SEMICONDUCTOR

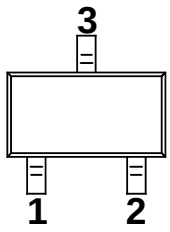
DATA SHEET

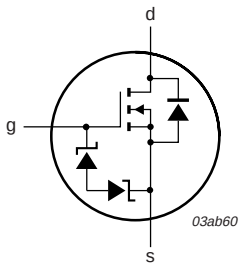
SRK7002W

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		Tch	150	°C
Storage temperature		Tstg	–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}=±20V, V_{DS}=0V
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	60	–	–	V	I_D=10μA, 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 V_{GS}=0V f=1MHz
Output capacitance	C_{oss}	–	10	25	pF	
Reverse transfer capacitance	C_{rss}	–	3.0	5.0	pF	
Turn-on delay time	$t_{d\ (on)}$*	–	12	20	ns	I_D=200mA, V_{DD}≒30V V_{GS}=10V, R_L=150Ω ,R_{GS}=10Ω
Turn-off delay time	$t_{d\ (off)}$*	–	20	30	ns	

* Pw≤300μs, Duty cycle≤1%

●Electrical characteristic curves

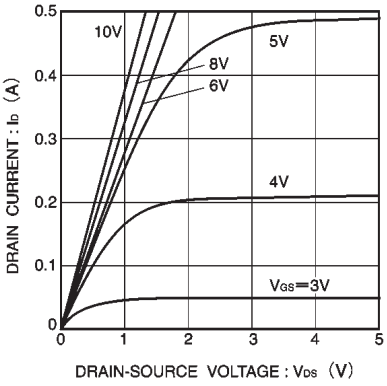


Fig.1 Typical output characteristics

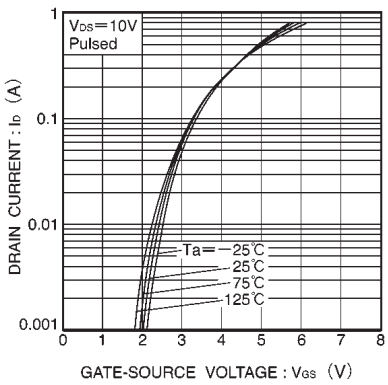


Fig.2 Typical transfer characteristics

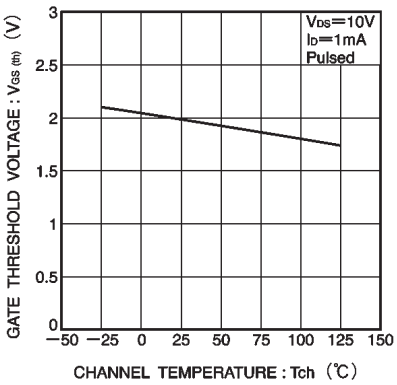


Fig.3 Gate threshold voltage vs. channel temperature

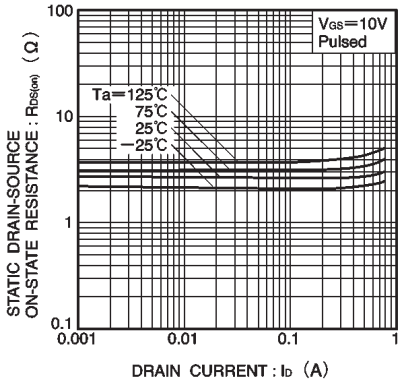


Fig.4 Static drain-source on-state resistance vs. drain current (Ⅰ)

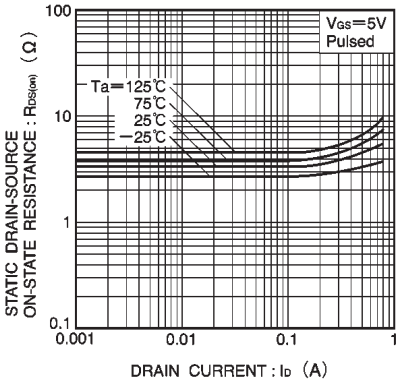


Fig.5 Static drain-source on-state resistance vs. drain current (Ⅱ)

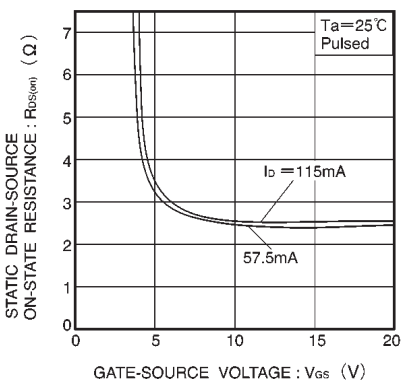


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

DEVICE CHARACTERISTICS

SRK7002W

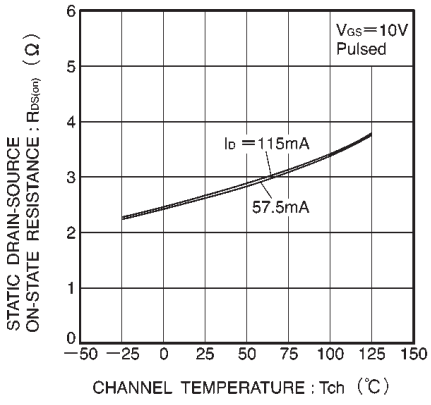


Fig.7 Static drain-source on-state resistance vs. channel temperature

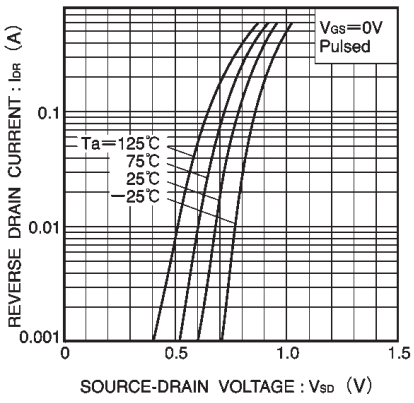


Fig.8 Reverse drain current vs. source-drain voltage (Ⅰ)

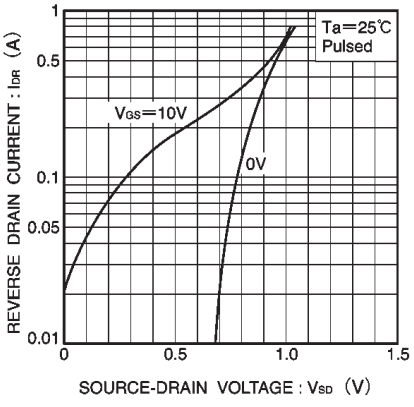


Fig.9 Reverse drain current vs. source-drain voltage (Ⅱ)

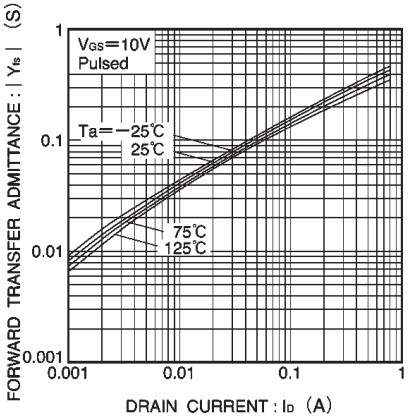


Fig.10 Forward transfer admittance vs. drain current

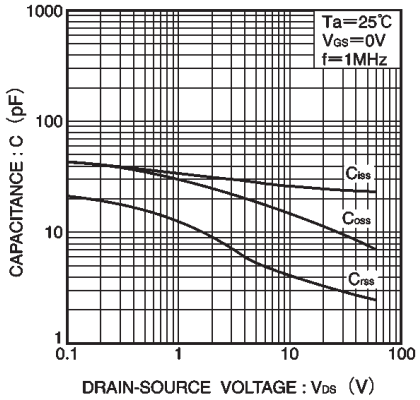


Fig.11 Typical capacitance vs. drain-source voltage

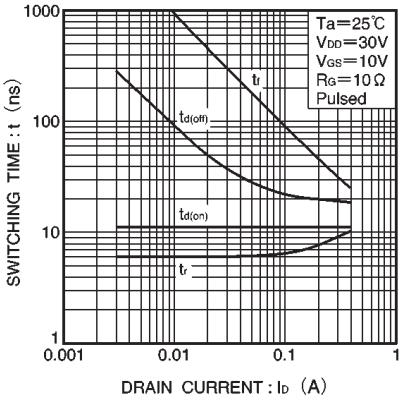


Fig.12 Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

●Switching characteristics measurement circuit

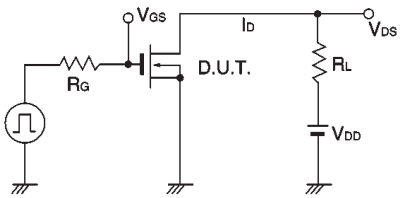


Fig.13 Switching time measurement circuit

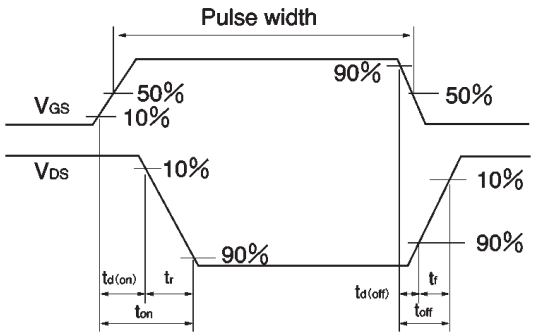
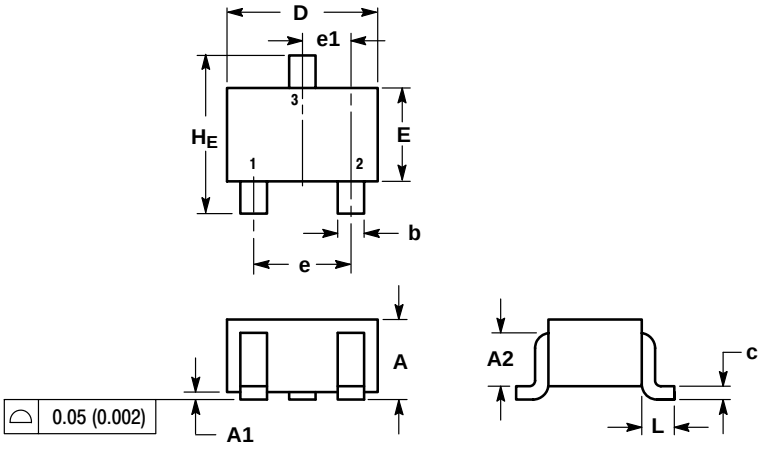


Fig.14 Switching time waveforms

PACKAGE OUTLINE & DIMENSIONS

SRK7002W

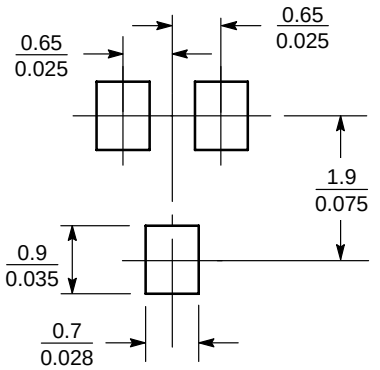
SC−70 (SOT−323)



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

	MILLIMETERS			INCHES		
DIM	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	
H_E	2.00	2.10	2.40	0.079	0.083	0.095

SOLDERING FOOTPRINT*



SCALE 10:1 $\left(\frac{mm}{inches}\right)$