

Transistors

2.5V Drive Pch MOS FET

RTF011P02

●Structure

Silicon P-channel MOS FET

●Features

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

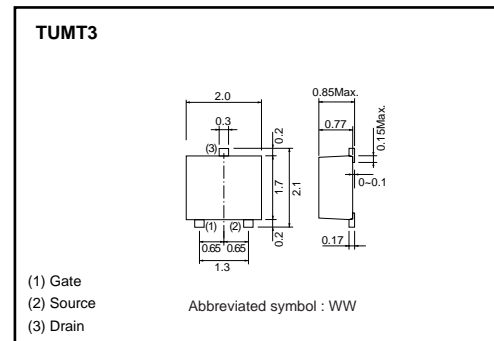
●Applications

Switching

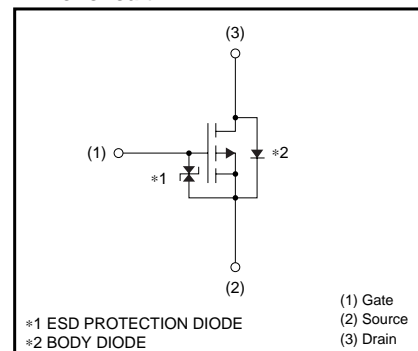
●Packaging specifications

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}	±12	V	
Drain current	Continuous	I_D	±1	A
	Pulsed	I_{DP} *1	±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_{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	$R_{DS(on)}$ *	–	280	390	mΩ	$I_D = -1A, V_{GS} = -4.5V$
		–	310	430	mΩ	$I_D = -1A, V_{GS} = -4V$
		–	570	800	mΩ	$I_D = -0.5A, V_{GS} = -2.5V$
Forward transfer admittance	$ Y_{fs} $ *	0.7	–	–	S	$V_{DS} = -10V, I_D = -0.5A$
Input capacitance	C_{iss}	–	160	–	pF	$V_{DS} = -10V$
Output capacitance	C_{oss}	–	35	–	pF	$V_{GS} = 0V$
Reverse transfer capacitance	C_{rss}	–	20	–	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	–	12	–	ns	$V_{DD} = -15V$
Rise time	t_r *	–	11	–	ns	$I_D = -0.5A$
Turn-off delay time	$t_{d(off)}$ *	–	22	–	ns	$V_{GS} = -4.5V$
Fall time	t_f *	–	7	–	ns	$R_L = 30\Omega$ $R_G = 10\Omega$
Total gate charge	Q_g *	–	2.0	–	nC	$V_{DD} = -15V, V_{GS} = -4.5V$
Gate-source charge	Q_{gs} *	–	0.6	–	nC	$I_D = -1A$
Gate-drain charge	Q_{gd} *	–	0.5	–	nC	$R_L = 15\Omega, R_G = 10\Omega$

*Pulsed

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD}	–	–	–1.2	V	$I_S = -0.4A, V_{GS} = 0V$

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