

# 4V Drive Pch MOS FET

## RSR025P03

●Structure

Silicon P-channel MOS FET

●Features

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

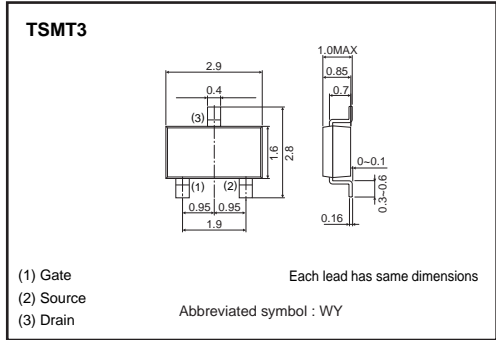
●Applications

Switching

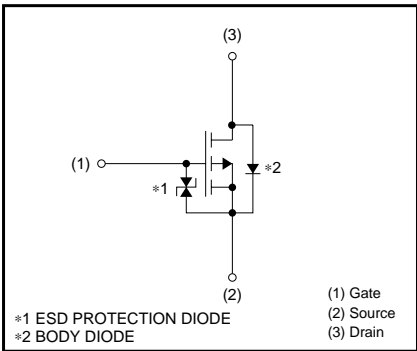
●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RSR025P03		○

●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		$V_{GS}$	$\pm 20$	V
Drain current	Continuous	$I_D$	$\pm 2.5$	A
	Pulsed	$I_{DP}$ *1	$\pm 10$	A
Source current (Body diode)	Continuous	$I_S$	-0.8	A
	Pulsed	$I_{SP}$ *1	-10	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

## Transistors

## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	$I_{GSS}$	—	—	$\pm 10$	$\mu A$	$V_{GS} = \pm 20V$ , $V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR) DSS}$	-30	—	—	V	$I_D = -1mA$ , $V_{GS} = 0V$
Zero gate voltage drain current	$I_{DSS}$	—	—	-1	$\mu A$	$V_{DS} = -30V$ , $V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	-1.0	—	-2.5	V	$V_{DS} = -10V$ , $I_D = -1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	—	70	98	m $\Omega$	$I_D = -2.5A$ , $V_{GS} = -10V$
		—	100	140	m $\Omega$	$I_D = -1.2A$ , $V_{GS} = -4.5V$
		—	115	160	m $\Omega$	$I_D = -1.2A$ , $V_{GS} = -4V$
Forward transfer admittance	$ Y_{fs} $ *	1.6	—	—	S	$V_{DS} = -10V$ , $I_D = -1.2A$
Input capacitance	$C_{iss}$	—	460	—	pF	$V_{DS} = -10V$
Output capacitance	$C_{oss}$	—	105	—	pF	$V_{GS} = 0V$
Reverse transfer capacitance	$C_{rss}$	—	65	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	—	10	—	ns	$V_{DD} \doteq -15V$
Rise time	$t_r$ *	—	10	—	ns	$I_D = -1.2A$
Turn-off delay time	$t_{d(off)}$ *	—	42	—	ns	$V_{GS} = -10V$
Fall time	$t_f$ *	—	10	—	ns	$R_L = 12.5\Omega$
Total gate charge	$Q_g$ *	—	5.4	—	nC	$V_{DD} \doteq -15V$ $V_{GS} = -5V$
Gate-source charge	$Q_{gs}$ *	—	1.4	—	nC	$I_D = -2.5A$
Gate-drain charge	$Q_{gd}$ *	—	1.6	—	nC	$R_L = 6\Omega$ $R_G = 10\Omega$

\*Pulsed

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

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

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