

## Transistors

# 2.5V Drive Pch MOS FET

## RTF011P02

### ●Structure

Silicon P-channel MOS FET

### ●Features

- 1) Low On-resistance.
- 2) High speed switching.

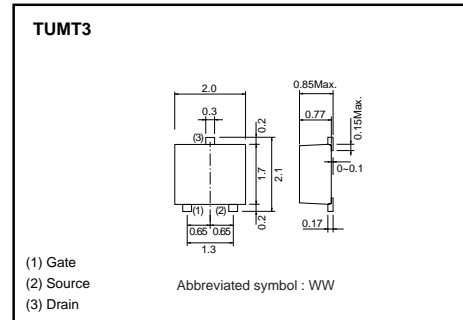
### ●Applications

Switching

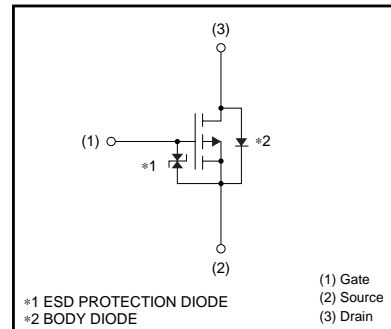
### ●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RTF011P02		○

### ●External dimensions (Unit : mm)



### ●Inner circuit



### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Drain-source voltage	$V_{DS}$	-20	V	
Gate-source voltage	$V_{GS}$	$\pm 12$	V	
Drain current	Continuous	$I_D$	$\pm 1$	A
	Pulsed	$I_{DP}$ *1	$\pm 4$	A
Source current (Body diode)	Continuous	$I_S$	-0.4	A
	Pulsed	$I_{SP}$ *1	-4	A
Total power dissipation	$P_D$ *2	0.8	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 Mounted on a ceramic board

### ●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	$R_{th(ch-a)}$ *	156	°C/W

\* Mounted on a ceramic board

## Transistors

## ●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> *	-	280	390	mΩ	I <sub>D</sub> = -1A, V <sub>GS</sub> = -4.5V
		-	310	430	mΩ	I <sub>D</sub> = -1A, V <sub>GS</sub> = -4V
		-	570	800	mΩ	I <sub>D</sub> = -0.5A, V <sub>GS</sub> = -2.5V
Forward transfer admittance	Y <sub>fs</sub>  *	0.7	-	-	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -0.5A
Input capacitance	C <sub>iss</sub>	-	160	-	pF	V <sub>DS</sub> = -10V
Output capacitance	C <sub>oss</sub>	-	35	-	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	C <sub>rss</sub>	-	20	-	pF	f=1MHz
Turn-on delay time	t <sub>d(on)</sub> *	-	12	-	ns	V <sub>DD</sub> = -15V I <sub>D</sub> = -0.5A
Rise time	t <sub>r</sub> *	-	11	-	ns	V <sub>GS</sub> = -4.5V
Turn-off delay time	t <sub>d(off)</sub> *	-	22	-	ns	R <sub>L</sub> =30Ω
Fall time	t <sub>f</sub> *	-	7	-	ns	R <sub>G</sub> =10Ω
Total gate charge	Q <sub>g</sub> *	-	2.0	-	nC	V <sub>DD</sub> = -15V V <sub>GS</sub> = -4.5V
Gate-source charge	Q <sub>gs</sub> *	-	0.6	-	nC	I <sub>D</sub> = -1A
Gate-drain charge	Q <sub>gd</sub> *	-	0.5	-	nC	R <sub>L</sub> =15Ω 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> = -0.4A, V <sub>GS</sub> =0V

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