

Transistors

# 2.5V Drive Pch MOS FET

## RTU002P02

●Structure

Silicon P-channel MOS FET

●Features

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

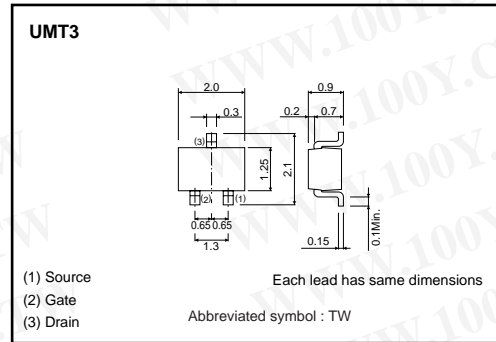
●Applications

Switching

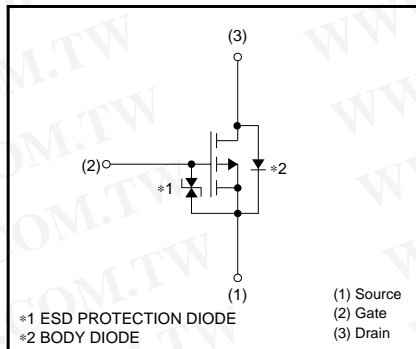
●Package specifications

Type	Package	Taping
	Code	T106
	Basic ordering unit (pieces)	3000
RTU002P02		○

●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	$I_D$	±0.25	A
	Pulsed	$I_{DP}$ *1	±0.5	A
Total power dissipation	$P_D$ *2	0.2	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 Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	$R_{th(ch-a)}$ *	625	°C/W

\* Each terminal mounted on a recommended land

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●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>	-20	-	-	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> = -20V, V <sub>GS</sub> =0V
Gate threshold voltage	V <sub>GS(th)</sub>	-0.7	-	-2.0	V	V <sub>DS</sub> = -10V, I <sub>D</sub> = -1mA
Static drain-source on-state resistance	R <sub>DS(on)</sub> *	-	1.0	1.5	Ω	I <sub>D</sub> = -0.25A, V <sub>GS</sub> = -4.5V
		-	1.1	1.6	Ω	I <sub>D</sub> = -0.25A, V <sub>GS</sub> = -4V
		-	2.0	3.0	Ω	I <sub>D</sub> = -0.15A, V <sub>GS</sub> = -2.5V
Forward transfer admittance	Y <sub>fs</sub>  *	0.2	-	-	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -0.15A
Input capacitance	C <sub>iss</sub>	-	50	-	pF	V <sub>DS</sub> = -10V
Output capacitance	C <sub>oss</sub>	-	5	-	pF	V <sub>GS</sub> = 0V
Reverse transfer capacitance	C <sub>rss</sub>	-	5	-	pF	f=1MHz
Turn-on delay time	t <sub>d(on)</sub> *	-	9	-	ns	V <sub>DD</sub> ≒ -15V
Rise time	t <sub>r</sub> *	-	6	-	ns	I <sub>D</sub> = -0.15A
Turn-off delay time	t <sub>d(off)</sub> *	-	35	-	ns	V <sub>GS</sub> = -4.5V
Fall time	t <sub>f</sub> *	-	45	-	ns	R <sub>L</sub> = 100Ω R <sub>G</sub> = 10Ω

\*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> = -0.1A, V <sub>GS</sub> =0V

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