

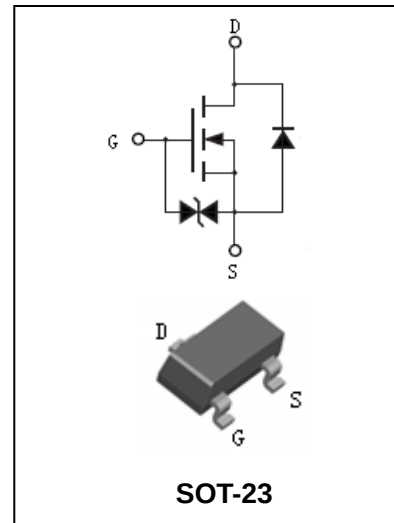
N-Channel Enhancement Mode MOSFET

RK7002A

FEATURES

- Low on-resistance
- High ESD
- High-speed switching
- Low-voltage drive(4V)
- Drive circuits can be simple
- Parallel use is easy
- MSL 1

HF



APPLICATIONS

- N-channel enhancement mode effect transistor
- Switching application

ORDERING INFORMATION

Type No.	Marking	Package Code
RK7002A	RKS	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	60	V
V_{GS}	Gate -Source voltage	± 20	V
I_D	Drain current -continuous	± 300	mA
	-Pulsed	± 800	mA
I_S	Source current -continuous	200	mA
	-Pulsed	0.8	A
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W
T_J, T_{stg}	Junction and Storage Temperature	-65 to +150	°C

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 10	μA
Forward voltage	V_{SD}	$I_S=300mA, V_{GS}=0V$			1.2	V
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=1mA$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
Drain cutoff Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=500mA, V_{GS}=10V$		2.4	7.5	Ω
		$I_D=50mA, V_{GS}=5V$		2.5	7.5	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=200mA$	80			mS
Input capacitance	C_{ISS}	$V_{DS}=10V, V_{GS}=0V, f=1.0MHz$		22		pF
Output capacitance	C_{OSS}			14		
Reverse transfer capacitance	C_{RSS}			6		
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=150mA,$ $R_L=200\Omega, V_{GS}=10V,$ $R_{GEN}=10\Omega$		6		ns
Rise time	t_R			5		ns
Turn-Off Delay Time	$t_{D(OFF)}$			13		ns
Fall time	t_F			80		ns
Total gate charge	Q_g	$V_{DD}=30V, V_{GS}=10V$ $I_D=200mA$		3	6	nC
Gate-source charge	Q_{gs}			0.6		nC
Gate-drain charge	Q_{gd}			0.5		nC

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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

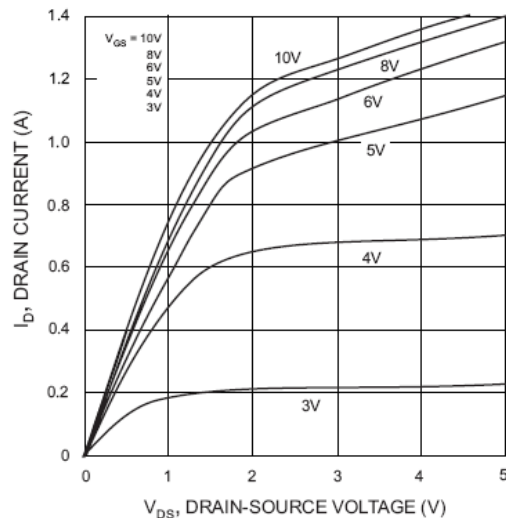


Fig. 1 Typical Output Characteristics

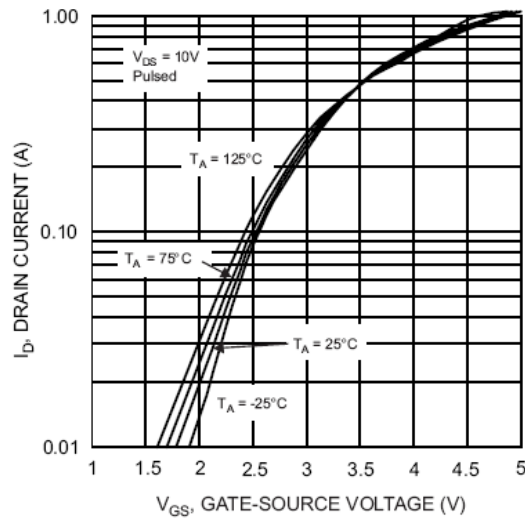


Fig. 2 Typical Transfer Characteristics

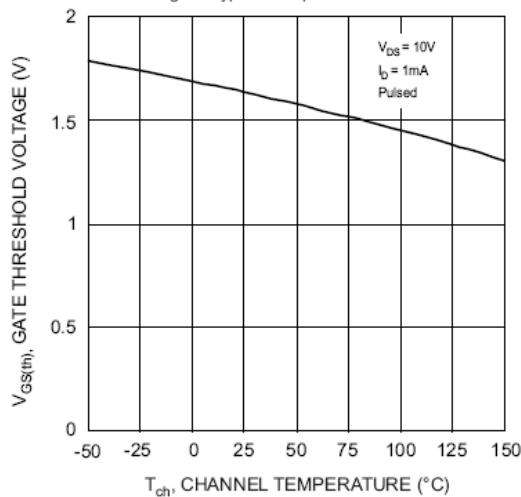


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

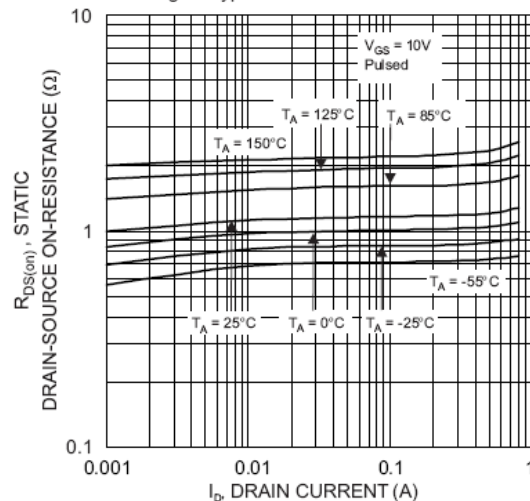


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

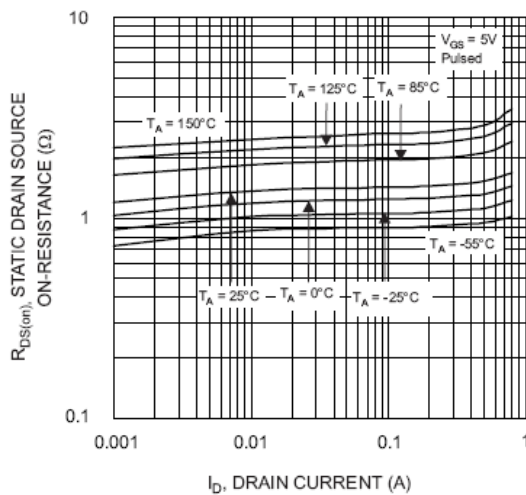


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

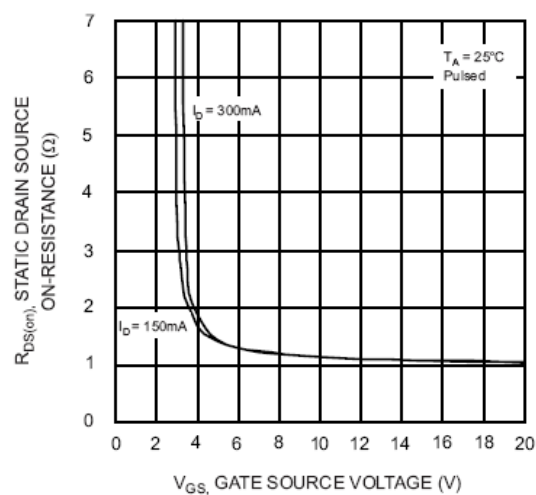


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

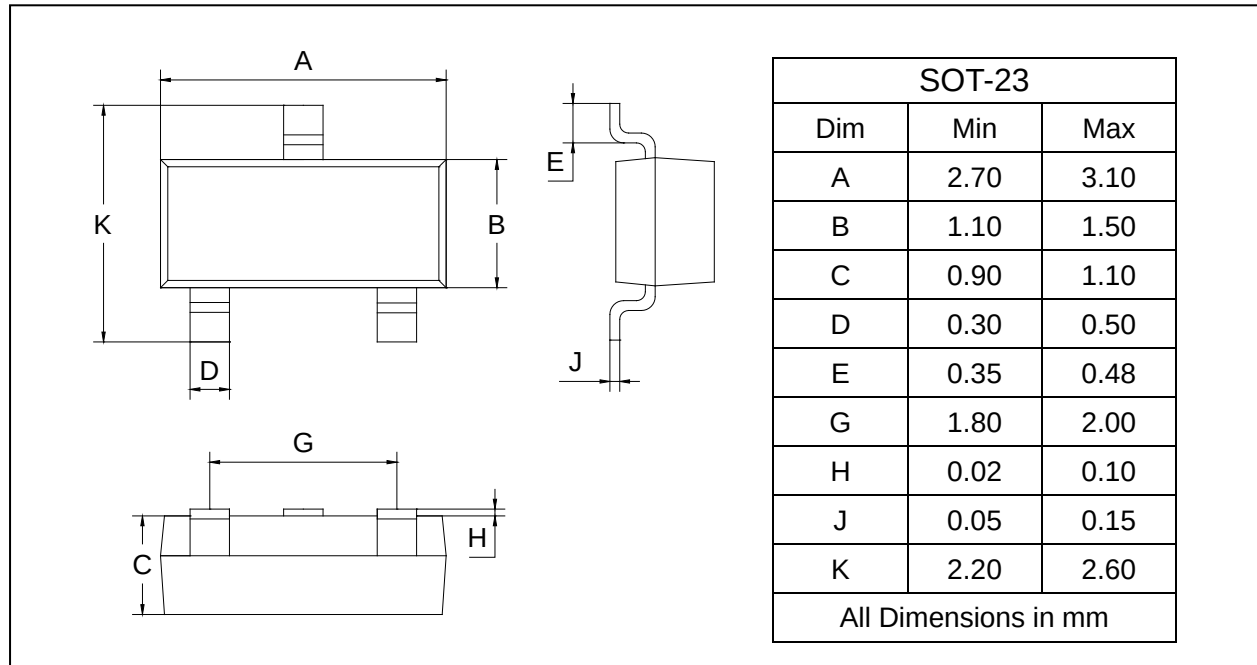
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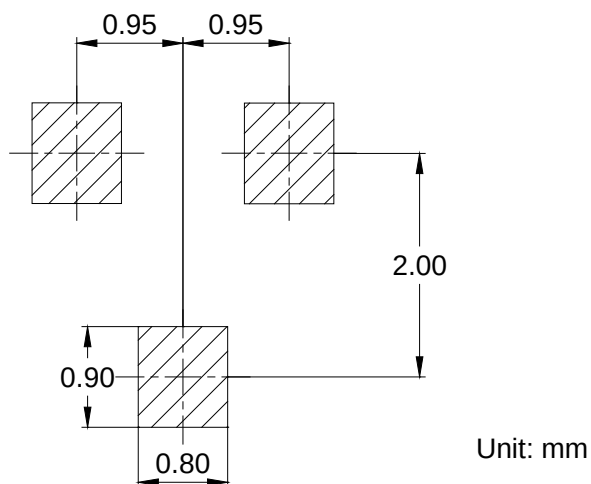
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
RK7002A	SOT-23	3000pcs / Tape & Reel