

Transistors

4V Drive Nch MOS FET

RHK005N03

●Structure

Silicon N-channel MOS FET

●Features

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

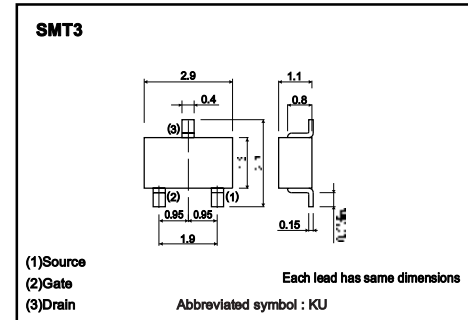
●Applications

Switching

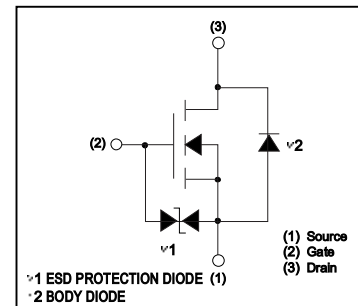
●Packaging specifications and hFE

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 _{DSS}	30	V	
Gate-source voltage	V _{GSS}	±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)} [∗]	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	$V_{GS} = \pm 20V, V_{DS} = 0V$
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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