



SEMICONDUCTOR

DATA SHEET

SRK7002W

Small Signal MOSFET

Silicon N-Channel



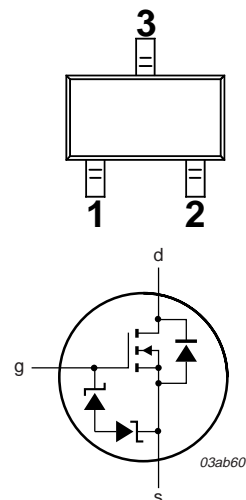
SOT-323

●Features

- 1) Low on-resistance.
- 2) Fast switching speed.
- 3) Low-voltage drive.
- 4) Easily designed drive circuits.
- 5) Easy to parallel.
- 6) Pb-Free package is available.
- 7) ESD Protected:2000V

●Device Marking and Ordering Information

Device	Marking	Shipping
SRK7002W	RK	3000 Tape & Reel
SRK7002W	RK	10000 Tape & Reel



●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V _{DSS}	60	V
Gate-source voltage		V _{GSS}	±20	V
Drain current	Continuous	I _D	115	mA
	Pulsed	I _{DP} *1	0.8	A
Drain reverse current	Continuous	I _{DR}	115	mA
	Pulsed	I _{DRP} *1	0.8	A
Total power dissipation		P _D *2	225	mW
Channel temperature		T _{ch}	150	°C
Storage temperature		T _{stg}	-55~+150	°C

*1 Pw≤10μs, Duty cycle≤1%

*2 When mounted on a 1×0.75×0.062 inch glass epoxy board.

ELECTRICAL CHARACTERISTICS

SRK7002W

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-source leakage current	I_{GSS}	—	—	± 10	μA	$V_{GS}=\pm 20V, V_{DS}=0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D=10\mu A, V_{GS}=0V$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS}=60V, V_{GS}=0V$
Gate threshold voltage	$V_{GS(th)}$	1	1.85	2.5	V	$V_{DS}=10V, I_D=1mA$
Drain-source on-state resistance	$R_{DS(on)}^*$	—	—	7.5	Ω	$I_D=0.5A, V_{GS}=10V$
		—	—	7.5		$I_D=0.05mA, V_{GS}=5V$
Forward transfer admittance	$ Y_{fs} ^*$	80	—	—	mS	$V_{DS}=10V, I_D=0.2A$
Input capacitance	C_{iss}	—	25	50	pF	$V_{DS}=25V$
Output capacitance	C_{oss}	—	10	25	pF	$V_{GS}=0V$
Reverse transfer capacitance	C_{rss}	—	3.0	5.0	pF	$f=1MHz$
Turn-on delay time	$t_d(on)^*$	—	12	20	ns	$I_D=200mA, V_{DD}=30V$
Turn-off delay time	$t_d(off)^*$	—	20	30	ns	$V_{GS}=10V, R_L=150\Omega, R_{GS}=10\Omega$

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

●Electrical characteristic curves

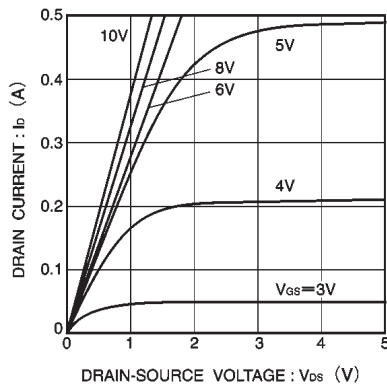


Fig.1 Typical output characteristics

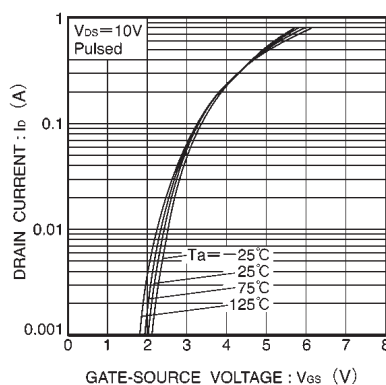


Fig.2 Typical transfer characteristics

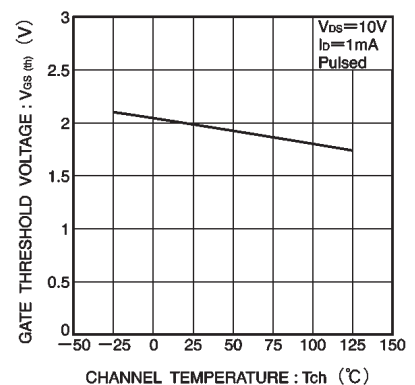


Fig.3 Gate threshold voltage vs. channel temperature

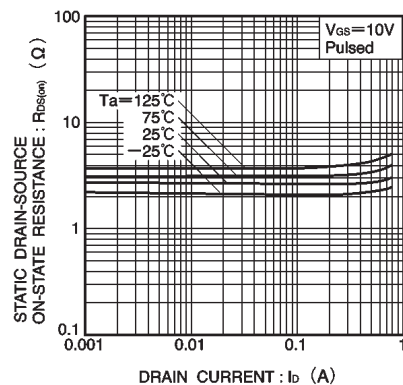


Fig.4 Static drain-source on-state resistance vs. drain current (I)

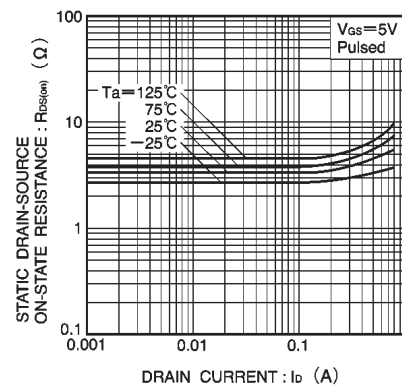


Fig.5 Static drain-source on-state resistance vs. drain current (II)

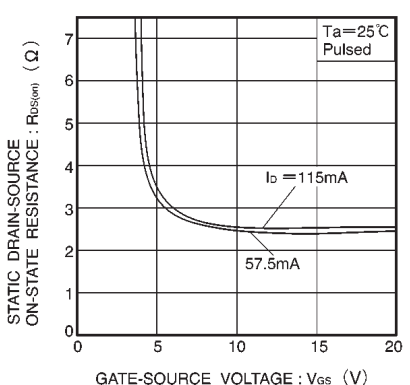


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

DEVICE CHARACTERISTICS

SRK7002W

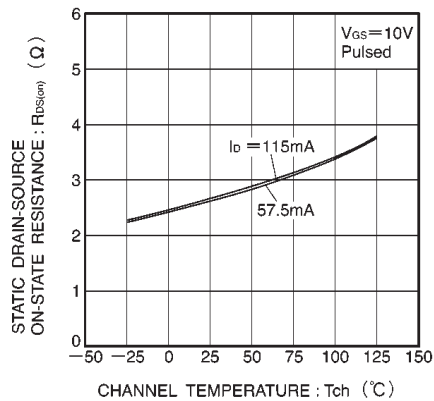


Fig.7 Static drain-source on-state resistance vs. channel temperature

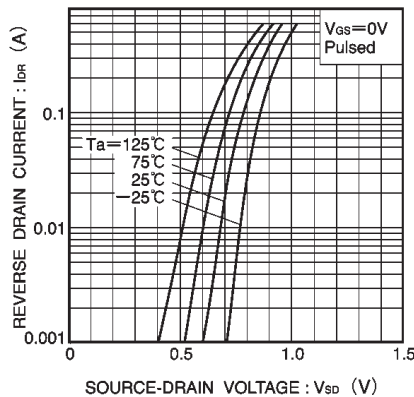


Fig.8 Reverse drain current vs. source-drain voltage (I)

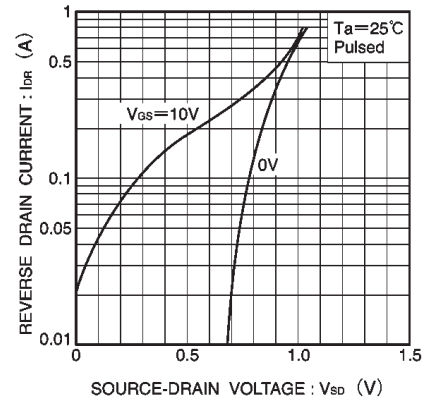


Fig.9 Reverse drain current vs. source-drain voltage (II)

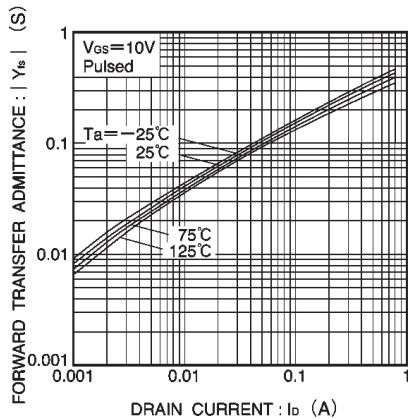


Fig.10 Forward transfer admittance vs. drain current

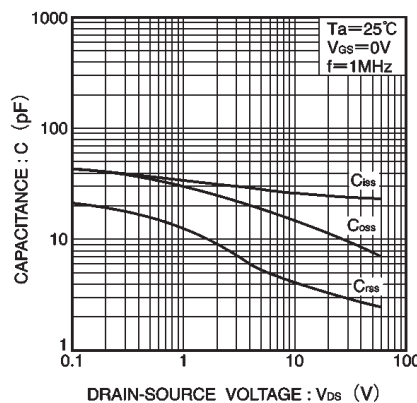


Fig.11 Typical capacitance vs. drain-source voltage

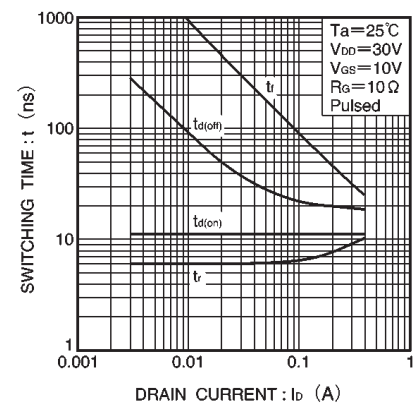


Fig.12 Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

●Switching characteristics measurement circuit

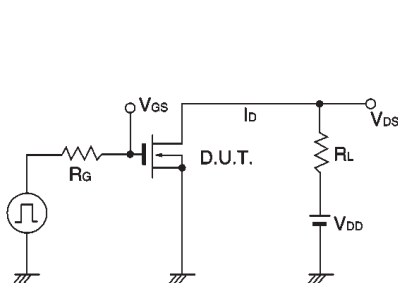


Fig.13 Switching time measurement circuit

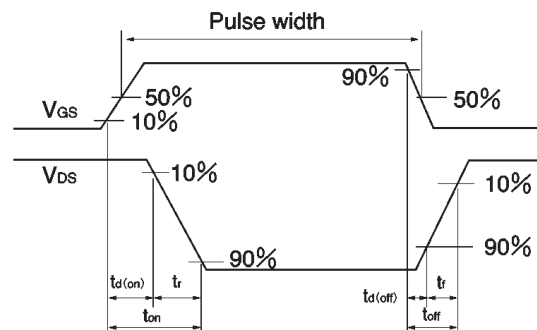
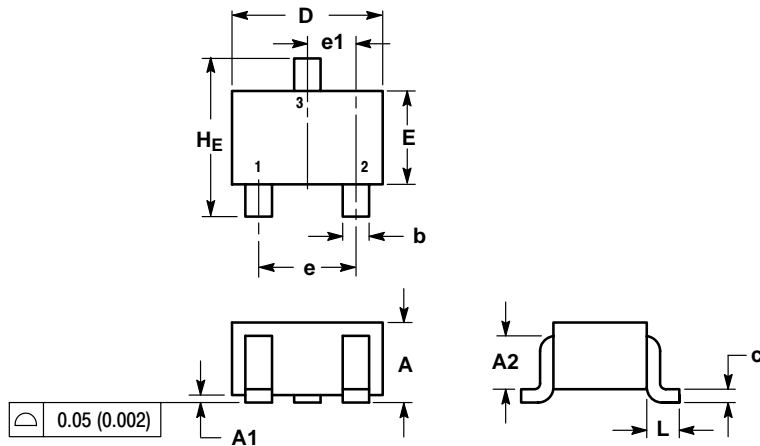


Fig.14 Switching time waveforms

PACKAGE OUTLINE & DIMENSIONS

SRK7002W

SC-70 (SOT-323)



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.7 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.425 REF			0.017 REF		
HE	2.00	2.10	2.40	0.079	0.083	0.095

SOLDERING FOOTPRINT*

