# 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).

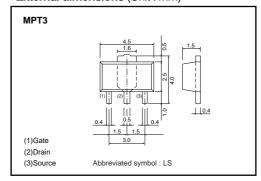
#### Applications

Switching

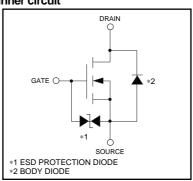
# Packaging specifications

	Package	Taping
Туре	Code	T100
	Basic ordering unit (pieces)	1000
RJP020N06		0

# ●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 <sub>GSS</sub>	±12	V
Drain current	Continuous	ID	±2.0	Α
Drain current	Pulsed	I <sub>DP</sub> *1	±8.0	Α
Source current	Continuous	Is	2.0	Α
(Body diode)	Pulsed	Isp *1	8.0	Α
Total names discination	Pn	500	mW	
Total power dissipation		PD	2 *2	W
Channel temperature		Tch	150	°C
Range of storage temperature		Tstg	-55 to +150	°C

#### Thermal resistance

Parameter	Symbol	Limits	Unit	
Channel to ambient	Pth(oh o)	250	°C/W	
Charmer to ambient	Rth(ch-a)	62.5 *	°C/W	

<sup>\*</sup> When mounted on a 40×40×0.7mm ceramic board

<sup>\*1</sup> Pw≤10μs, Duty cycle≤1% \*2 When mounted on a 40×40×0.7mm ceramic board

# ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Gate-source leakage	Igss	1	-	±10	μΑ	Vgs= ±12V, Vps=0V
Drain-source breakdown voltage	$V_{(BR)\;DSS}$	60	_	_	V	I <sub>D</sub> = 1mA, V <sub>GS</sub> =0V
Zero gate voltage drain current	I <sub>DSS</sub>	-	_	1	μΑ	V <sub>DS</sub> = 60V, V <sub>GS</sub> =0V
Gate threshold voltage	V <sub>GS (th)</sub>	8.0	_	1.5	V	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1mA
Static drain-source on-state resistance		_	165	240	mΩ	I <sub>D</sub> = 2A, V <sub>GS</sub> = 4.5V
	R <sub>DS</sub> (on)*	_	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	Ciss	_	160	_	pF	V <sub>DS</sub> = 10V
Output capacitance	Coss	_	50	_	pF	Vgs=0V
Reverse transfer capacitance	Crss	_	45	_	pF	f=1MHz
Turn-on delay time	t <sub>d (on)</sub> *	_	8	_	ns	Vpp≒ 30V
Rise time	tr *	-	18	_	ns	ID= 1A
Turn-off delay time	td (off) *	_	40	_	ns	V <sub>GS</sub> = 4V R <sub>L</sub> =30Ω
Fall time	t <sub>f</sub> *	-	20	_	ns	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.	Тур.	Max.	Unit	Conditions
Forward voltage	Vsp	-	_	1.2	V	I <sub>S</sub> = 2A, V <sub>GS</sub> =0V

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