

Transistors

4V Drive Pch MOS FET

RSR020P03

●Structure

Silicon P-channel MOS FET

●Features

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

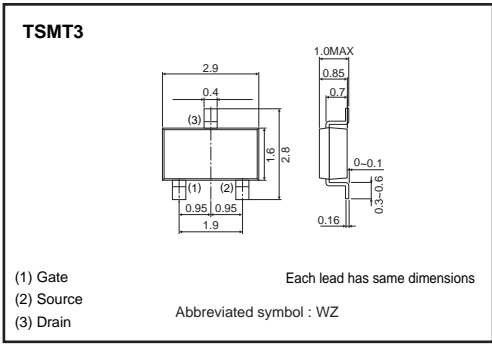
●Applications

Switching

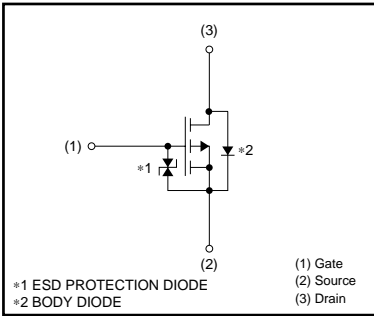
●Packaging specifications

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_{DS}	-30	V
Gate-source voltage		V_{GS}	±20	V
Drain current	Continuous	I_D	±2	A
	Pulsed	I_{DP} *1	±8	A
Source current (Body diode)	Continuous	I_S	-0.8	A
	Pulsed	I_{SP} *1	-8	A
Total power dissipation		P_D *2	1	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	$R_{th(ch-a)}$ *	125	°C/W

* Mounted on a ceramic board

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 20V$, $V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR) DSS}$	-30	—	—	V	$I_D = -1mA$, $V_{GS} = 0V$
Zero gate voltage drain current	I_{DSS}	—	—	-1	μA	$V_{DS} = -30V$, $V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	-1.0	—	-2.5	V	$V_{DS} = -10V$, $I_D = -1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	—	85	120	m Ω	$I_D = -2A$, $V_{GS} = -10V$
		—	135	190	m Ω	$I_D = -1A$, $V_{GS} = -4.5V$
		—	150	210	m Ω	$I_D = -1A$, $V_{GS} = -4V$
Forward transfer admittance	$ Y_{fs} $ *	1.4	—	—	S	$V_{DS} = -10V$, $I_D = -1A$
Input capacitance	C_{iss}	—	370	—	pF	$V_{DS} = -10V$
Output capacitance	C_{oss}	—	80	—	pF	$V_{GS} = 0V$
Reverse transfer capacitance	C_{rss}	—	55	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	—	8	—	ns	$V_{DD} \doteq -15V$
Rise time	t_r *	—	10	—	ns	$I_D = -1A$
Turn-off delay time	$t_{d(off)}$ *	—	35	—	ns	$V_{GS} = -10V$
Fall time	t_f *	—	11	—	ns	$R_L = 15\Omega$
Total gate charge	Q_g *	—	4.3	—	nC	$V_{DD} \doteq -15V$ $V_{GS} = -5V$
Gate-source charge	Q_{gs} *	—	1.4	—	nC	$I_D = -2A$
Gate-drain charge	Q_{gd} *	—	1.5	—	nC	$R_L = 7.5\Omega$ $R_G = 10\Omega$

*Pulsed

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD} *	—	—	-1.2	V	$I_S = -0.8A$, $V_{GS} = 0V$

*Pulsed

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