

4V Drive Nch MOS FET

RHK003N06

●Structure

Silicon N-channel MOS FET

●Features

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

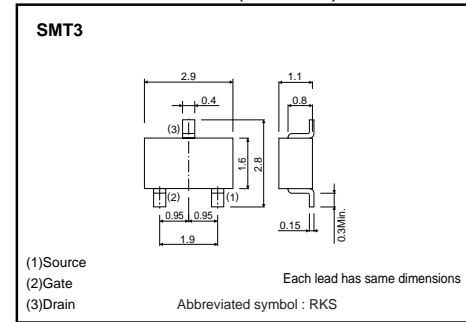
●Applications

Switching

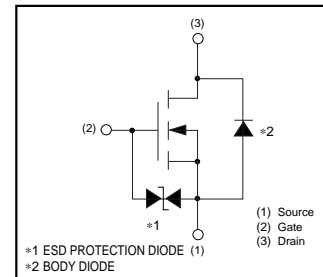
●Packaging specifications and hFE

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

●External dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	± 20	V
Drain current	Continuous	I_D	± 300 mA
	Pulsed	I_{DP} *1	± 1.2 A
Source current (Body diode)	Continuous	I_S	200 mA
	Pulsed	I_{SP} *1	800 mA
Total power dissipation	P_D *2	200	mW
Channel temperature	T_{ch}	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

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

*2 Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	$R_{th(ch-a)}$ *	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}	–	–	±10	μA	V _{GS} =±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	μA	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	Ω	I _D = 300mA, V _{GS} = 10V
		–	1.1	1.5	Ω	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} ≐ 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 =200Ω
Total gate charge	Q _g *	–	3	6	nC	V _{DD} ≐ 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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