Transistors

4V Drive Pch MOSFET

RSM002P03

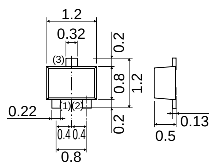
●Structure
Silicon P-channel MOSFET

●Features
1) Low On-resistance.
2) Small package (VMT3).
3) 4V drive.

●Applications
Switching

●Dimensions (Unit : mm)

VMT3



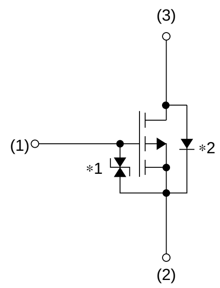
(1)Gate
(2)Source
(3)Drain

Abbreviated symbol : WP

●Packaging specifications

Type	Package	Taping
	Code	T2L
	Basic ordering unit (pieces)	8000
RSM002P03		○

●Inner circuit



∗1 ESD PROTECTION DIODE
∗2 BODY DIODE

(1) Gate
(2) Source
(3) Drain

●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	±0.2	A
	Pulsed	I_{DP} ∗1	±0.4	A
Total power dissipation		P_D ∗2	0.15	W
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

ROHM

●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	$R_{DS\,(on)}$*	–	0.9	1.4	Ω	I_D= –0.2A, V_{GS}= –10V
		–	1.4	2.1	Ω	I_D= –0.15A, V_{GS}= –4.5V
		–	1.6	2.4	Ω	I_D= –0.15A, V_{GS}= –4.0V
Forward transfer admittance	$\lvert Y_{fs} \rvert$ *	0.2	–	–	S	V_{DS}= –10V, I_D= –0.15A
Input capacitance	C_{iss}	–	30	–	pF	V_{DS}= –10V
Output capacitance	C_{oss}	–	4	–	pF	V_{GS}= 0V
Reverse transfer capacitance	C_{rss}	–	5	–	pF	f=1MHz
Turn-on delay time	$t_{d\,(on)}$ *	–	8	–	ns	V_{DD}≒ –15V
Rise time	t_r *	–	5	–	ns	I_D= –0.15A
Turn-off delay time	$t_{d\,(off)}$ *	–	30	–	ns	V_{GS}= –10V R_L= 100Ω
Fall time	t_f *	–	40	–	ns	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= –0.1A, V_{GS}=0V

●Electrical characteristics curves

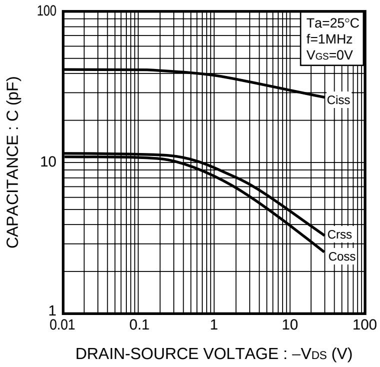


Fig.1 Typical Capacitance vs. Drain-Source Voltage

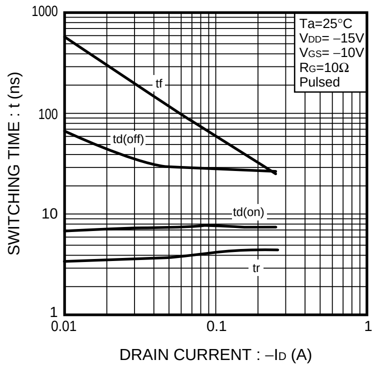


Fig.2 Switching Characteristics

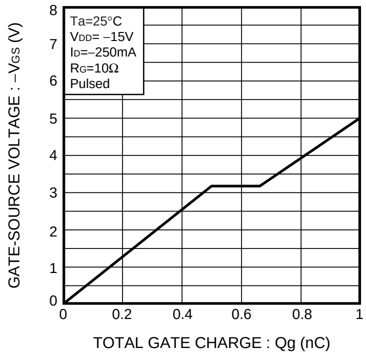


Fig.3 Dynamic Input Characteristics

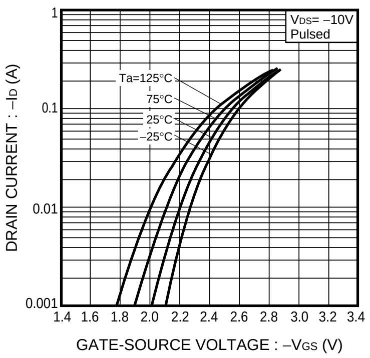


Fig.4 Typical Transfer Characteristics

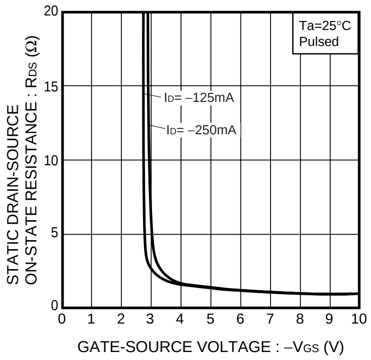


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

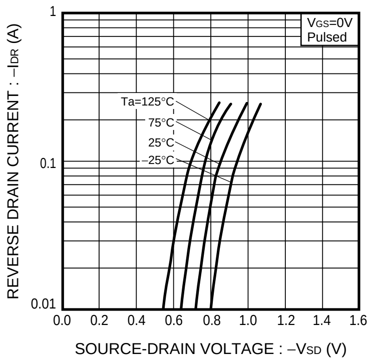


Fig.6 Reverse Drain Current vs. Source-Drain Voltage

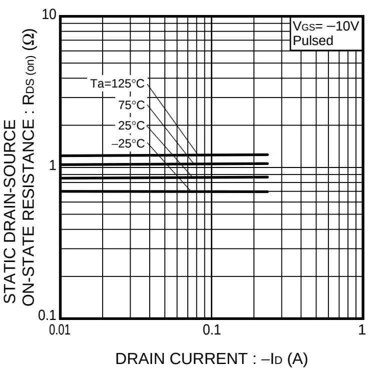


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current (I)

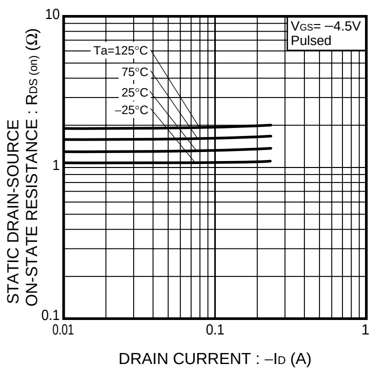


Fig.8 Static Drain-Source On-State Resistance vs. Drain Current (II)

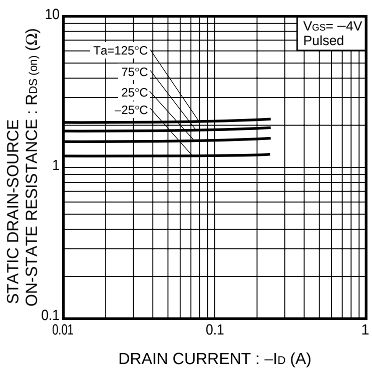


Fig.9 Static Drain-Source On-State Resistance vs. Drain Current (III)

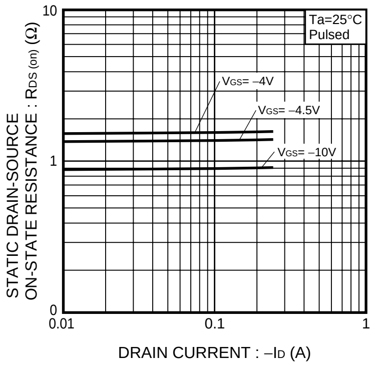


Fig.10 Static Drain-Source On-State Resistance vs. Drain Current (Ⅳ)

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).
Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.
In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.