

Transistors

# 2.5V Drive Pch MOS FET

## RTE002P02

●Structure

Silicon P-channel MOS FET

●Features

- 1) Low On-resistance.
- 2) Small package (EMT3).
- 3) 2.5V drive.

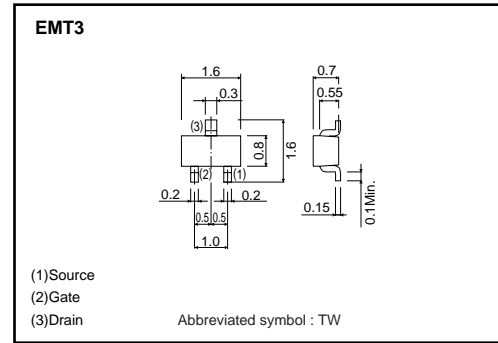
●Applications

Switching

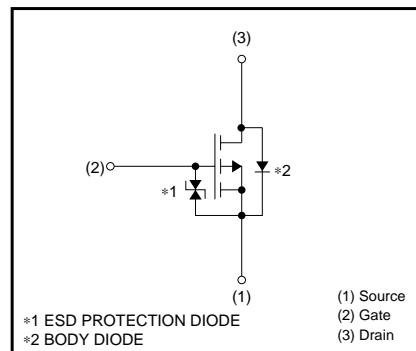
●Package specifications

| Type      | Package                      | Taping |
|-----------|------------------------------|--------|
|           | Code                         | TL     |
|           | Basic ordering unit (pieces) | 3000   |
| RTE002P02 |                              | ○      |

●External dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°C)

| Parameter                    | Symbol     | Limits      | Unit |   |
|------------------------------|------------|-------------|------|---|
| Drain-source voltage         | $V_{DSS}$  | -20         | V    |   |
| Gate-source voltage          | $V_{GSS}$  | ±12         | V    |   |
| Drain current                | Continuous | $I_D$       | ±0.2 | A |
|                              | Pulsed     | $I_{DP}$ *1 | ±0.4 | A |
| Total power dissipation      | $P_D$ *2   | 0.15        | 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 Each terminal mounted on a recommended land

●Thermal resistance

| Parameter          | Symbol           | Limits | Unit |
|--------------------|------------------|--------|------|
| Channel to ambient | $R_{th}(ch-a)$ * | 833    | °C/W |

\* Each terminal mounted on a recommended land

## 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          | $V_{(BR)DSS}$  | –20  | –    | –    | V    | $I_D = -1mA, V_{GS} = 0V$             |
| Zero gate voltage drain current         | $I_{DSS}$      | –    | –    | –1   | μA   | $V_{DS} = -20V, V_{GS} = 0V$          |
| Gate threshold voltage                  | $V_{GS(th)}$   | –0.7 | –    | –2.0 | V    | $V_{DS} = -10V, I_D = -1mA$           |
| Static drain-source on-state resistance | $R_{DS(on)}$ * | –    | 1.0  | 1.5  | Ω    | $I_D = -0.2A, V_{GS} = -4.5V$         |
|   |                | –    | 1.1  | 1.6  | Ω    | $I_D = -0.2A, V_{GS} = -4V$           |
|   |                | –    | 2.0  | 3.0  | Ω    | $I_D = -0.15A, V_{GS} = -2.5V$        |
| Forward transfer admittance             | $ Y_{fs} $ *   | 0.2  | –    | –    | S    | $V_{DS} = -10V, I_D = -0.15A$         |
| Input capacitance                       | $C_{iss}$      | –    | 50   | –    | pF   | $V_{DS} = -10V$                       |
| Output capacitance                      | $C_{oss}$      | –    | 5    | –    | pF   | $V_{GS} = 0V$                         |
| Reverse transfer capacitance            | $C_{rss}$      | –    | 5    | –    | pF   | $f = 1MHz$                            |
| Turn-on delay time                      | $t_{d(on)}$ *  | –    | 9    | –    | ns   | $V_{DD} = -15V$                       |
| Rise time                               | $t_r$ *        | –    | 6    | –    | ns   | $I_D = -0.15A$                        |
| Turn-off delay time                     | $t_{d(off)}$ * | –    | 35   | –    | ns   | $V_{GS} = -4.5V$                      |
| Fall time                               | $t_f$ *        | –    | 45   | –    | ns   | $R_L = 100\Omega$<br>$R_G = 10\Omega$ |

\*Pulsed

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

| Parameter       | Symbol   | Min. | Typ. | Max. | Unit | Conditions                 |
|-----------------|----------|------|------|------|------|----------------------------|
| Forward voltage | $V_{SD}$ | –    | –    | –1.2 | V    | $I_S = -0.1A, V_{GS} = 0V$ |

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