

# 2.5V Drive Nch MOS FET

## RJP020N06

### ●Structure

Silicon N-channel MOS FET

### ●Features

- 1) Low On-resistance.
- 2) Low voltage drive (2.5V drive).

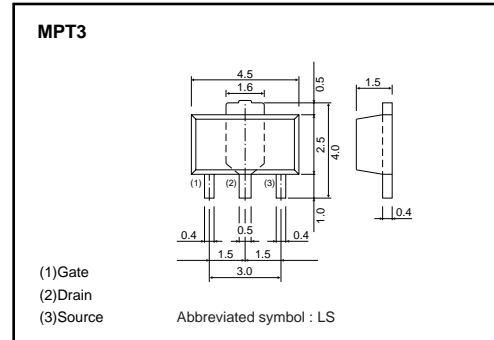
### ●Applications

Switching

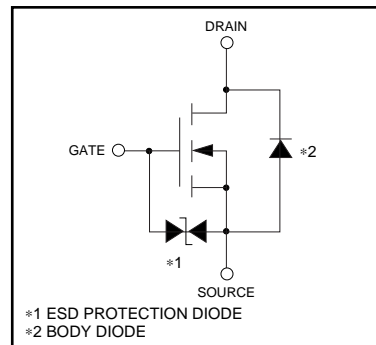
### ●Packaging specifications

Type	Package	Taping
	RJP020N06	Code Basic ordering unit (pieces)
		○

### ●External dimensions (Unit : mm)



### ●Inner circuit



### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-source voltage	$V_{DSS}$	60	V
Gate-source voltage	$V_{GSS}$	$\pm 12$	V
Drain current	Continuous	$I_D$	$\pm 2.0$ A
	Pulsed	$I_{DP}$ *1	$\pm 8.0$ A
Source current (Body diode)	Continuous	$I_S$	2.0 A
	Pulsed	$I_{SP}$ *1	8.0 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  $P_w \leq 10\mu s$ , Duty cycle  $\leq 1\%$

\*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	$V_{GS} = \pm 12V, V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	60	–	–	V	$I_D = 1mA, V_{GS} = 0V$
Zero gate voltage drain current	$I_{DSS}$	–	–	1	μA	$V_{DS} = 60V, V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	0.8	–	1.5	V	$V_{DS} = 10V, I_D = 1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	–	165	240	mΩ	$I_D = 2A, V_{GS} = 4.5V$
		–	170	250	mΩ	$I_D = 2A, V_{GS} = 4V$
		–	210	300	mΩ	$I_D = 2A, V_{GS} = 2.5V$
Forward transfer admittance	$ Y_{fs} $ *	1.5	–	–	S	$V_{DS} = 10V, I_D = 2A$
Input capacitance	$C_{iss}$	–	160	–	pF	$V_{DS} = 10V$
Output capacitance	$C_{oss}$	–	50	–	pF	$V_{GS} = 0V$
Reverse transfer capacitance	$C_{rss}$	–	45	–	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	–	8	–	ns	$V_{DD} = 30V$
Rise time	$t_r$ *	–	18	–	ns	$I_D = 1A$
Turn-off delay time	$t_{d(off)}$ *	–	40	–	ns	$V_{GS} = 4V$
Fall time	$t_f$ *	–	20	–	ns	$R_L = 30\Omega$ $R_G = 10\Omega$
Total gate charge	$Q_g$ *	–	5	10	nC	$V_{DD} = 30V$
Gate-source charge	$Q_{gs}$ *	–	1	–	nC	$V_{GS} = 4V$
Gate-drain charge	$Q_{gd}$ *	–	2.5	–	nC	$I_D = 2A$

\*Pulsed

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	$V_{SD}$	–	–	1.2	V	$I_S = 2A, V_{GS} = 0V$

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