

# 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).

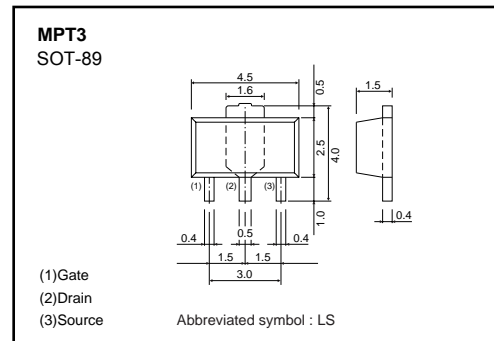
### ●Applications

Switching

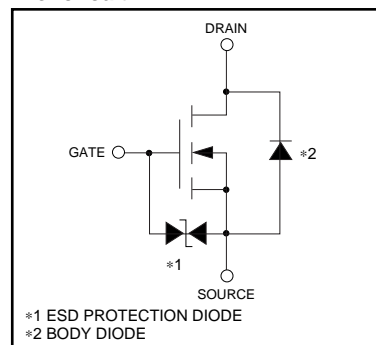
### ●Packaging specifications

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 <sub>GSS</sub>	–	–	±10	μA	V <sub>GS</sub> = ±12V, V <sub>DS</sub> =0V
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	60	–	–	V	I <sub>D</sub> = 1mA, V <sub>GS</sub> =0V
Zero gate voltage drain current	I <sub>DSS</sub>	–	–	1	μA	V <sub>DS</sub> = 60V, V <sub>GS</sub> =0V
Gate threshold voltage	V <sub>GS(th)</sub>	0.8	–	1.5	V	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1mA
Static drain-source on-state resistance	R <sub>DS(on)</sub> *	–	165	240	mΩ	I <sub>D</sub> = 2A, V <sub>GS</sub> = 4.5V
		–	170	250	mΩ	I <sub>D</sub> = 2A, V <sub>GS</sub> = 4V
		–	210	300	mΩ	I <sub>D</sub> = 2A, V <sub>GS</sub> = 2.5V
Forward transfer admittance	Y <sub>fs</sub>  *	1.5	–	–	S	V <sub>DS</sub> = 10V, I <sub>D</sub> = 2A
Input capacitance	C <sub>iss</sub>	–	160	–	pF	V <sub>DS</sub> = 10V
Output capacitance	C <sub>oss</sub>	–	50	–	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	C <sub>rss</sub>	–	45	–	pF	f=1MHz
Turn-on delay time	t <sub>d(on)</sub> *	–	8	–	ns	V <sub>DD</sub> ≐ 30V
Rise time	t <sub>r</sub> *	–	18	–	ns	I <sub>D</sub> = 1A
Turn-off delay time	t <sub>d(off)</sub> *	–	40	–	ns	V <sub>GS</sub> = 4V
Fall time	t <sub>f</sub> *	–	20	–	ns	R <sub>L</sub> =30Ω R <sub>G</sub> =10Ω
Total gate charge	Q <sub>g</sub> *	–	5	10	nC	V <sub>DD</sub> ≐ 30V
Gate-source charge	Q <sub>gs</sub> *	–	1	–	nC	V <sub>GS</sub> = 4V
Gate-drain charge	Q <sub>gd</sub> *	–	2.5	–	nC	I <sub>D</sub> = 2A

\*Pulsed

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V <sub>SD</sub>	–	–	1.2	V	I <sub>S</sub> = 2A, V <sub>GS</sub> =0V

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