AUK Semiconductor

STK7002

N-Channel Enhancement-Mode MOSFET

Description

- High speed switching application.

Features

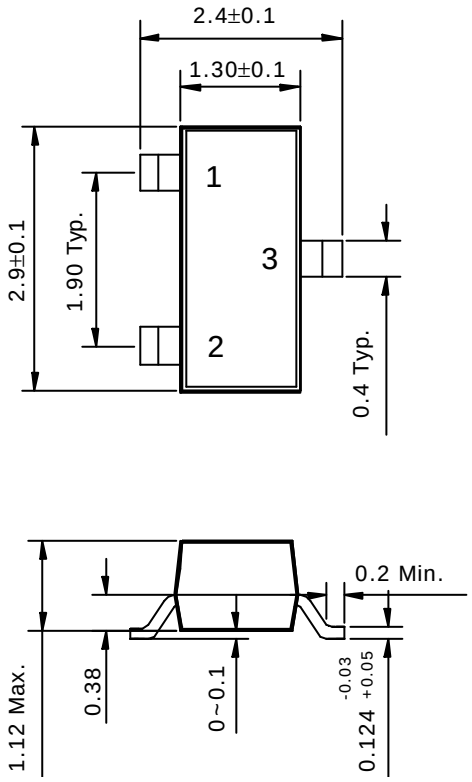
- High density cell design for low $R_{DS(ON)}$.
- Voltage controlled small signal switch
- High saturation current capability.

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
Drian-Source breakdown voltage	BV_{DSS}	I_D=10μA, 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}=±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
		Tc=125℃		5.8	13.5	
		V_{GS}=10V, I_D=0.5A	-	2.4	7.5	
		Tc=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, V_{GEN}=10V, R_G=25Ω	-	7	20	ns
Turn-off time	t_{OFF}		-	11	20	ns

Electrical Characteristic Curves

Fig. 1 I_D - V_{DS}

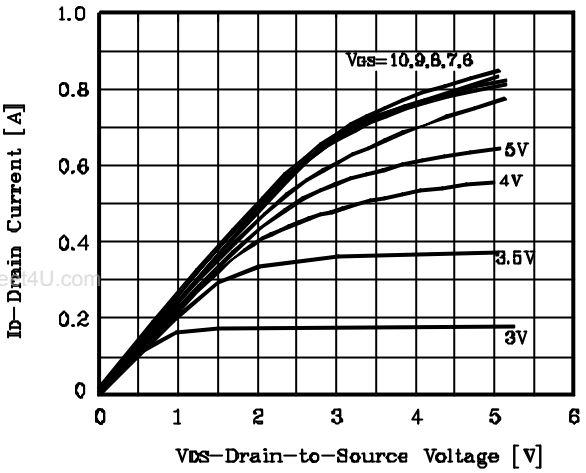


Fig. 2 I_D - V_{GS}

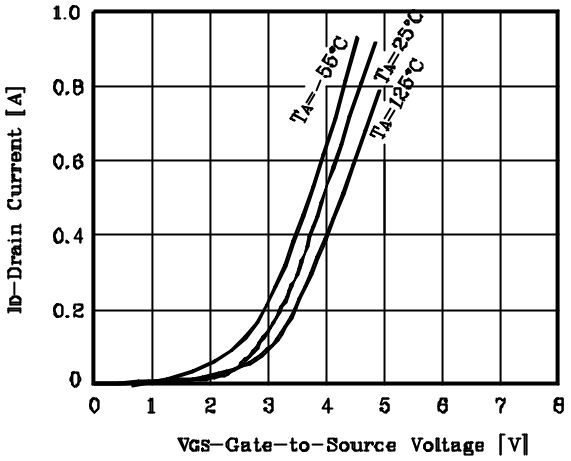


Fig. 3 $r_{DS(on)}$ - I_D

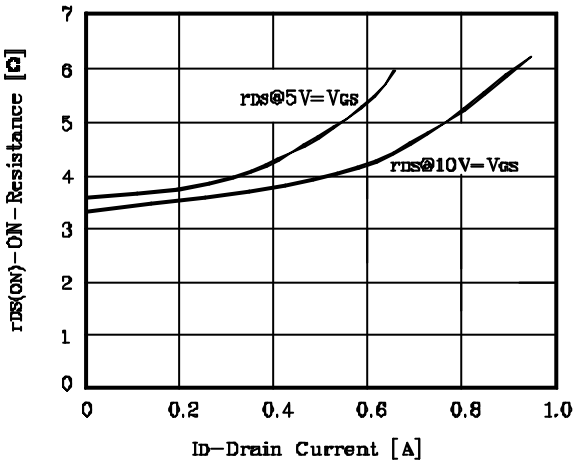


Fig. 4 C - V_{DS}

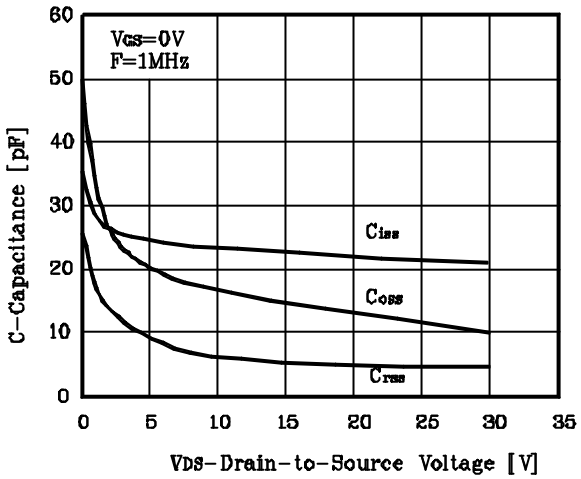


Fig. 5 V_{GS} - Q_g

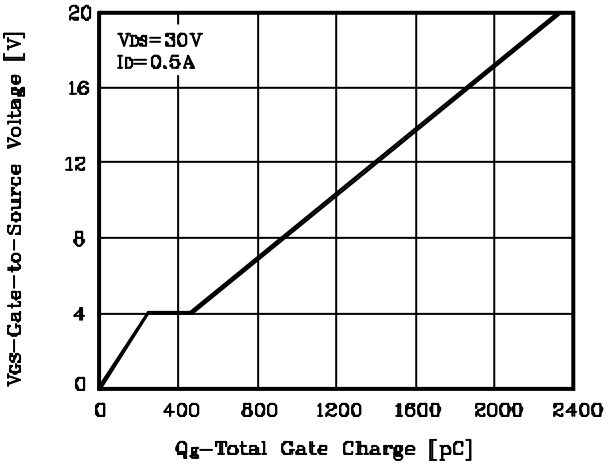


Fig. 6 $r_{DS(on)}$ - T_J

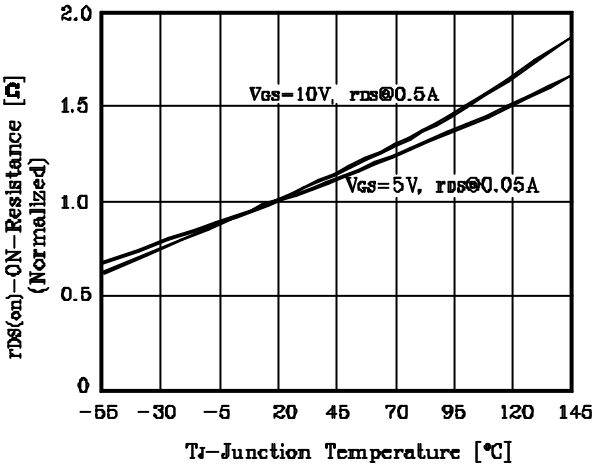


Fig. 7 $r_{DS(on)}$ - V_{GS}

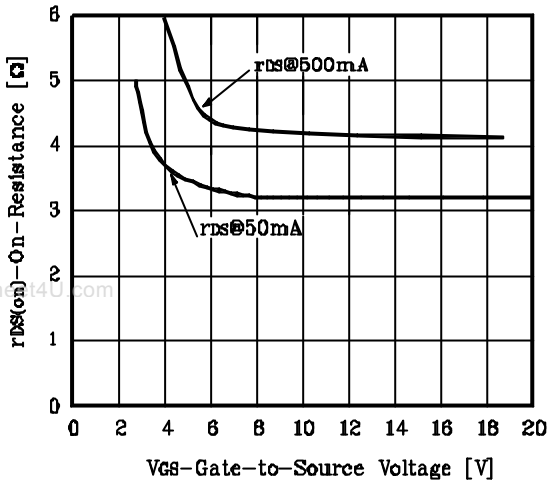


Fig. 8 I_S - V_{SD}

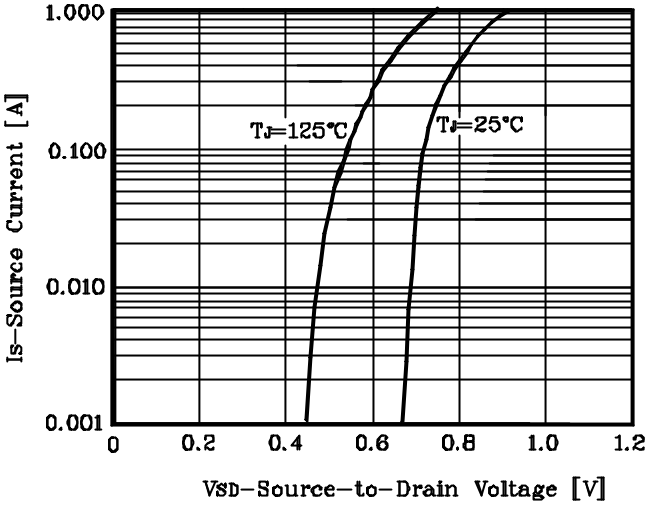


Fig. 9 $V_{GS(th)}$ - T_J