

Transistors

4V Drive Nch MOS FET

RHK005N03

●Structure

Silicon N-channel MOS FET

●Features

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

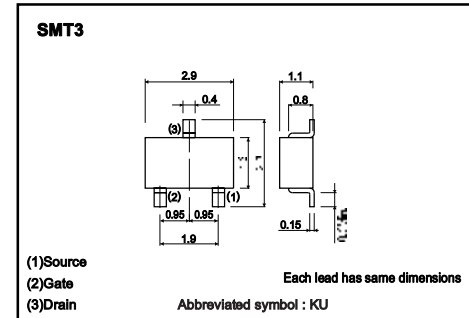
●Applications

Switching

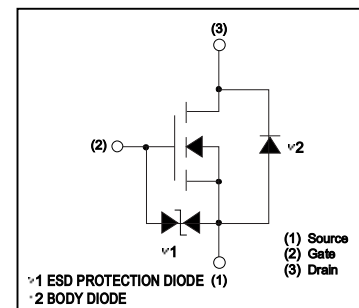
●Packaging specifications and h_{FE}

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

●External dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°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	°C
Range of storage temperature		T _{stg}	-55 to +150	°C

¹ Pw≤10μs, Duty cycle≤1%

² Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	R _{th(ch-a)} ¹	625	°C/W

¹ 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	$V_{GS} = \pm 20V$, $V_{DS} = 0V$
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	$R_L = 60\Omega$ $R_G = 10\Omega$

①Pulsed

●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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