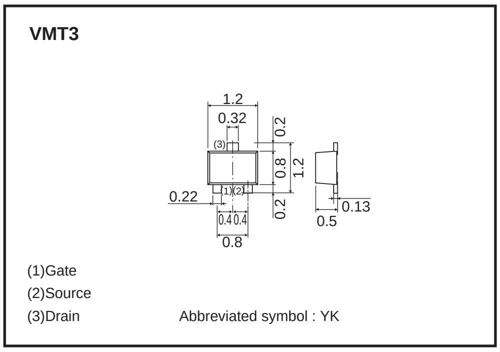
1.2V Drive Pch MOSFET

RZM002P02

●Structure
Silicon P-channel MOSFET

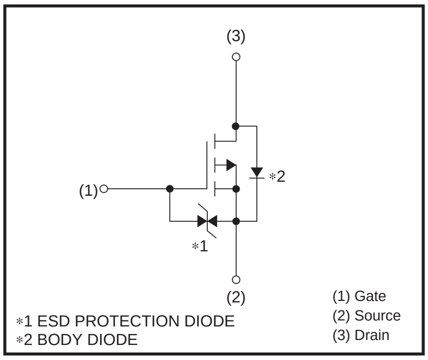
●Dimensions (Unit : mm)



●Features
1) High Speed Switching.
2) Small package (VMT3).
3) Ultra Low Voltage drive. (1.2V drive)

●Applications
Switching

●Inner circuit



●Packaging specifications

Type	Package	Taping
	Code	T2L
	Basic ordering unit (pieces)	8000
RZM002P02		○

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	−20	V
Gate-source voltage		V_{GSS}	±10	V
Drain current	Continuous	I_D	±200	mA
	Pulsed	I_{DP} ∗1	±800	mA
Source current (Body diode)	Continuous	I_S	−100	mA
	Pulsed	I_{SP} ∗1	−800	mA
Total power dissipation		P_D ∗2	150	mW
Channel temperature		Tch	150	°C
Range of storage temperature		Tstg	−55 to +150	°C

∗1 Pw≤10µs, Duty cycle≤1%
∗2 Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	Rth(ch-a)∗	833	°C/W

∗ Each terminal mounted on a recommended land

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±10	μA	V_{GS}= ±10V, V_{DS}=0V
Drain-source breakdown voltage	$V_{(BR)DSS}$	–20	–	–	V	I_D= –1mA, V_{GS}=0V
Zero gate voltage drain current	I_{DSS}	–	–	–1	μA	V_{DS}= –20V, V_{GS}=0V
Gate threshold voltage	$V_{GS(th)}$	–0.3	–	–1.0	V	V_{DS}= –10V, I_D= –100uA
Static drain-source on-state resistance	$R_{DS(on)}$*	–	0.8	1.2	Ω	I_D= –200mA, V_{GS}= –4.5V
		–	1.0	1.5	Ω	I_D= –100mA, V_{GS}= –2.5V
		–	1.3	2.2	Ω	I_D= –100mA, V_{GS}= –1.8V
		–	1.6	3.5	Ω	I_D= –40mA, V_{GS}= –1.5V
		–	2.4	9.6	Ω	I_D= –10mA, V_{GS}= –1.2V
Forward transfer admittance	$\|Y_{fs}\|$ *	0.2	–	–	S	V_{DS}= –10V, I_D= –200mA
Input capacitance	C_{iss}	–	115	–	pF	V_{DS}= –10V
Output capacitance	C_{oss}	–	10	–	pF	V_{GS}= 0V
Reverse transfer capacitance	C_{rss}	–	6	–	pF	f=1MHz
Turn-on delay time	$t_{d(on)}$ *	–	6	–	ns	V_{DD}≒ –10V
Rise time	t_r *	–	4	–	ns	I_D= –100mA V_{GS}= –4.5V
Turn-off delay time	$t_{d(off)}$ *	–	17	–	ns	R_L≒100Ω
Fall time	t_f *	–	17	–	ns	R_G= 10Ω
Total gate charge	Q_g *	–	1.4	–	nC	V_{DD}≒ –10V, I_D= –200mA
Gate-source charge	Q_{gs} *	–	0.3	–	nC	V_{GS}= –4.5V
Gate-drain charge	Q_{gd} *	–	0.3	–	nC	R_L≒50Ω, 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= –200mA, V_{GS}=0V

*Pulsed

●Electrical characteristic curves

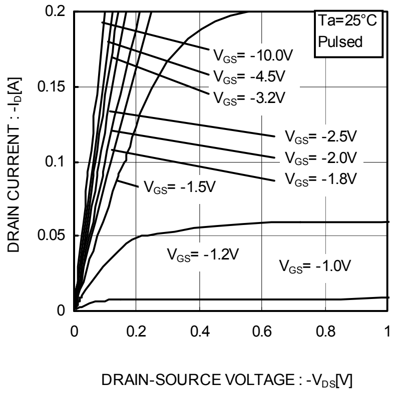


Fig.1 Typical output characteristics(Ⅰ)

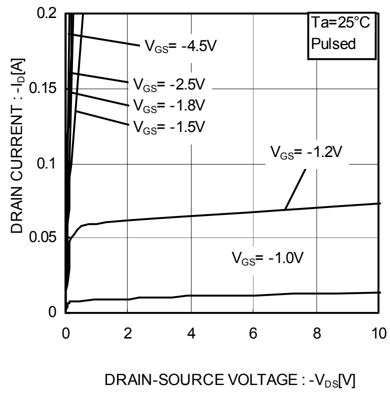


Fig.2 Typical output characteristics(Ⅱ)

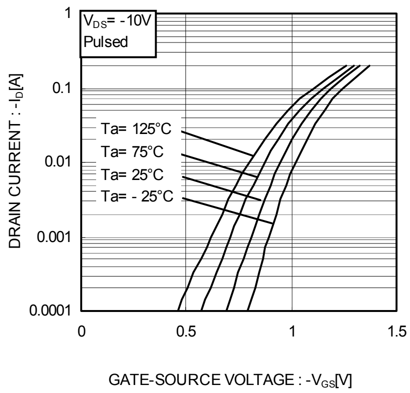


Fig.3 Typical Transfer Characteristics

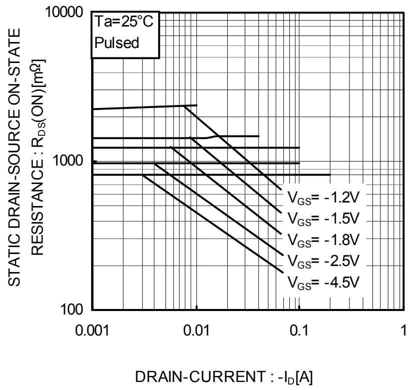


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(Ⅰ)

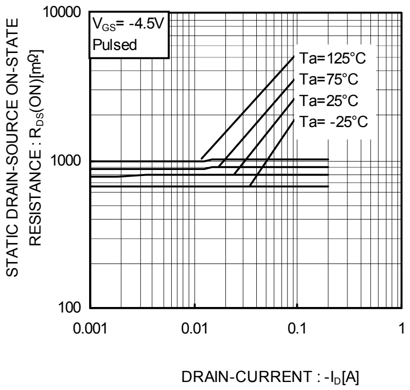


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(Ⅱ)

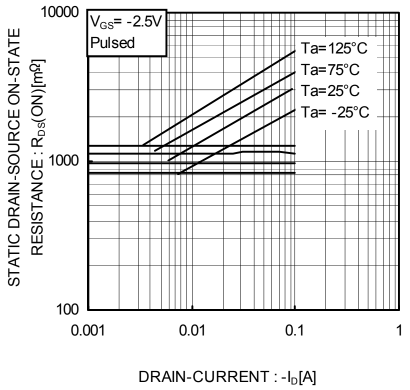


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(Ⅲ)

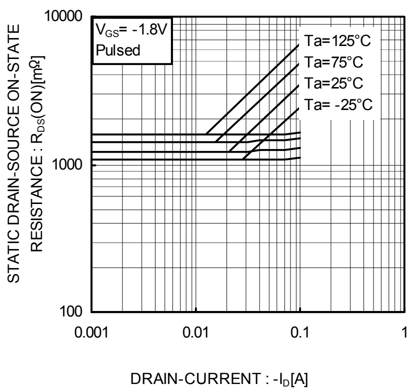


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current(Ⅳ)

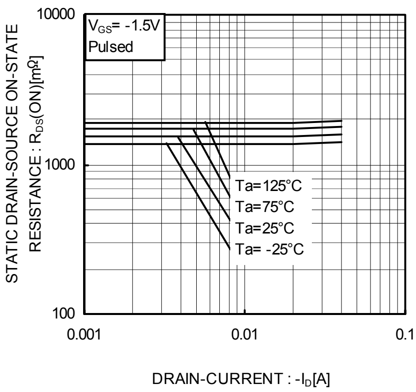


Fig.8 Static Drain-Source On-State Resistance vs. Drain Current(Ⅴ)

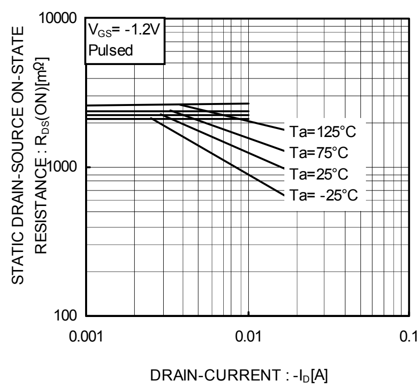


Fig.9 Static Drain-Source On-State Resistance vs. Drain Current(Ⅵ)

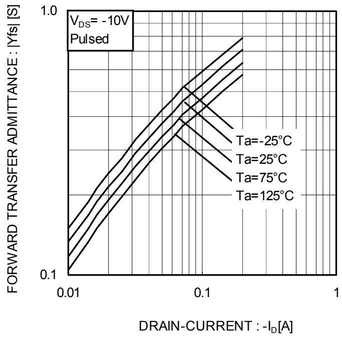


Fig.10 Forward Transfer Admittance vs. Drain Current

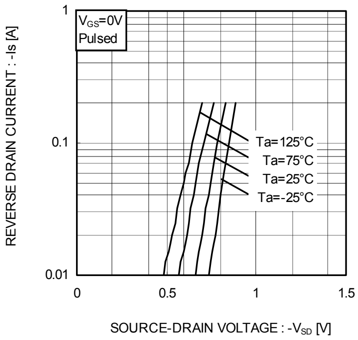


Fig.11 Reverse Drain Current vs. Sourse-Drain Voltage

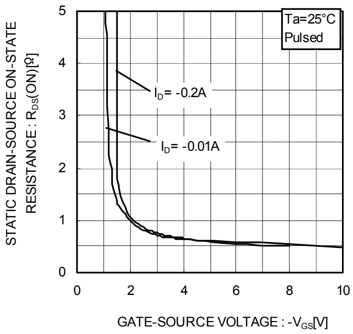


Fig.12 Static Drain-Source On-State Resistance vs. Gate Source Voltage

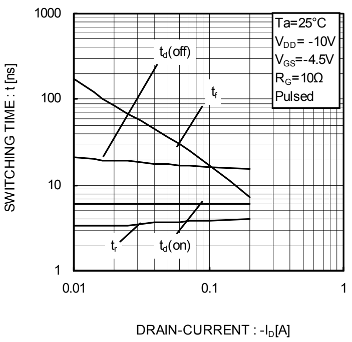


Fig.13 Switching Characteristics

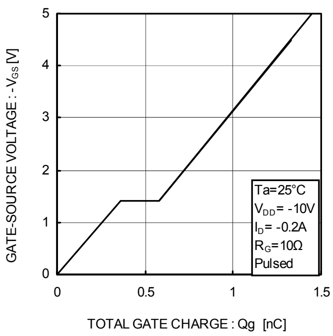


Fig.14 Dynamic Input Characteristics

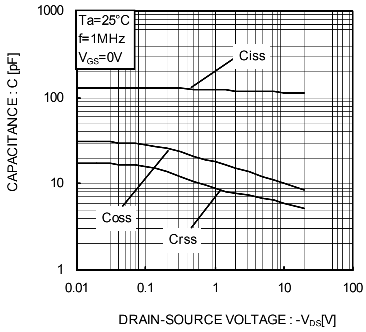


Fig.15 Typical Capacitance vs. Drain-Source Voltage

●Measurement circuit

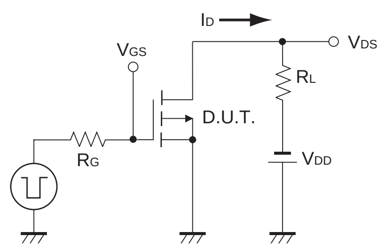


Fig.1-1 Switching Time Measurement Circuit

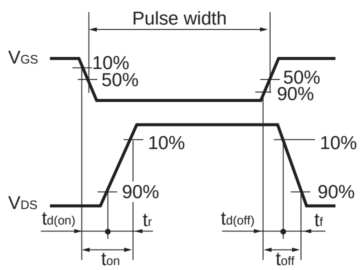


Fig.1-2 Switching Waveforms

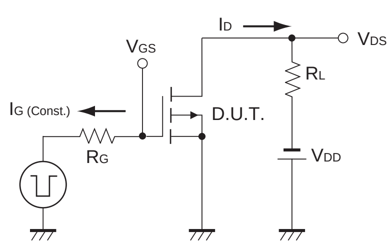


Fig.2-1 Gate Charge Measurement Circuit

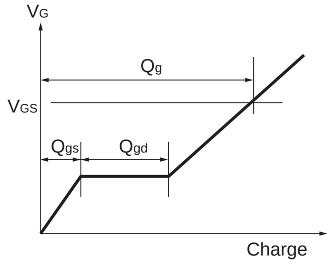


Fig.2-2 Gate Charge Waveform

●Notice

This product might cause chip aging and breakdown under the large electrified environment.
Please consider to design ESD protection circuit.

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