

RSF010P03

Transistors

# 4V Drive Pch MOS FET

## RSF010P03

●Structure

Silicon P-channel MOS FET

●Features

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

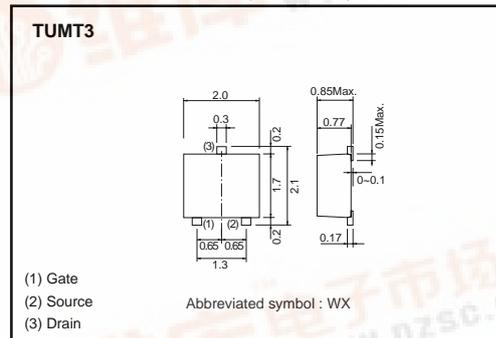
●Applications

Switching

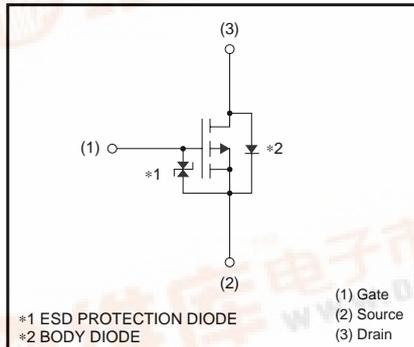
●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RSF010P03		○

●External dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-source voltage	V <sub>DSS</sub>	-30	V
Gate-source voltage	V <sub>GSS</sub>	±20	V
Drain current	Continuous	I <sub>D</sub>	±1 A
	Pulsed	I <sub>DP</sub> *1	±4 A
Source current (Body diode)	Continuous	I <sub>S</sub>	-0.3 A
	Pulsed	I <sub>SP</sub> *1	-4 A
Total power dissipation	P <sub>D</sub> *2	0.8	W
Channel temperature	T <sub>ch</sub>	150	°C
Range of storage temperature	T <sub>stg</sub>	-55 to +150	°C

\*1 Pw≤10μs, Duty cycle≤1%  
\*2 Mounted on a ceramic board

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	R <sub>th(ch-a)</sub> *	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> = ±20V, V <sub>DS</sub> =0V
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	–30	–	–	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> = –30V, V <sub>GS</sub> =0V
Gate threshold voltage	V <sub>GS (th)</sub>	–1.0	–	–2.5	V	V <sub>DS</sub> = –10V, I <sub>D</sub> = –1mA
Static drain-source on-state resistance	R <sub>DS (on)</sub> *	–	250	350	mΩ	I <sub>D</sub> = –1A, V <sub>GS</sub> = –10V
		–	400	560	mΩ	I <sub>D</sub> = –0.5A, V <sub>GS</sub> = –4.5V
		–	450	630	mΩ	I <sub>D</sub> = –0.5A, V <sub>GS</sub> = –4.0V
Forward transfer admittance	Y <sub>fs</sub>   *	0.5	–	–	S	V <sub>DS</sub> = –10V, I <sub>D</sub> = –0.5A
Input capacitance	C <sub>iss</sub>	–	120	–	pF	V <sub>DS</sub> = –10V
Output capacitance	C <sub>oss</sub>	–	27	–	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	C <sub>rss</sub>	–	17	–	pF	f=1MHz
Turn-on delay time	t <sub>d (on)</sub> *	–	8	–	ns	V <sub>DD</sub> ≐ –15V
Rise time	t <sub>r</sub> *	–	11	–	ns	I <sub>D</sub> = –0.5A
Turn-off delay time	t <sub>d (off)</sub> *	–	20	–	ns	V <sub>GS</sub> = –10V
Fall time	t <sub>f</sub> *	–	12	–	ns	R <sub>L</sub> =30Ω
Total gate charge	Q <sub>g</sub>	–	1.9	–	nC	R <sub>G</sub> =10Ω
Gate-source charge	Q <sub>gs</sub>	–	0.7	–	nC	V <sub>DD</sub> ≐ –15V, V <sub>GS</sub> = –5V
Gate-drain charge	Q <sub>gd</sub>	–	0.4	–	nC	I <sub>D</sub> = –1A
						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> = –0.3A, V <sub>GS</sub> =0V

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