2.5V Drive Nch MOS FET

RJP020N06

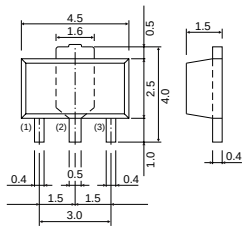
●Structure
Silicon N-channel MOS FET

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

●Applications
Switching

●External dimensions (Unit : mm)

MPT3



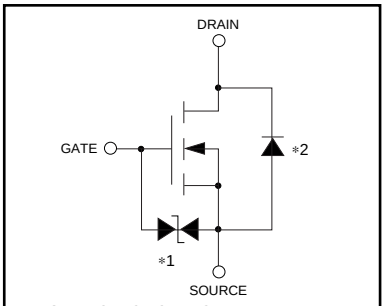
(1)Gate
(2)Drain
(3)Source

Abbreviated symbol : LS

●Packaging specifications

Type	Package	Taping
	Code	T100
	Basic ordering unit (pieces)	1000
RJP020N06		○

●Inner circuit



∗1 ESD PROTECTION DIODE
∗2 BODY DIODE

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	60	V
Gate-source voltage		V_{GSS}	±12	V
Drain current	Continuous	I_D	±2.0	A
	Pulsed	I_{DP} ∗1	±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		Tch	150	°C
Range of storage temperature		Tstg	–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	Rth(ch-a)	250	°C/W
		62.5 ∗	°C/W

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

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±10	μA	V_{GS}= ±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 R_L=30Ω
Fall time	t_f *	–	20	–	ns	R_G=10Ω
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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