

1.5V Drive Pch MOSFET

RZL035P01

●Structure

Silicon P-channel MOSFET

●Features

- 1) Low on-resistance.
- 2) High power package.
- 3) Low voltage drive. (1.5V)

●Application

Switching

●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
RZL035P01		○

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Drain-source voltage	V _{bss}	-12	V	
Gate-source voltage	V _{gss}	±10	V	
Drain current	Continuous	I _D	±3.5	A
	Pulsed	I _{DP} *1	±14	A
Source current (Body diode)	Continuous	I _S	-0.8	A
	Pulsed	I _{SP} *1	-14	A
Total power dissipation	P _D *2	1.0	W	
Channel temperature	T _{ch}	150	°C	
Range of Storage temperature	T _{stg}	-55 to +150	°C	

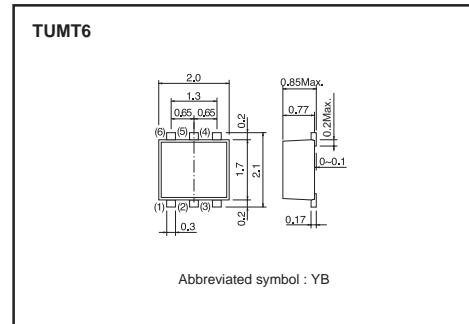
*1 P_w≤10μs, Duty cycle≤1%
*2 Mounted on a ceramic board

●Thermal resistance

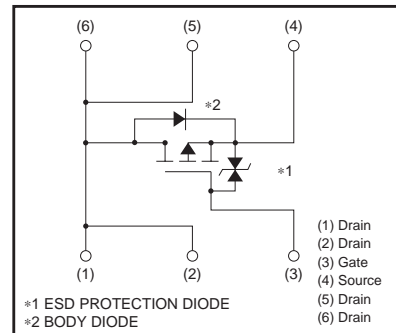
Parameter	Symbol	Limits	Unit
Channel to ambient	R _{th (ch-a)} *	125	°C / W

* When mounted on a ceramic board.

●Dimensions (Unit : mm)



●Inner circuit



●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}	-12	-	-	V	I _D =-1mA, V _{GS} =0V
Zero gate voltage drain current	I _{DSS}	-	-	-1	μA	V _{DS} =-12V, V _{GS} =0V
Gate threshold voltage	V _{GS(th)}	-0.3	-	-1.0	V	V _{DS} =-6V, I _D =-1mA
Static drain-source on-state resistance	R _{DS(on)} *	-	26	36	mΩ	I _D =-3.5A, V _{GS} =-4.5V
		-	36	50	mΩ	I _D =-1.7A, V _{GS} =-2.5V
		-	46	69	mΩ	I _D =-1.7A, V _{GS} =-1.8V
		-	66	132	mΩ	I _D =-0.7A, V _{GS} =-1.5V
Forward transfer admittance	Y _{fs} *	5.5	-	-	S	V _{DS} =-6V, I _D =-3.5A
Input capacitance	C _{iss}	-	1940	-	pF	V _{DS} =-6V
Output capacitance	C _{oss}	-	260	-	pF	V _{GS} =0V
Reverse transfer capacitance	C _{rss}	-	240	-	pF	f=1MHz
Turn-on delay time	t _{d(on)} *	-	10	-	ns	V _{DD} ≐-6V
Rise time	t _r *	-	50	-	ns	I _D =-1.7A V _{GS} =-4.5V
Turn-off delay time	t _{d(off)} *	-	350	-	ns	R _L ≐3.5Ω
Fall time	t _f *	-	180	-	ns	R _G =10Ω
Total gate charge	Q _g *	-	20	-	nC	V _{DD} ≐-6V, I _D =-3.5A
Gate-source charge	Q _{gs} *	-	3.5	-	nC	V _{GS} =-4.5V
Gate-drain charge	Q _{gd} *	-	3.0	-	nC	R _L ≐1.7Ω, 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 =-3.5A, V _{GS} =0V

* Pulsed

●Electrical characteristics curves

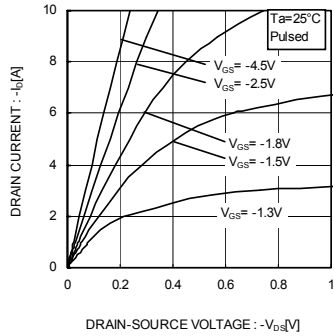


Fig.1 Typical output characteristics (I)

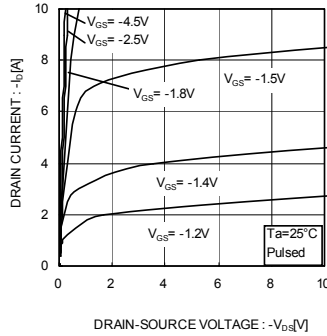


Fig.2 Typical output characteristics(II)

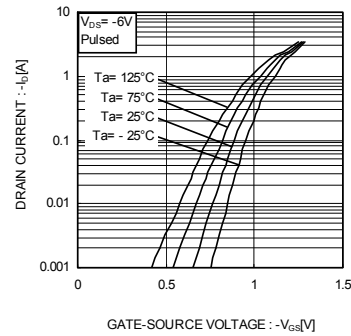


Fig.3 Typical Transfer Characteristics

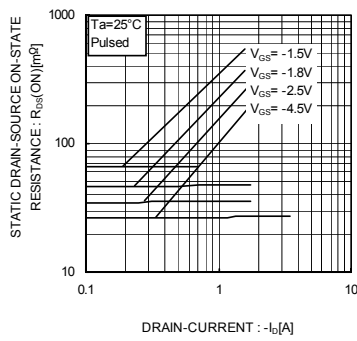


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(I)

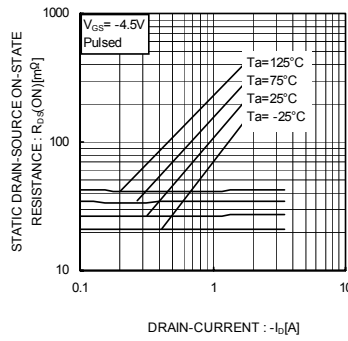


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(II)

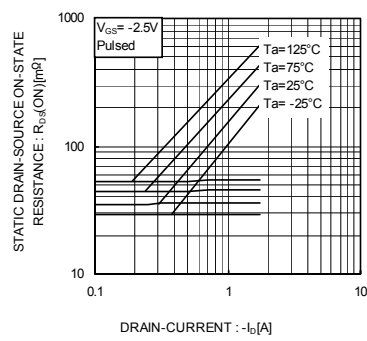


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(III)

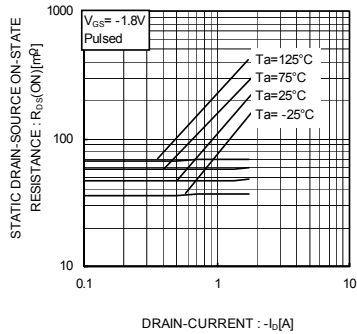


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current(IV)

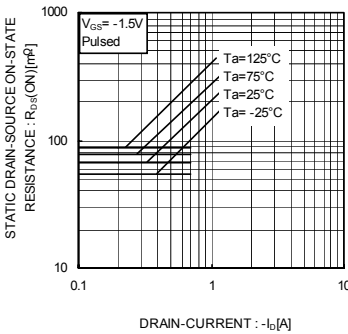


Fig.8 Static Drain-Source On-State Resistance vs. Drain Current(V)

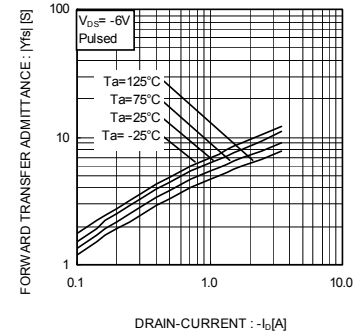


Fig.9 Forward Transfer Admittance vs. Drain Current

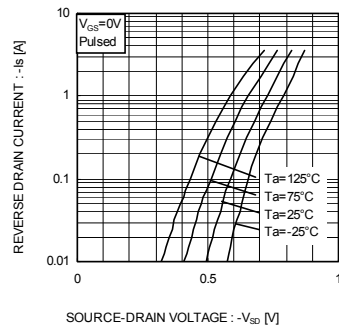


Fig. 10 Reverse Drain Current vs. Source-Drain Voltage

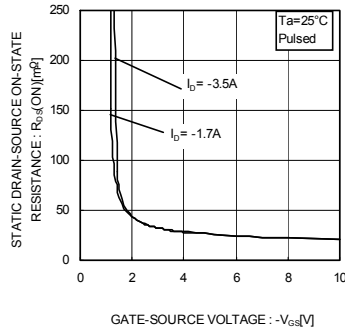


Fig. 11 Static Drain-Source On-State Resistance vs. Gate Source Voltage

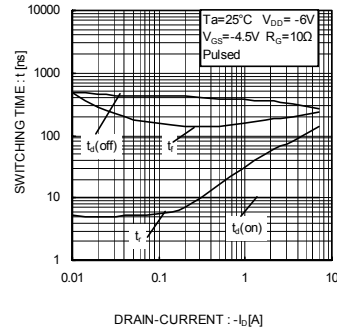


Fig. 12 Switching Characteristics

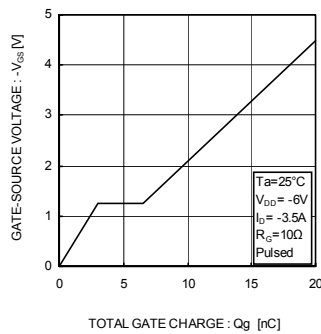


Fig. 13 Dynamic Input Characteristics

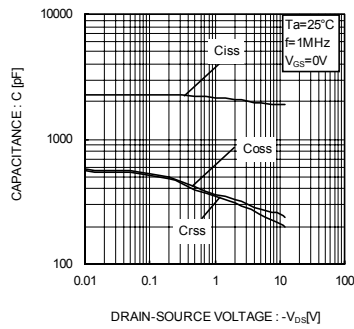


Fig. 14 Typical Capacitance vs. Drain-Source Voltage

● Measurement circuits

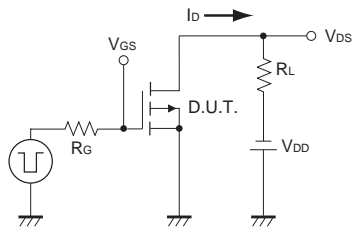


Fig. 1-1 Switching Time Measurement Circuit

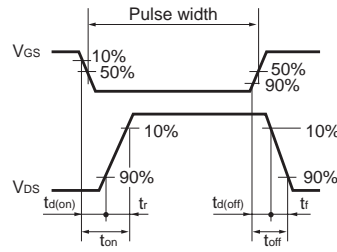


Fig. 1-2 Switching Waveforms

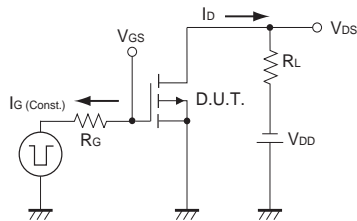


Fig. 2-1 Gate Charge Measurement Circuit

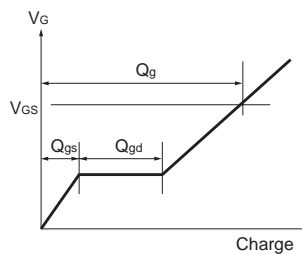


Fig. 2-2 Gate Charge Waveform

● 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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