# 2.5V Drive Nch MOSFET

## RJU002N06

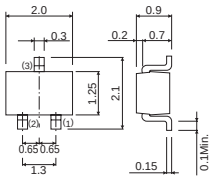
### ●Structure
Silicon N-channel MOS FET

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

### ●Applications
Switching

### ●Dimensions (Unit : mm)

**UMT3**




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

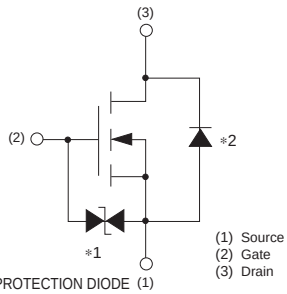
Each lead has same dimensions

Abbreviated symbol : ML

### ●Packaging specifications

| | | |
|---|---|---|
| Type | Package | Taping |
| | Code | T106 |
| | Basic ordering unit (pieces) | 3000 |
| RJU002N06 | | ◯ |

### ●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 | $I_D$ | ±200 | mA |
| | Pulsed | $I_{DP}$ *1 | ±800 | mA |
| Total power dissipation | | $P_D$ *2 | 200 | mW |
| Channel temperature | | Tch | 150 | °C |
| Range of storage temperature | | Tstg | −55 to +150 | °C |

*1 Pw≤10μs, Duty cycle≤1%
*2 Each terminal mounted on a recommended land

### ●Thermal resistance

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Channel to ambient | Rth(ch-a)* | 625 | °C/W |

* Each terminal mounted on a recommended land

●**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 | $V_{GS\ (th)}$ | 0.5 | – | 1.5 | V | $V_{DS}$= 10V, $I_D$= 1mA |
| Static drain-source on-state resistance | $R_{DS\ (on)}$* | – | 1.6 | 2.3 | Ω | $I_D$= 200mA, $V_{GS}$= 4.5V |
| | | – | 1.7 | 2.4 | Ω | $I_D$= 200mA, $V_{GS}$= 4V |
| | | – | 2.2 | 3.1 | Ω | $I_D$= 200mA, $V_{GS}$= 2.5V |
| Forward transfer admittance | $\|Y_{fs}\|$ * | 0.1 | – | – | S | $V_{DS}$= 10V, $I_D$= 200mA |
| Input capacitance | $C_{iss}$ | – | 18 | – | pF | $V_{DS}$= 10V |
| Output capacitance | $C_{oss}$ | – | 7 | – | pF | $V_{GS}$=0V |
| Reverse transfer capacitance | $C_{rss}$ | – | 5 | – | pF | f=1MHz |
| Turn-on delay time | $t_{d\ (on)}$ * | – | 7 | – | ns | $V_{DD}$≒ 30V<br>$I_D$= 100mA<br>$V_{GS}$= 4V<br>$R_L$=300Ω<br>$R_G$=10Ω |
| Rise time | $t_r$ * | – | 7 | – | ns | |
| Turn-off delay time | $t_{d\ (off)}$ * | – | 12 | – | ns | |
| Fall time | $t_f$ * | – | 90 | – | ns | |

*Pulsed

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

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Forward voltage | $V_{SD}$ | – | – | 1.2 | V | $I_S$= 0.16A, $V_{GS}$=0V |

## ●Electrical characteristics curves

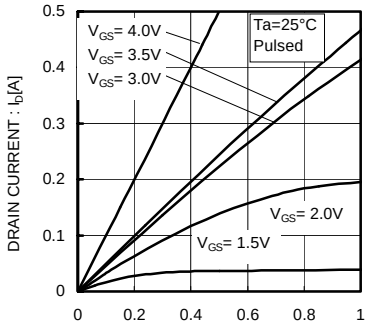



Fig.1 Typical Output Characteristics(Ⅰ)

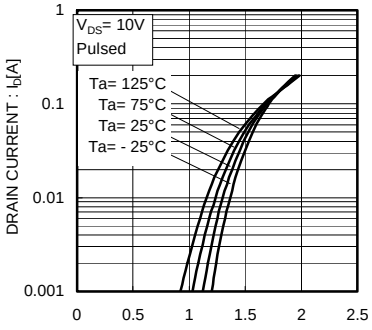



Fig.2 Typical Transfer Characteristics

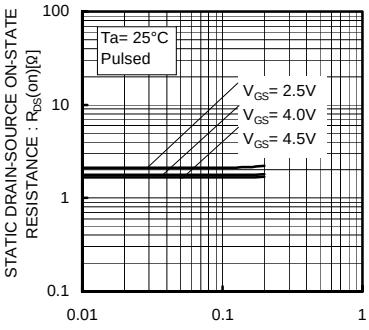



Fig.3 Static Drain-Source On-State Resistance vs. Drain Current(Ⅰ)

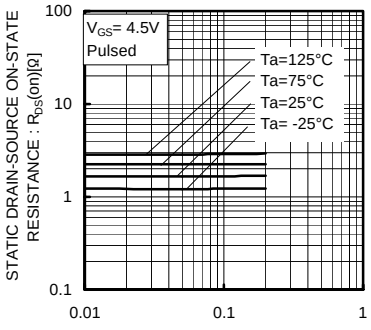



Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(Ⅱ)

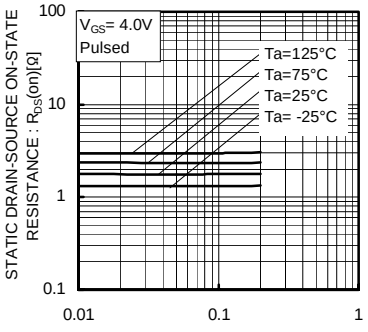



Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(Ⅲ)

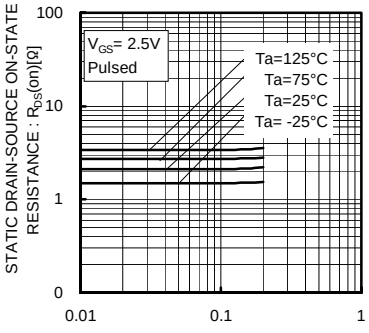



Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(Ⅳ)

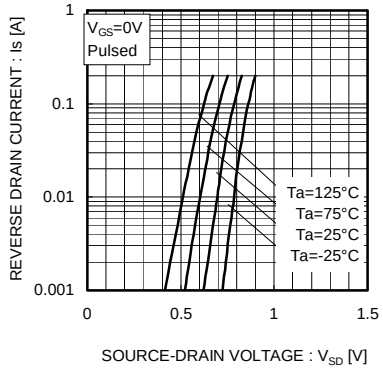



Fig.7 Reverse Drain Current vs. Sourse-Drain Voltage

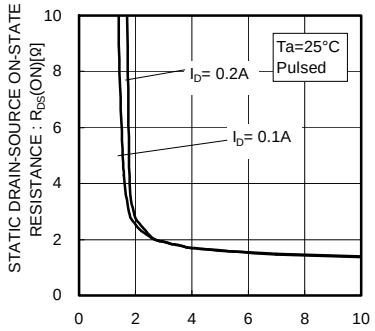



Fig.8 Static Drain-Source On-State Resistance vs. Gate Source Voltage

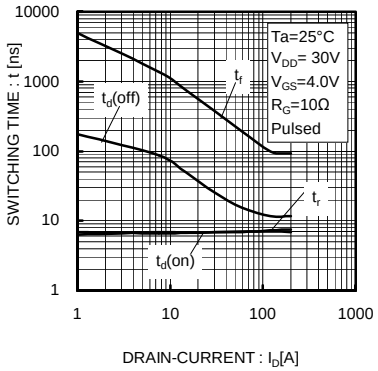



Fig.9 Switching Characteristics

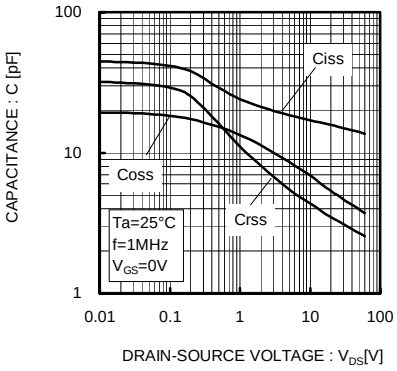



Fig.10 Typical Capacitance vs. Drain-Source Voltage

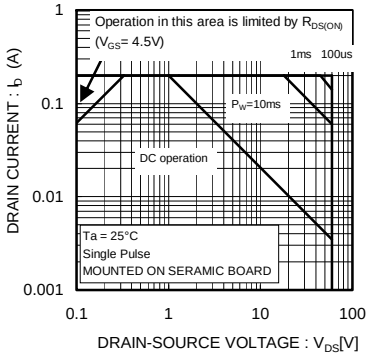



Fig.11 Maximum Safe Operating Aera

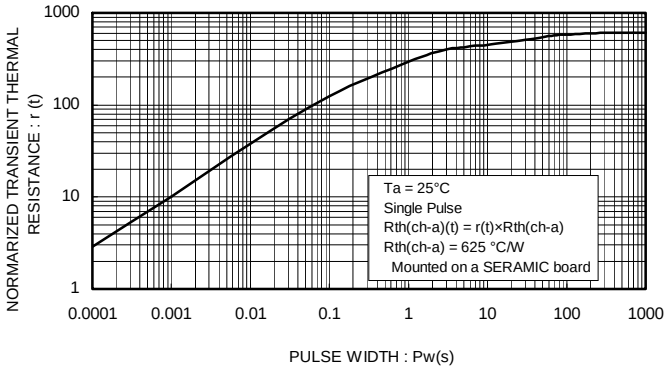



Fig.12 Normalized Transient Thermal Resistance vs. Pulse Width

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