1.2V Drive Pch + Pch MOSFET

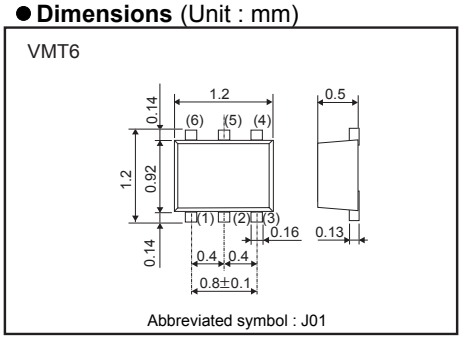
VT6J1

● Structure
Silicon P-channel MOSFET

● Features
1) Low on-resistance.
2) Small package(VMT6).
3) Low voltage drive(1.2V drive).

● Application
Switching

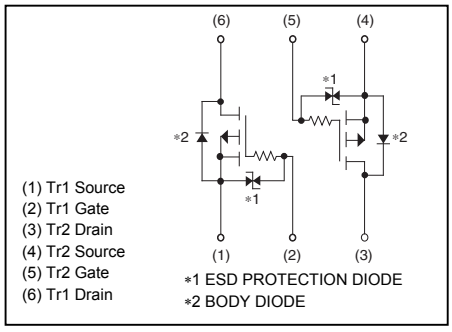
● Dimensions (Unit : mm)



● Packaging specifications

Type	Package	Taping
	Code	T2CR
	Basic ordering unit (pieces)	8000
VT6J1		O

● Inner circuit



● 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	±100	mA
	Pulsed	I_{DP} *1	±400	mA
Power dissipation		P_D *2	0.15	W/TOTAL
			0.12	W/ELEMENT
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 reference land.

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

<It is the same ratings for Tr1 and Tr2.>

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=−100μA
Static drain-source on-state resistance	$R_{DS\ (on)}$*	-	2.5	3.8	Ω	I_D=−100mA, V_{GS}=−4.5V
		-	3.4	5.1		I_D=−50mA, V_{GS}=−2.5V
		-	4.8	8.2		I_D=−20mA, V_{GS}=−1.8V
		-	6.0	13.2		I_D=−10mA, V_{GS}=−1.5V
		-	10.0	40.0		I_D=−1mA, V_{GS}=−1.2V
Forward transfer admittance	$\|Y_{fs}\|$*	120	-	-	mS	V_{DS}=−10V, I_D=−100mA
Input capacitance	C_{iss}	-	15.0	-	pF	V_{DS}=−10V
Output capacitance	C_{oss}	-	4.0	-	pF	V_{GS}=0V
Reverse transfer capacitance	C_{rss}	-	1.5	-	pF	f=1MHz
Turn-on delay time	$t_{d(on)}$*	-	46	-	ns	V_{DD}≒ −10V, I_D=−50mA
Rise time	t_r *	-	62	-	ns	V_{GS}=−4.5V
Turn-off delay time	$t_{d(off)}$*	-	325	-	ns	R_L=200Ω
Fall time	t_f *	-	137	-	ns	R_G=10Ω

*Pulsed

●**Body diode characteristics** (Source-Drain)

<It is the same ratings for Tr1 and Tr2.>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward Voltage	V_{SD}*	-	-	−1.2	V	I_s=−100mA, V_{GS}=0V

*Pulsed

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●Electrical characteristic curves

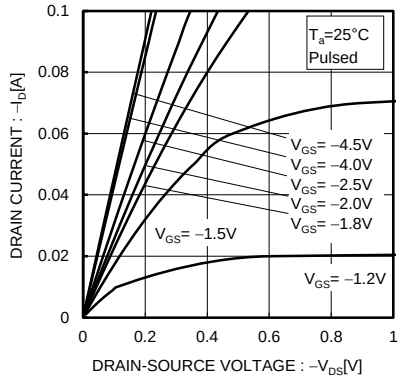


Fig.1 Typical output characteristics(Ⅰ)

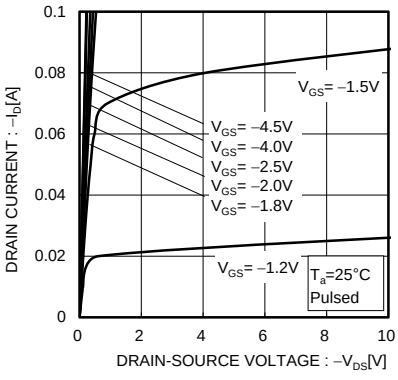


Fig.2 Typical output characteristics(Ⅱ)

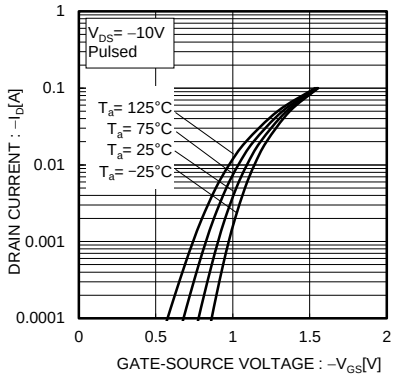


Fig.3 Typical Transfer Characteristics

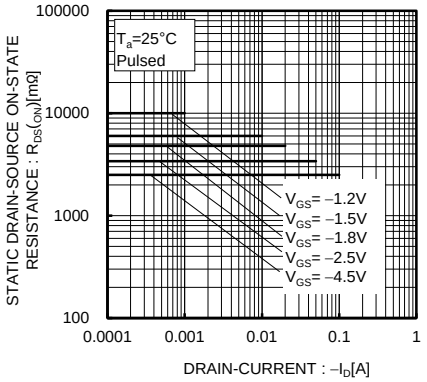


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(Ⅰ)

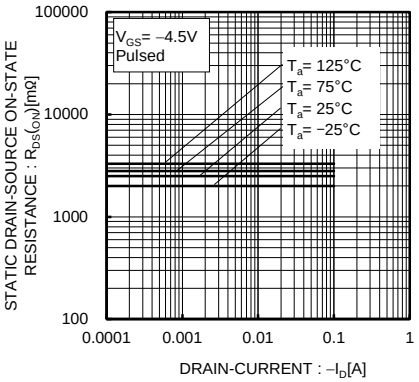


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(Ⅱ)

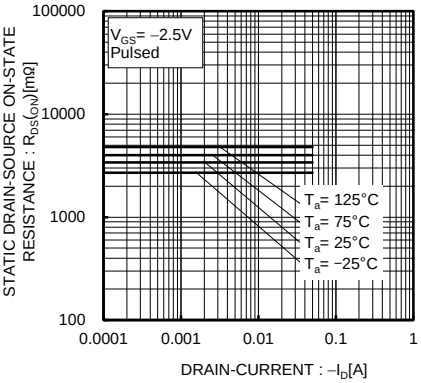


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(Ⅲ)

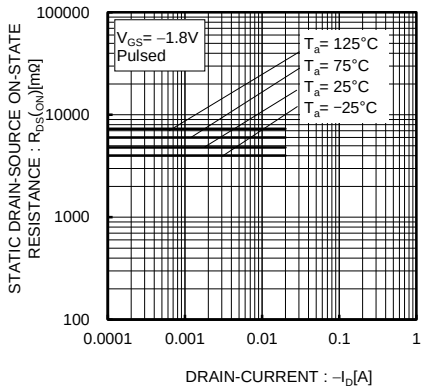


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current(Ⅳ)

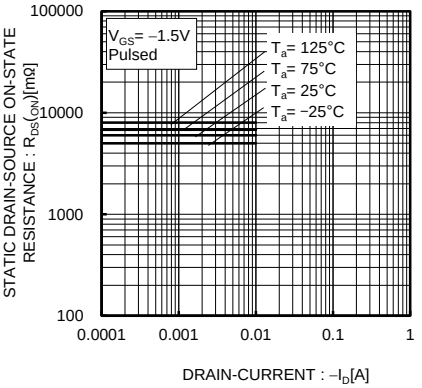


Fig.8 Static Drain-Source On-State Resistance vs. Drain Current(Ⅴ)

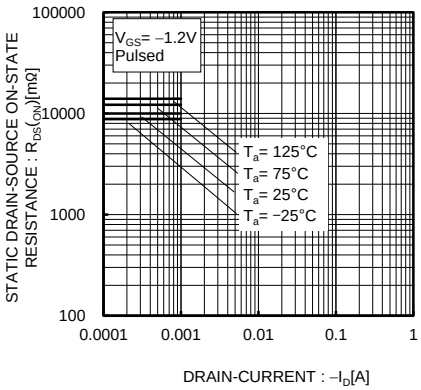


Fig.9 Static Drain-Source On-State Resistance vs. Drain Current(Ⅵ)

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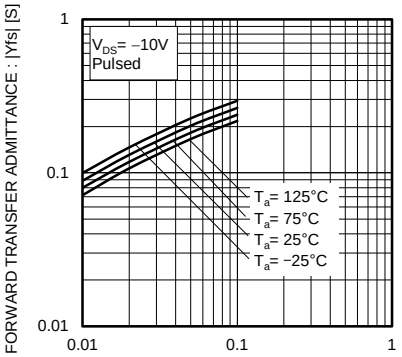


Fig.10 Forward Transfer Admittance vs. Drain Current

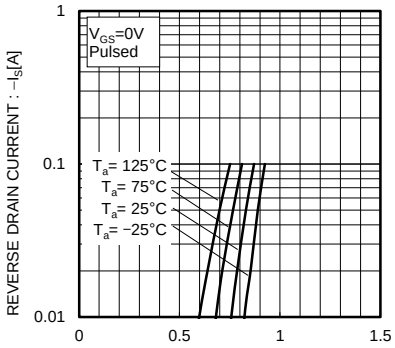


Fig.11 Reverse Drain Current vs. Sourse-Drain Voltage

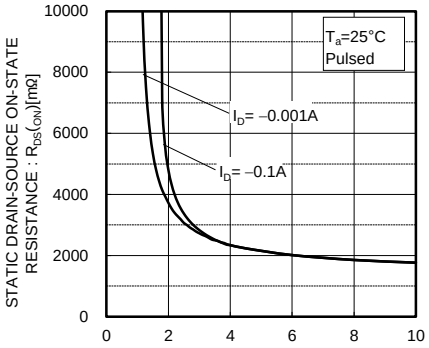


Fig.12 Static Drain-Source On-State Resistance vs. Gate Source Voltage

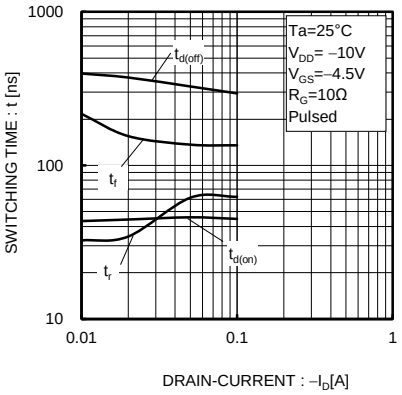


Fig.13 Switching Characteristics

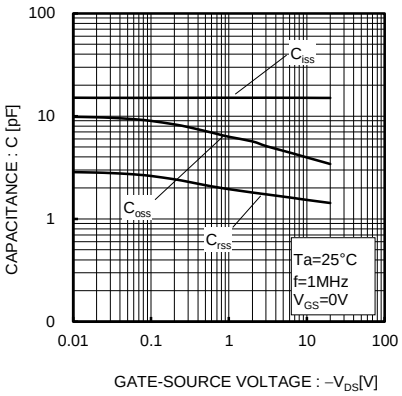


Fig.14 Typical Capacitance vs. Drain-Source Voltage

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● **Measurement circuits**

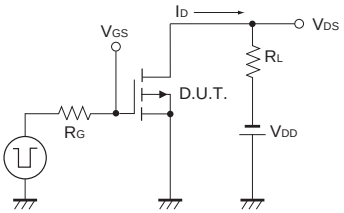


Fig.1-1 Switching Time Measurement Circuit

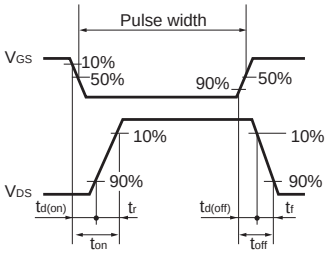


Fig.1-2 Switching Waveforms

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