

Small Signal MOSFET Silicon N-Channel

●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

● Pb-Free package is available

RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"



●Device Marking and Ordering Information

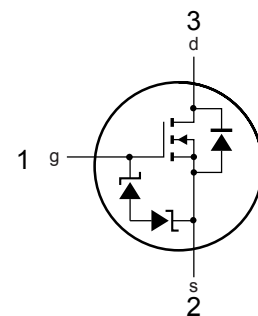
Device	Marking	Shipping
SRK7002LT1	RK	3000 Tape & Reel

●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 P_w≤10μs, Duty cycle≤1%

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





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●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	$V_{DS}=V_{GS}, I_D=250\mu A$
Drain-source on-state resistance	$R_{DS(on)*}$	-	-	7.5	Ω	$I_D=0.5A, V_{GS}=10V$
		-	-	7.5		$I_D=0.05A, V_{GS}=5V$
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

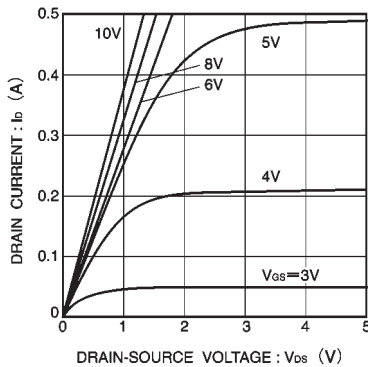


Fig.1 Typical output characteristics

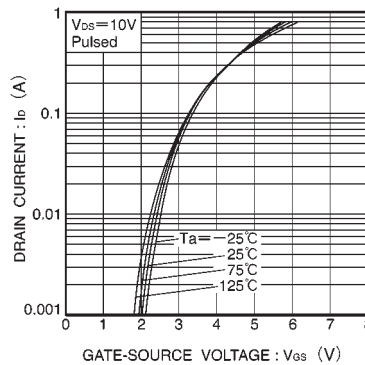


Fig.2 Typical transfer characteristics

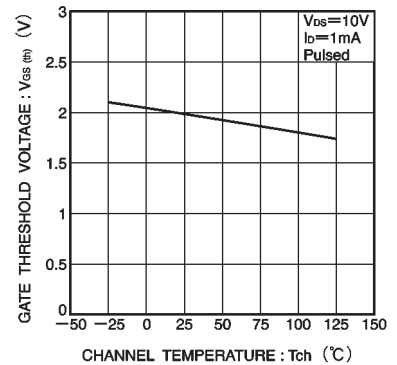


Fig.3 Gate threshold voltage vs. channel temperature

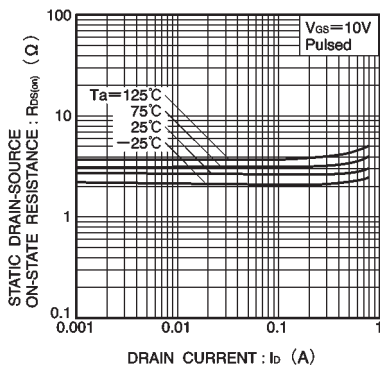


Fig.4 Static drain-source on-state resistance vs. drain current (I)

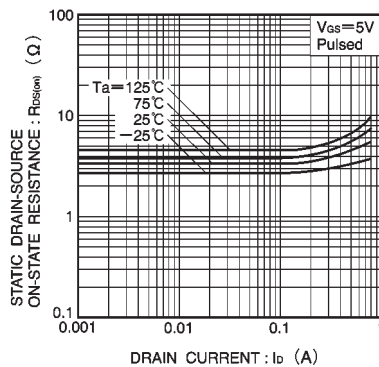


Fig.5 Static drain-source on-state resistance vs. drain current (II)

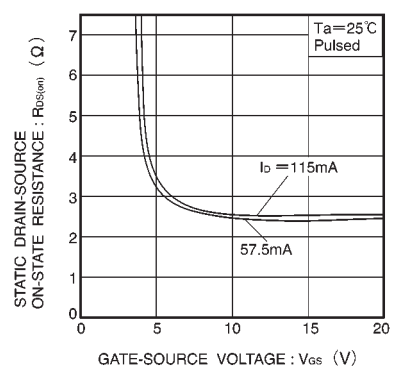


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

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● **Electrical characteristic curves (continues)**

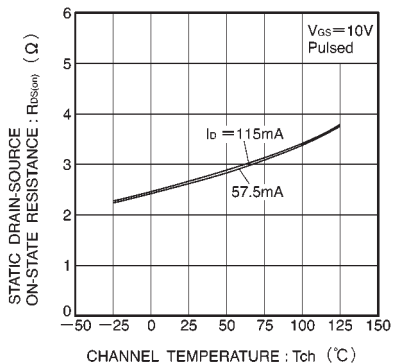


Fig.7 Static drain-source on-state resistance vs. channel temperature

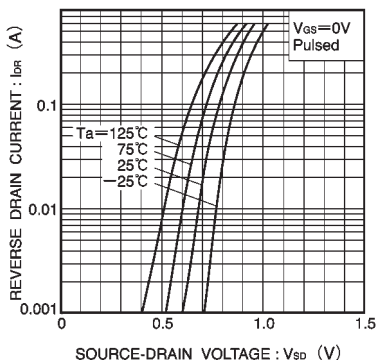


Fig.8 Reverse drain current vs. source-drain voltage (I)

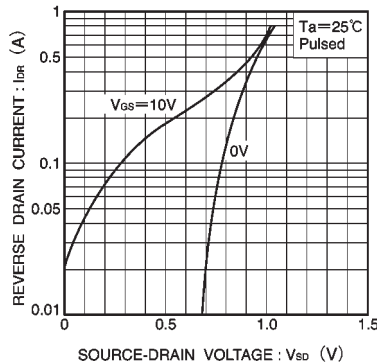


Fig.9 Reverse drain current vs. source-drain voltage (II)

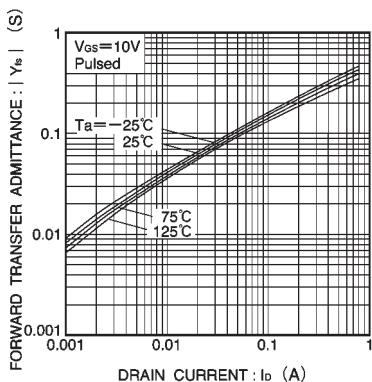


Fig.10 Forward transfer admittance vs. drain current

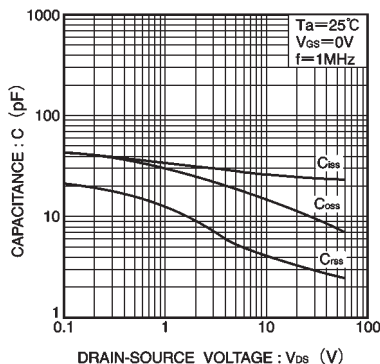


Fig.11 Typical capacitance vs. drain-source voltage

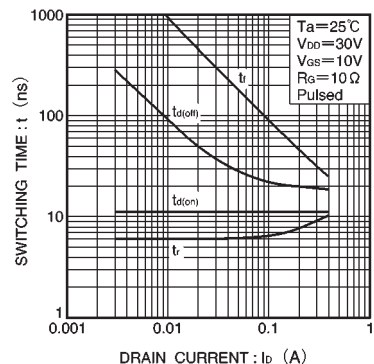


Fig.12 Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

● **Switching characteristics measurement circuit**

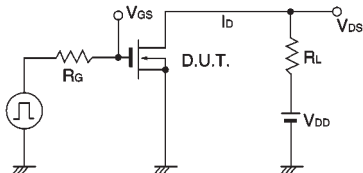


Fig.13 Switching time measurement circuit

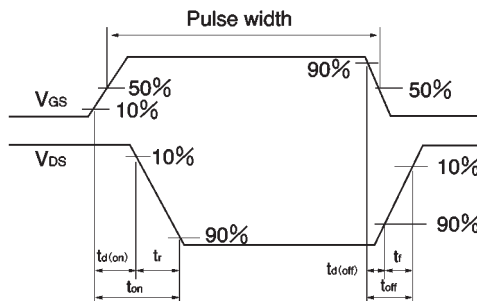
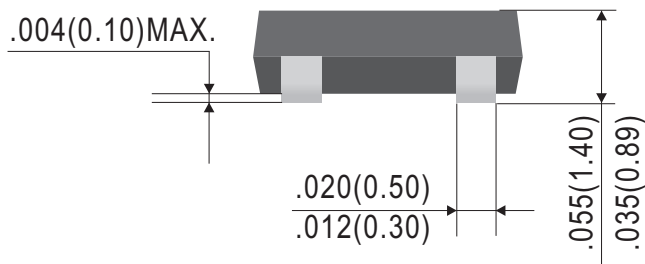
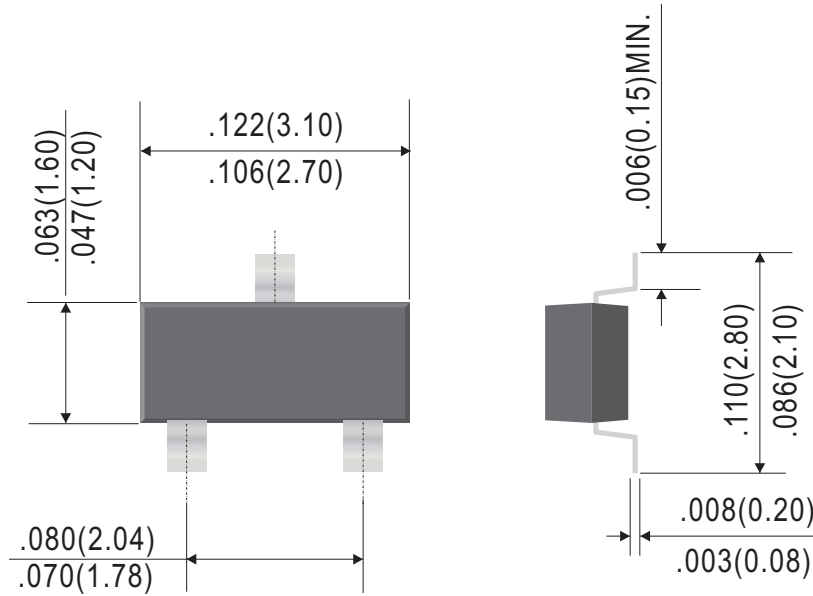


Fig.14 Switching time waveforms

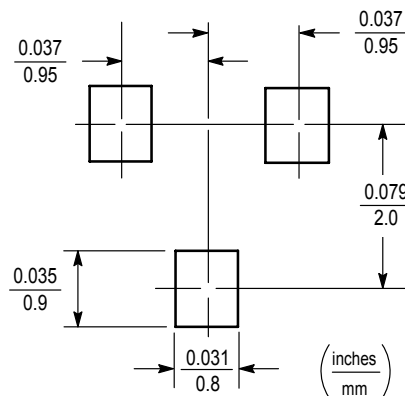


Small Signal MOSFET Silicon N-Channel

SOT-23



Dimensions in inches and (millimeters)



Small Signal MOSFET Silicon N-Channel**Ordering Information:**

Device PN	Packing
SRK7002LT1G ⁽¹⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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