

Description

- High speed switching application.

Features

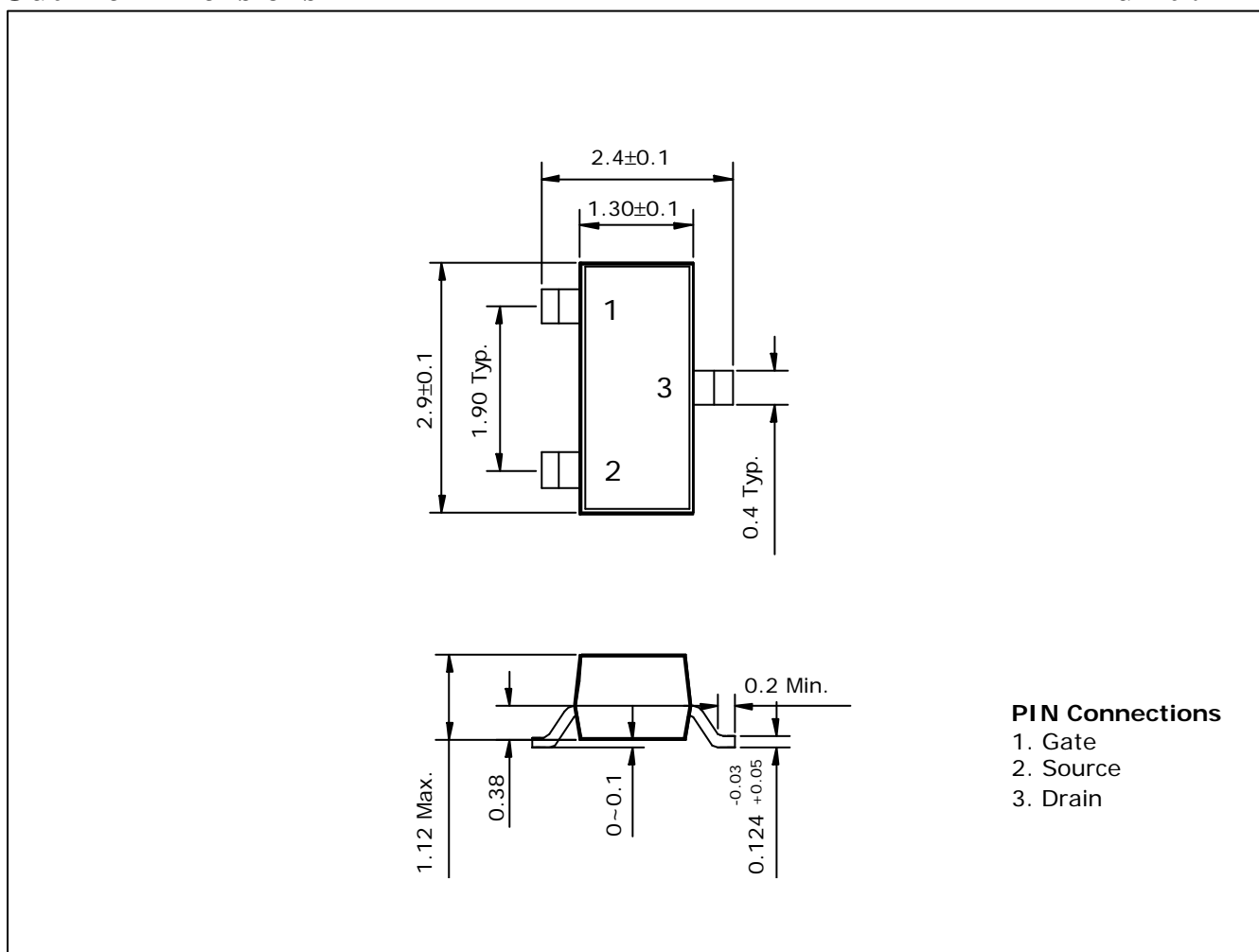
- High density cell design for low $R_{DS(ON)}$.
- Voltage controlled small signal switch
- High saturation current capability.

Ordering Information

Type NO.	Marking	Package Code
STK7002	K702	SOT-23

Outline Dimensions

unit : mm



PIN Connections
 1. Gate
 2. Source
 3. Drain

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_{DM}	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

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
On-state drain current	$I_{D(on)}$	$V_{DS} = 7.5V, V_{GS} = 10V$	500	1000	-	mA
Drain-Source on-resistance	$R_{DS(on)}$	$V_{GS} = 5V, I_D = 0.05A$	-	3.2	7.5	Ω
		$T_C = 125$		5.8	13.5	
		$V_{GS} = 10V, I_D = 0.5A$	-	2.4	7.5	
		$T_C = 125$		4.4	13.5	
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	
Turn-off time	t_{OFF}	$V_{GEN} = 10V, R_G = 25\Omega$	-	11	20	ns

Electrical Characteristic Curves

Fig. 1 $I_D - V_{DS}$

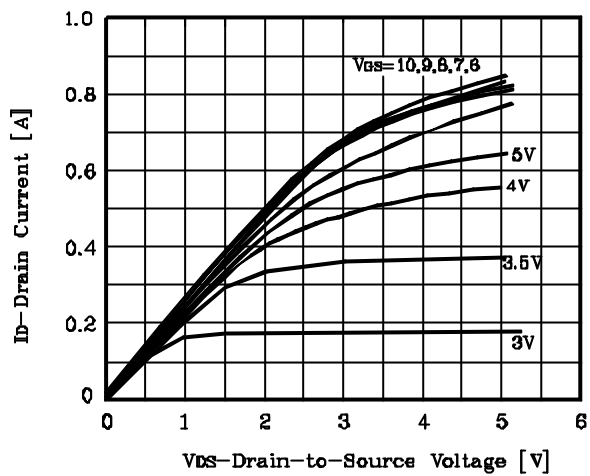


Fig. 2 $I_D - V_{GS}$

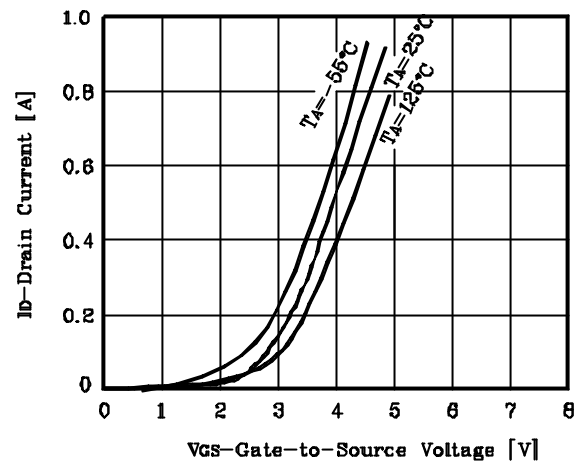


Fig. 3 $r_{DS(on)} - I_D$

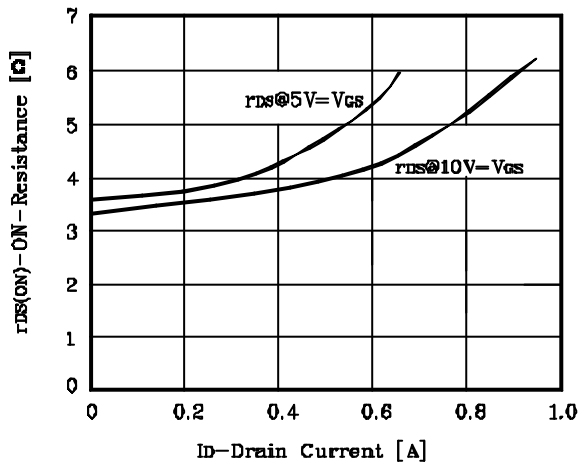


Fig. 4 $C - V_{DS}$

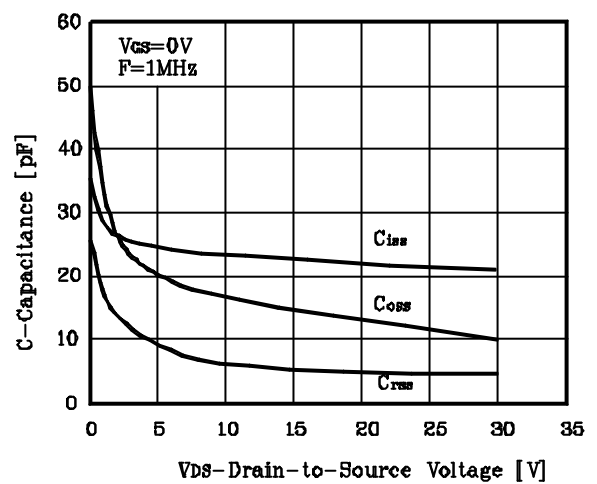


Fig. 5 $V_{GS} - Q_g$

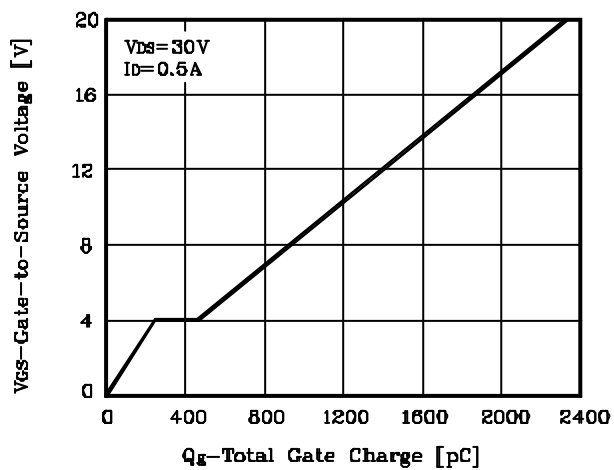


Fig. 6 $r_{DS(on)} - T_J$

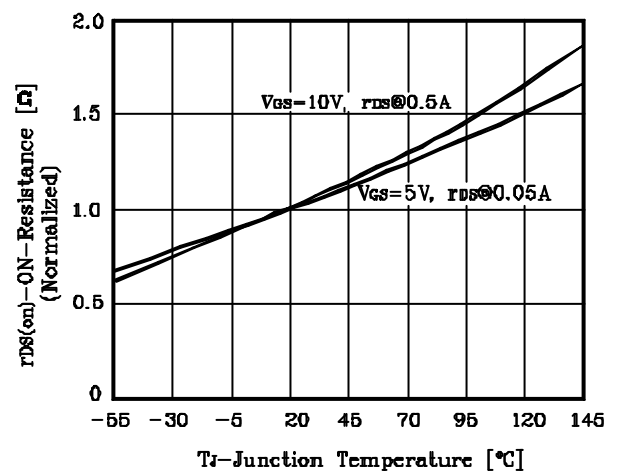


Fig. 7 $r_{DS(on)}$ - V_{GS}

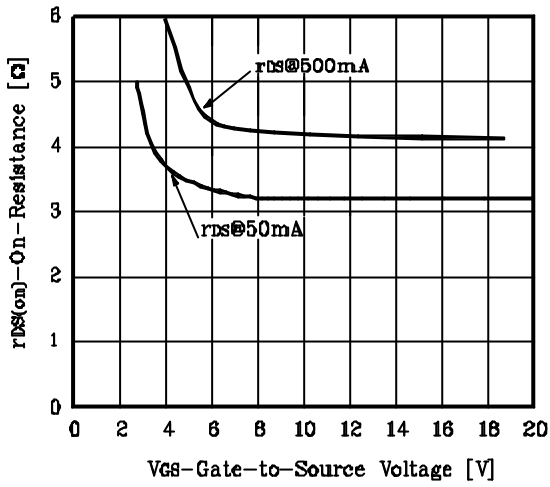


Fig. 8 I_S - V_{SD}

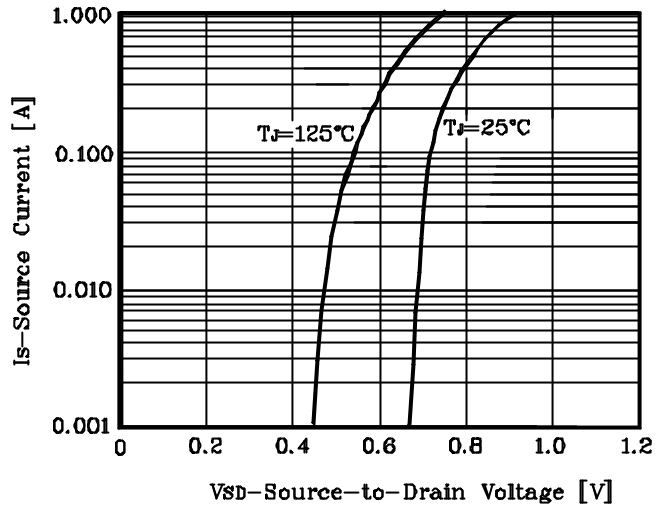


Fig. 9 $V_{GS(th)}$ - T_J

