4V Drive Nch MOS FET

RHK005N03

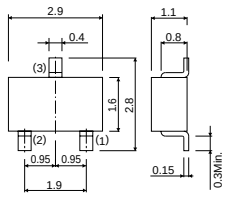
●Structure
Silicon N-channel MOS FET

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

●Applications
Switching

●External dimensions (Unit : mm)

SMT3



(1)Source
(2)Gate
(3)Drain

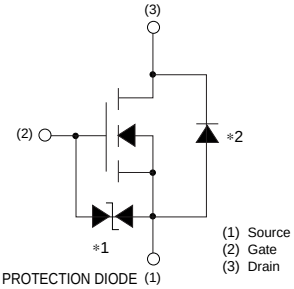
Each lead has same dimensions

Abbreviated symbol : KU

●Packaging specifications and h_{FE}

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

●Inner circuit



∗1 ESD PROTECTION DIODE
∗2 BODY DIODE

●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		Tch	150	°C
Range of storage temperature		Tstg	−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	Rth(ch-a) ∗	625	°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}= ±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 R_L=60Ω
Fall time	t_f *	–	30	–	ns	R_G=10Ω

*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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