

**RHK003N06**

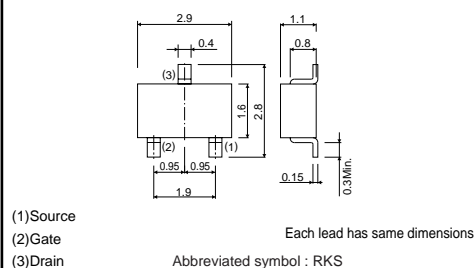
## Silicon N-channel MOS FET

- 1) Low On-resistance.
- 2) 4V drive.

## Switching

Type	Package	Taping
	Code	T146
	Basic ordering unit (pieces)	3000
RHK003N06		○

### SMT3



#1 ESD PROTECTION DIODE (1)  
#2 BODY DIODE

Parameter		Symbol	Limits	Unit
Drain-source voltage		V <sub>DSS</sub>	60	V
Gate-source voltage		V <sub>GSS</sub>	±20	V
Drain current	Continuous	I <sub>D</sub>	±300	mA
	Pulsed	I <sub>DP</sub> <sup>*1</sup>	±1.2	A
Source current (Body diode)	Continuous	I <sub>S</sub>	200	mA
	Pulsed	I <sub>SP</sub> <sup>*1</sup>	800	mA
Total power dissipation		P <sub>D</sub> <sup>*2</sup>	200	mW
Channel temperature		T <sub>ch</sub>	150	°C
Range of storage temperature		T <sub>stg</sub>	−55 to +150	°C

\*1  $P_w \leq 10 \mu s$ , Duty cycle  $\leq 1\%$

\*2 Each terminal mounted on a recommended land

Parameter	Symbol	Limits	Unit
Channel to ambient	Rth(ch-a) *	625	°C/W

\* Each terminal mounted on a recommended land

## Transistors

## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	$I_{GSS}$	—	—	$\pm 10$	$\mu A$	$V_{GS} = \pm 20V$ , $V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR) DSS}$	60	—	—	V	$I_D = 1mA$ , $V_{GS} = 0V$
Zero gate voltage drain current	$I_{DSS}$	—	—	1	$\mu A$	$V_{DS} = 60V$ , $V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	1.0	—	2.5	V	$V_{DS} = 10V$ , $I_D = 1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	—	0.7	1.0	$\Omega$	$I_D = 300mA$ , $V_{GS} = 10V$
		—	1.1	1.5	$\Omega$	$I_D = 300mA$ , $V_{GS} = 4V$
Forward transfer admittance	$ Y_{fs} $ *	0.2	—	—	S	$V_{DS} = 10V$ , $I_D = 300mA$
Input capacitance	$C_{iss}$	—	33	—	pF	$V_{DS} = 10V$
Output capacitance	$C_{oss}$	—	14	—	pF	$V_{GS} = 0V$
Reverse transfer capacitance	$C_{rss}$	—	9	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	—	6	—	ns	$V_{DD} \doteq 30V$
Rise time	$t_r$ *	—	5	—	ns	$I_D = 150mA$
Turn-off delay time	$t_{d(off)}$ *	—	13	—	ns	$V_{GS} = 10V$
Fall time	$t_f$ *	—	80	—	ns	$R_L = 200\Omega$
Total gate charge	$Q_g$ *	—	3	6	nC	$V_{DD} \doteq 30V$
Gate-source charge	$Q_{gs}$ *	—	0.6	—	nC	$V_{GS} = 10V$
Gate-drain charge	$Q_{gd}$ *	—	0.5	—	nC	$I_D = 300mA$

\*Pulsed

## ●Body diode characteristics (Source-drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	$V_{SD}$ *	—	—	1.2	V	$I_S = 300mA$ , $V_{GS} = 0V$

\*Pulsed

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