

4V Drive Nch MOS FET

RHP030N03

●Structure

Silicon N-channel MOS FET

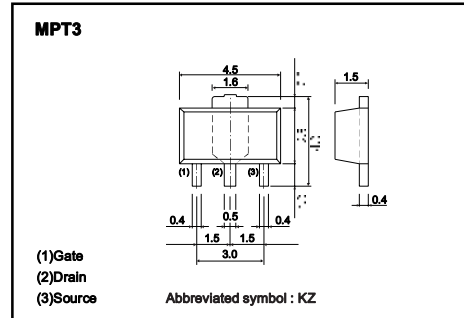
●Features

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

●Applications

Switching

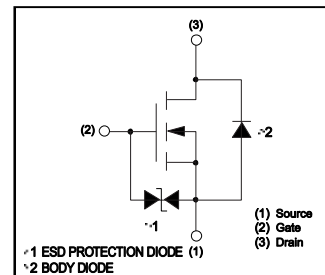
■External dimensions (Unit : mm)



●Packaging specifications

Type	Package	Taping
	Code	T100
	Basic ordering unit (pieces)	1000
RHP030N03		○

●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	3	A
	Pulsed	I _{DP} *1	10	A
Reverse drain current	Continuous	I _{DR}	3	A
	Pulsed	I _{DRP} *1	10	A
Total power dissipation		P _D	500	mW
			2 *2	W
Channel temperature		T _{ch}	150	°C
Range of storage temperature		T _{stg}	-55 to +150	°C

*1 Pw≤10μs, Duty cycle≤1%

*2 When mounted on a 40×40×0.7mm ceramic board

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	R _{th(ch-a)}	250	°C/W
		62.5 *	°C/W

* When mounted on a 40×40×0.7mm ceramic board

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	$V_{(BR)DSS}$	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	$R_{DS(on)}$	—	90	120	mΩ	$I_D=3A$, $V_{GS}=10V$
		—	160	210	mΩ	$I_D=3A$, $V_{GS}=4V$
Forward transfer admittance	$ Y_{fs} $	2.0	—	—	S	$V_{DS}=10V$, $I_D=3A$
Input capacitance	C_{iss}	—	160	—	pF	$V_{DS}=10V$
Output capacitance	C_{oss}	—	90	—	pF	$V_{GS}=0V$
Reverse transfer capacitance	C_{rss}	—	27	—	pF	$f=1MHz$
Turn-on delay time	$t_{d(on)}$	—	7	—	ns	$V_{DD}=15V$
Rise time	t_r	—	11	—	ns	$I_D=1.5A$
Turn-off delay time	$t_{d(off)}$	—	15	—	ns	$V_{GS}=10V$
Fall time	t_f	—	4.5	—	ns	$R_L=10Ω$
Total gate charge	Q_g	—	6.5	—	nC	$V_{DD}=15V$
Gate-source charge	Q_{gs}	—	1.0	—	nC	$V_{GS}=10V$
Gate-drain charge	Q_{gd}	—	1.5	—	nC	$I_D=3A$

* Pulsed

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