

Transistors

4V Drive Pch MOSFET

RSR015P03

●Structure
Silicon P-channel MOSFET

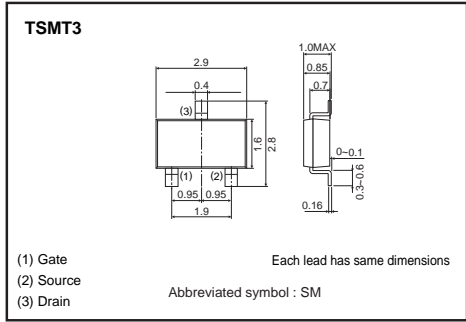
- Features**
- 1) Low On-resistance
 - 2) Space saving—small surface mount package (TSMT3)
 - 3) 4V drive

●Applications
Switching

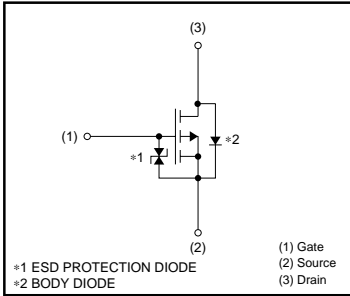
●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RSR015P03		○

●Dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-source voltage	V_{DSS}	-30	V
Gate-source voltage	V_{GSS}	± 20	V
Drain current	Continuous	I_D	± 1.5 A
	Pulsed	I_{DP} *1	± 6 A
Source current (Body diode)	Continuous	I_S	-0.5 A
	Pulsed	I_{SP} *1	-6 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} =±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)} *	-	170	235	mΩ	I _D =-1.5A, V _{GS} =-10V
		-	270	375	mΩ	I _D =-0.8A, V _{GS} =-4.5V
		-	320	440	mΩ	I _D =-0.8A, V _{GS} =-4V
Forward transfer admittance	Y _{fs} *	0.9	-	-	S	V _{DS} =-10V, I _D =-0.8A
Input capacitance	C _{iss}	-	190	-	pF	V _{DS} =-10V
Output capacitance	C _{oss}	-	45	-	pF	V _{GS} =0V
Reverse transfer capacitance	C _{rss}	-	30	-	pF	f=1MHz
Turn-on delay time	t _{d(on)} *	-	6	-	ns	V _{DD} =-15V I _D =-0.8A
Rise time	t _r *	-	8	-	ns	V _{GS} =-10V
Turn-off delay time	t _{d(off)} *	-	22	-	ns	R _L =19Ω
Fall time	t _f *	-	6	-	ns	R _G =10Ω
Total gate charge	Q _g *	-	2.6	-	nC	V _{DD} =-15V V _{GS} =-5V
Gate-source charge	Q _{gs} *	-	1.0	-	nC	I _D =-1.5A
Gate-drain charge	Q _{gd} *	-	0.7	-	nC	R _L =10Ω R _G =10Ω

*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 =-0.5A, V _{GS} =0V

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●Electrical characteristics curves

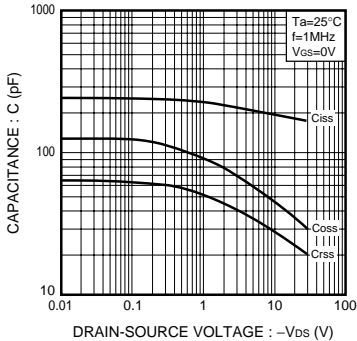


Fig.1 Typical Capacitance vs. Drain-Source Voltage

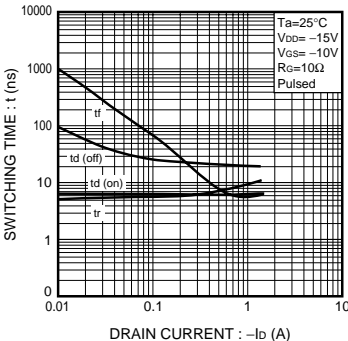


Fig.2 Switching Characteristics

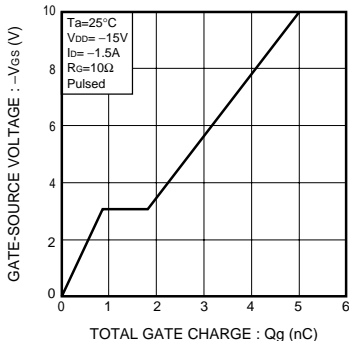


Fig.3 Dynamic Input Characteristics

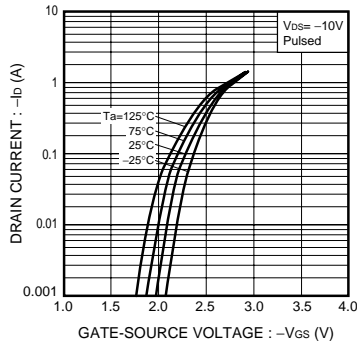


Fig.4 Typical Transfer Characteristics

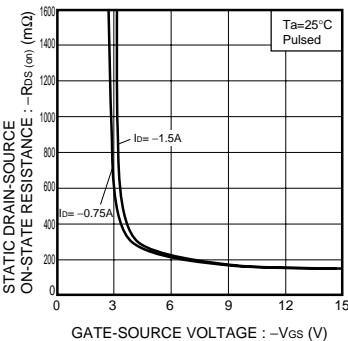


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

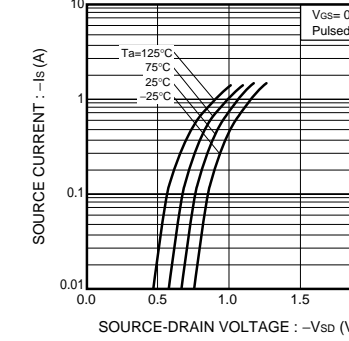


Fig.6 Source Current vs. Source-Drain Voltage

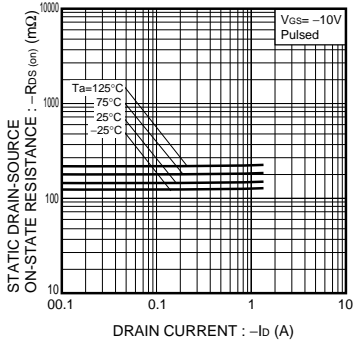


Fig.7 Static Drain-Source On-State Resistance vs. Drain current (I)

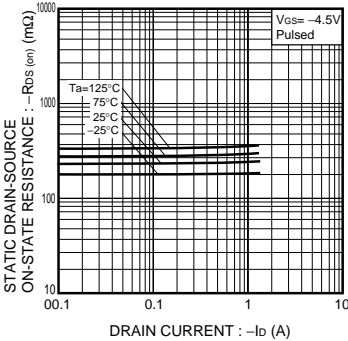


Fig.8 Static Drain-Source On-State Resistance vs. Drain current (II)

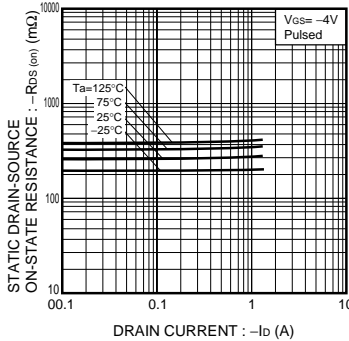


Fig.9 Static Drain-Source On-State Resistance vs. Drain current (III)

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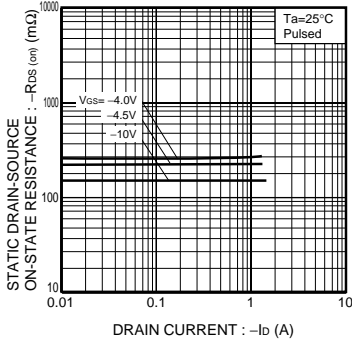


Fig.10 Static Drain-Source On-State Resistance vs. Drain current (IV)

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