

# RSR020P03

## 4V Drive Pch MOS FET

●Structure

TY P-channel MOS FET

●Features

- 1) Low On-resistance
- 2) Space saving—small surface mount package (TSMT3)
- 3) 4V drive

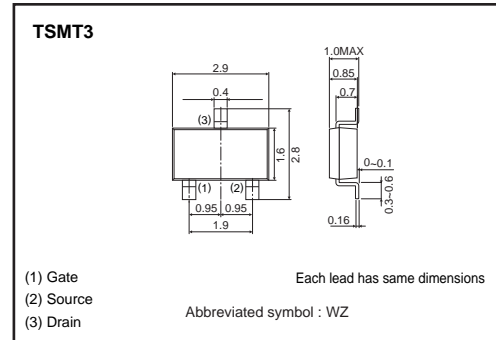
●Applications

Switching

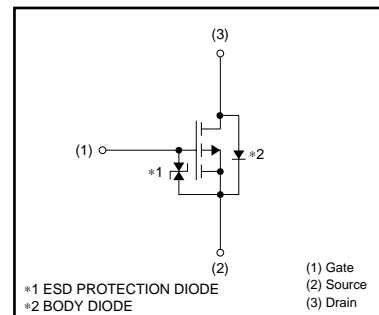
●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RSR020P03		○

●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>	±2	A
	Pulsed	I <sub>DP</sub> *1	±8	A
Source current (Body diode)	Continuous	I <sub>S</sub>	-0.8	A
	Pulsed	I <sub>SP</sub> *1	-8	A
Total power dissipation	P <sub>D</sub> *2	1	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> *	125	°C/W

\* Mounted on a ceramic board



# RSR020P03

●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> *	–	85	120	mΩ	I <sub>D</sub> = –2A, V <sub>GS</sub> = –10V
		–	135	190	mΩ	I <sub>D</sub> = –1A, V <sub>GS</sub> = –4.5V
		–	150	210	mΩ	I <sub>D</sub> = –1A, V <sub>GS</sub> = –4V
Forward transfer admittance	Y <sub>fs</sub>  *	1.4	–	–	S	V <sub>DS</sub> = –10V, I <sub>D</sub> = –1A
Input capacitance	C <sub>iss</sub>	–	370	–	pF	V <sub>DS</sub> = –10V
Output capacitance	C <sub>oss</sub>	–	80	–	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	C <sub>rss</sub>	–	55	–	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> *	–	10	–	ns	I <sub>D</sub> = –1A
Turn-off delay time	t <sub>d (off)</sub> *	–	35	–	ns	V <sub>GS</sub> = –10V
Fall time	t <sub>f</sub> *	–	11	–	ns	R <sub>L</sub> =15Ω
Total gate charge	Q <sub>g</sub> *	–	4.3	–	nC	V <sub>DD</sub> ≐ –15V V <sub>GS</sub> = –5V
Gate-source charge	Q <sub>gs</sub> *	–	1.4	–	nC	I <sub>D</sub> = –2A
Gate-drain charge	Q <sub>gd</sub> *	–	1.5	–	nC	R <sub>L</sub> =7.5Ω 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> = –0.8A, V <sub>GS</sub> =0V

\*Pulsed