

Transistors

4V Drive Nch MOS FET

RHK005N03

●Structure

Silicon N-channel MOS FET

●Features

- 1) Low On-resistance.
- 2) High speed switching.

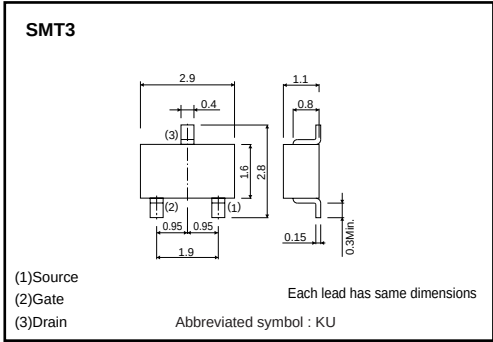
●Applications

Switching

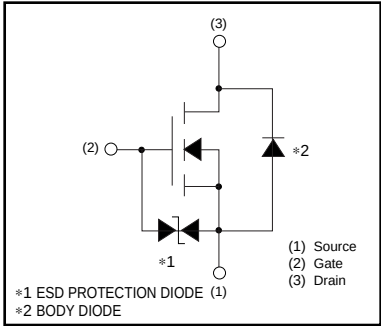
●Packaging specifications and h_{FE}

Type	Package	Taping
	Code	T146
	Basic ordering unit (pieces)	3000
RHK005N03		○

●External dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings ($T_a=25^{\circ}\text{C}$)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DS}	30	V
Gate-source voltage		V_{GS}	± 20	V
Drain current	Continuous	I_D	± 500	mA
	Pulsed	I_{DP} *1	± 2.0	A
Total power dissipation		P_D *2	200	mW
Channel temperature		T_{ch}	150	$^{\circ}\text{C}$
Range of storage temperature		T_{stg}	-55 to +150	$^{\circ}\text{C}$

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

*2 Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	$R_{th(ch-a)}$ *	625	$^{\circ}\text{C/W}$

* Each terminal mounted on a recommended land

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 20V, V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 1mA, V_{GS} = 0V$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 30V, V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	1.0	—	2.5	V	$V_{DS} = 10V, I_D = 1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	—	350	550	mΩ	$I_D = 500mA, V_{GS} = 10V$
		—	510	720	mΩ	$I_D = 500mA, V_{GS} = 4.5V$
		—	600	840	mΩ	$I_D = 500mA, V_{GS} = 4V$
Forward transfer admittance	$ Y_{fs} $ *	0.5	—	—	S	$V_{DS} = 10V, I_D = 500mA$
Input capacitance	C_{iss}	—	45	—	pF	$V_{DS} = 10V$
Output capacitance	C_{oss}	—	20	—	pF	$V_{GS} = 0V$
Reverse transfer capacitance	C_{rss}	—	10	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	—	10	—	ns	$V_{DD} = 15V$
Rise time	t_r *	—	10	—	ns	$I_D = 250mA$
Turn-off delay time	$t_{d(off)}$ *	—	15	—	ns	$V_{GS} = 10V$
Fall time	t_f *	—	30	—	ns	$R_L = 60\Omega$ $R_G = 10\Omega$

*Pulsed

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD}	—	—	1.2	V	$I_S = 0.16A, V_{GS} = 0V$

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