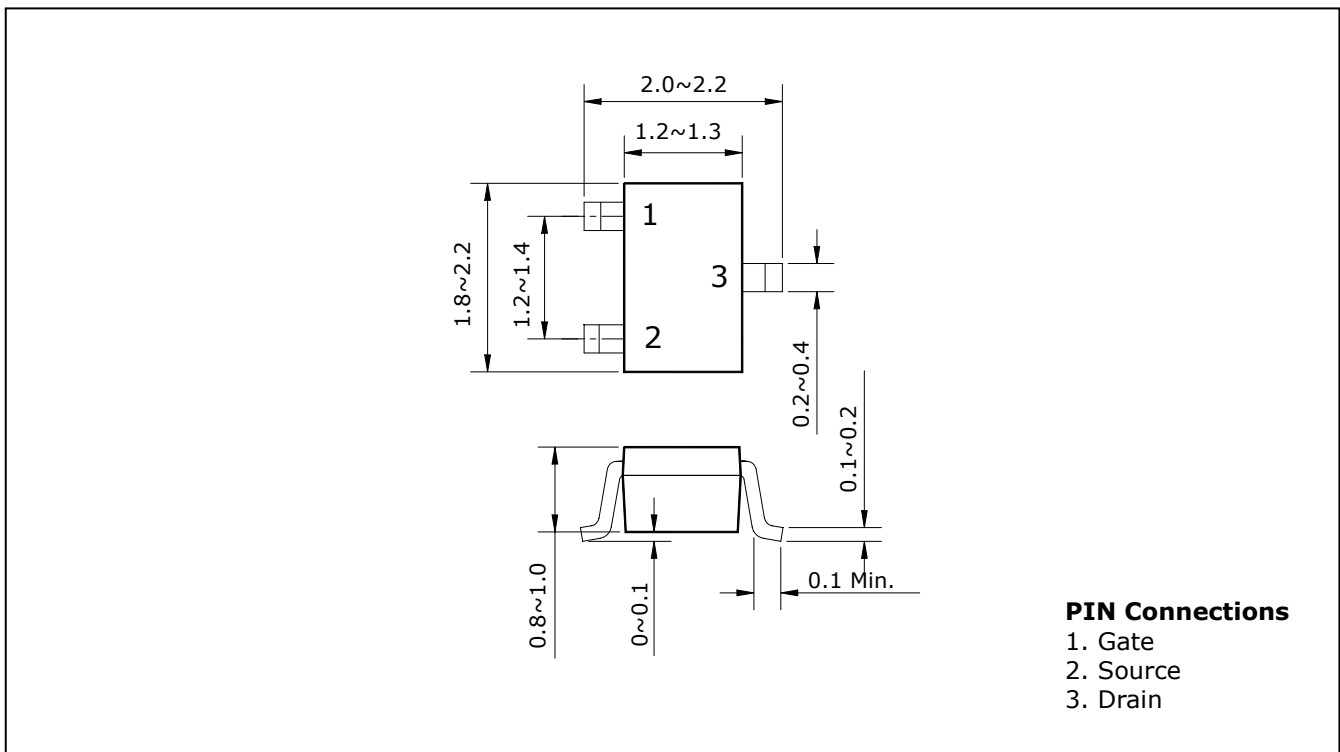
- High density cell design for low  $R_{DS(ON)}$ .
- Voltage controlled small signal switch
- High saturation current capability.

**Ordering Information**

Type NO.	Marking	Package Code
STK7002U	K72	SOT-323

**Outline Dimensions**

unit : mm



## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Drain-Source voltage	$V_{DSS}$	60	V
Gate-Source voltage	$V_{GS}$	±20	V
Maximum Drain current	$I_D$	115	mA
Pulsed Drain Current	$I_{DP} *$	800	mA
Power Dissipation	$P_D$	200	mW
Maximum Junction-to-Ambient	$R_{thJA}$	625	°C/W
Operating Junction and Storage temperature range	$T_J, T_{stg}$	-55~150	°C

\*  $PW \leq 10 \mu s$ , Duty cycle  $\leq 1\%$

## Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Drain-Source breakdown voltage	$BV_{DSS}$	$I_D=10\mu A, V_{GS}=0$	60	-	-	V
Gate-Threshold voltage	$V_{GS(th)}$	$I_D=0.25mA, V_{DS}=V_{GS}$	1	2.0	2.5	V
Zero Gate voltage drain current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0$	-	-	1	μA
Gate-body leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	±100	nA
Drain-Source on-resistance	$R_{DS(ON)} *$	$V_{GS}=5V, I_D=50mA$	-	3.2	7.5	Ω
		$V_{GS}=10V, I_D=500mA$	-	2.4	7.5	
Forward transconductance	$g_{fs}$	$V_{DS}=10V, I_D=0.2A$	80	-	-	mS
Input capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0, f=1MHz$	-	22	50	pF
Output capacitance	$C_{oss}$		-	11	25	
Reverse Transfer capacitance	$C_{rss}$		-	2	5	
Turn-on time	$t_{ON}$	$V_{DD}=30V, I_D=0.2A$	-	7	20	ns
Turn-off time	$t_{OFF}$	$V_{GS}=10V, R_G=25\Omega$	-	11	20	ns

\*  $PW \leq 300 \mu s$ , Duty cycle  $\leq 1\%$

Electrical Characteristic Curves

Fig. 1  $I_D - V_{DS}$

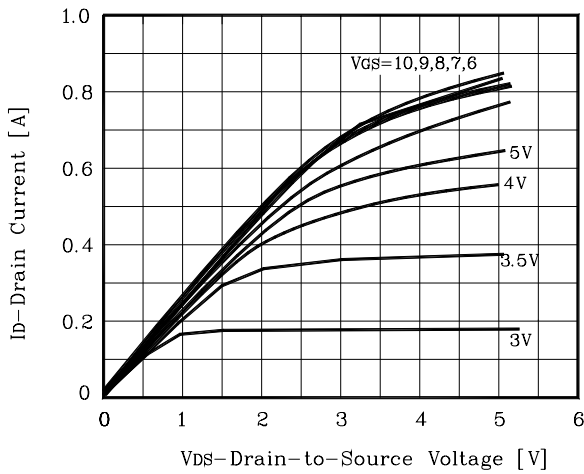


Fig. 2  $I_D - V_{GS}$

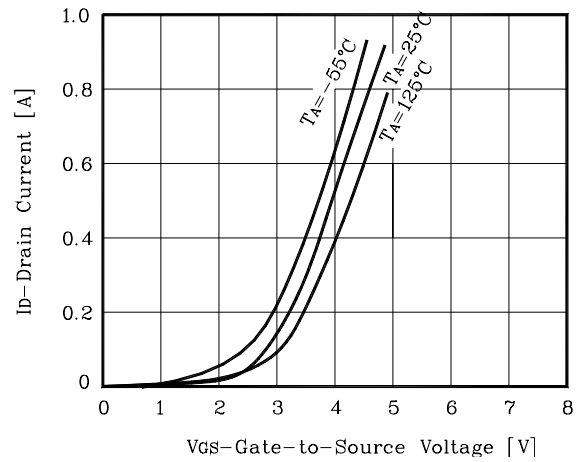


Fig. 3  $R_{DS(on)} - I_D$

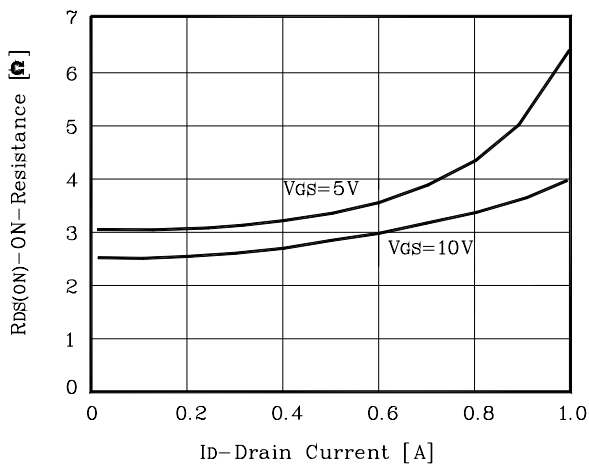


Fig. 4  $C - V_{DS}$

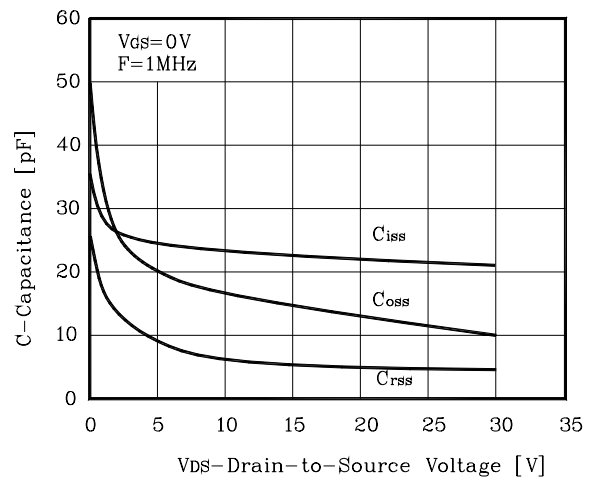


Fig. 5  $V_{GS} - Q_g$

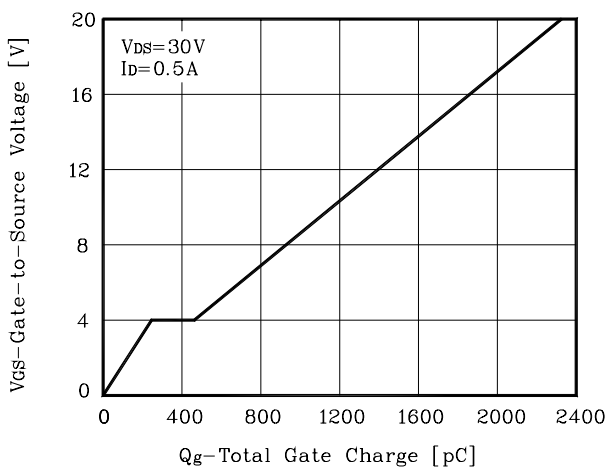
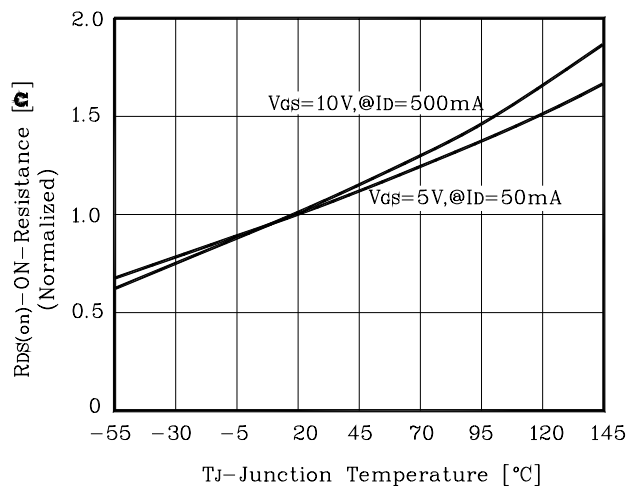
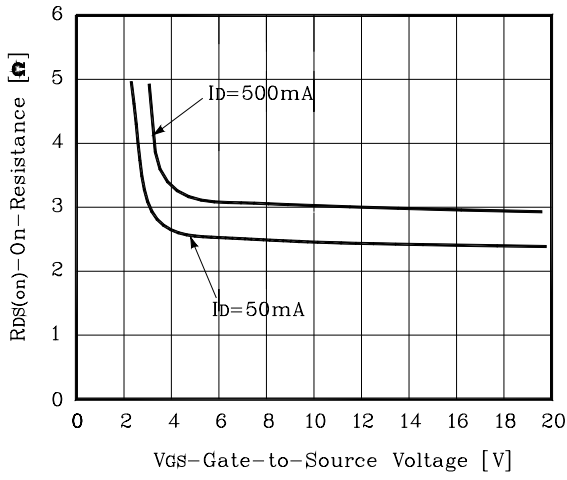


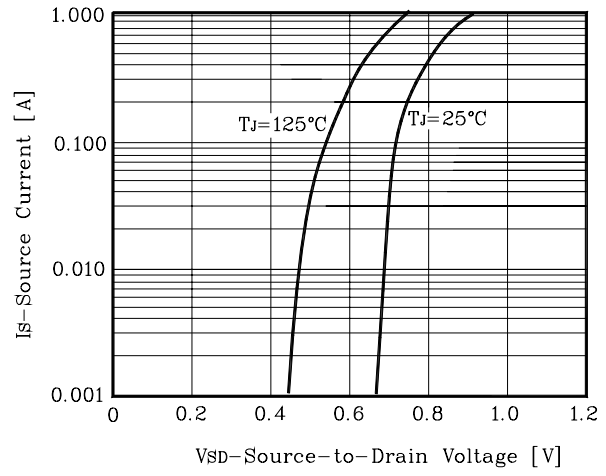
Fig. 6  $R_{DS(on)} - T_J$



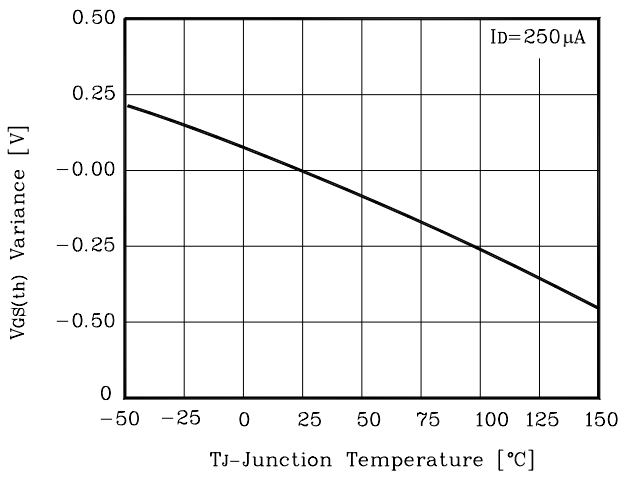
**Fig. 7**  $R_{DS(on)}$  -  $V_{GS}$



**Fig. 8**  $I_S$  -  $V_{SD}$



**Fig. 9**  $V_{GS(th)}$  -  $T_J$



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