RCR1514ESH

N-Channel Enhancement Mode Field Effect Transistor

- **Features**

·Low On-Resistance

·Fast Switching Speed

·Low-voltage drive

·Easily designed drive circuits

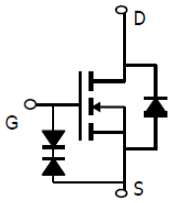
·ESD Protected

- **Pin Configurations**

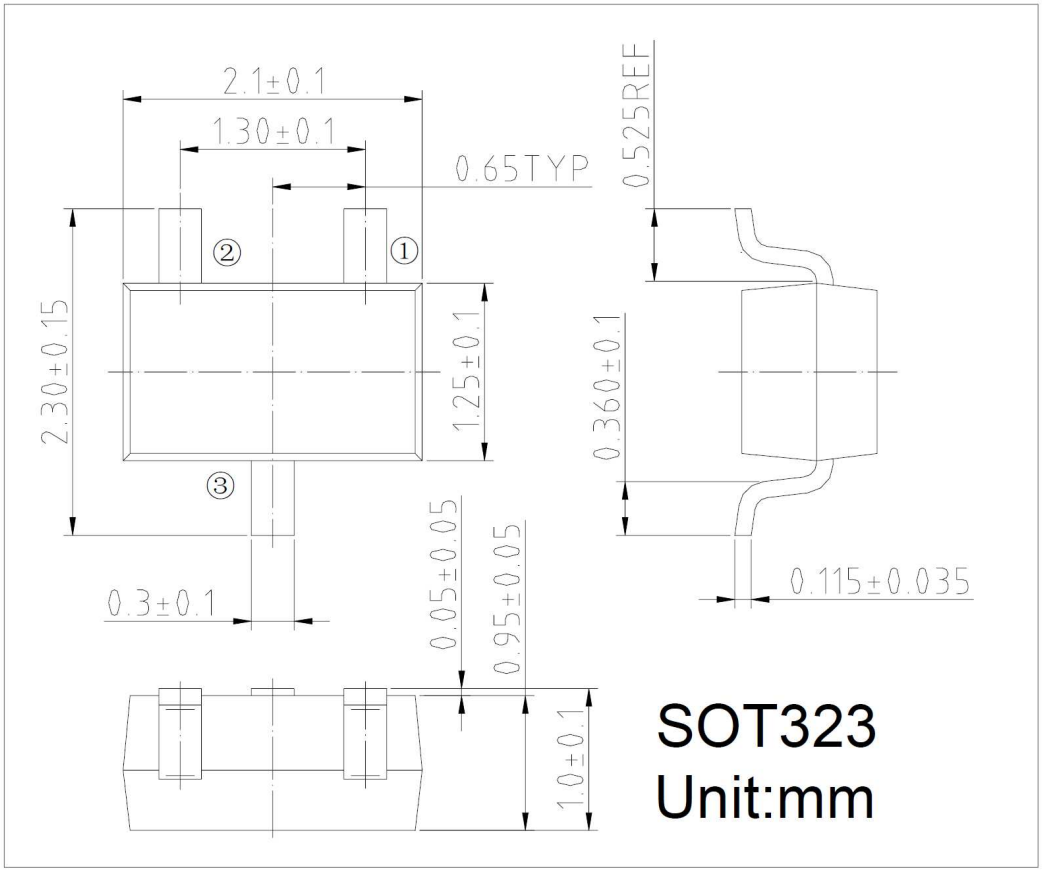
①:G

②:S

③:D



- **Package Information**



- **Absolute Maximum Ratings** @T_A=25℃ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V

Drain Current (Continuous)	T_A=25°C	I_D	200	mA
Drain Current (Pulse)		I_{DM}*1	800	mA
Power Dissipation	T_A=25°C	P_D*2	200	mW
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	℃

*1 Pw ≦10 μs, Duty cycle ≦1 %

*2 When mounted on a 1*0.75*0.062 inch glass epoxy board

- **Electrical Characteristics** @T_A=25℃ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D=10μA	60	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 60V, V_{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=3V, I_{DS}=100μA	0.8	1.4	2	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±1	μA
Drain-Source On-state Resistance	$R_{DS(on)}$	V_{GS} =4V, I_D=10mA	--	5	8	Ω
		V_{GS} =2.5V, I_D=1mA	--	7	13	Ω
Forward Transconductance	g_{FS}*	V_{DS}=3V, I_D=10mA	--	20	--	mS
Switching						
Turn-on Delay Time	$t_{d(on)}$ *	I_D=10mA,V_{DS} = 5V,	--	15	--	ns
Turn-off Delay Time	$t_{d(off)}$ *	V_{GS}=5V,R_L=500Ω, R_G=10Ω	--	80	--	ns
Dynamic						
Input Capacitance	Ciss	V_{GS}=0V,V_{DS}=5V,f=1.0MHz	--	13	--	pF
Output Capacitance	Coss		--	9	--	pF
Reverse Transfer Capacitance	Crss		--	4	--	pF

*Pw ≦ 300 μs, Duty cycle ≦ 1%

- **Typical Performance Characteristics**

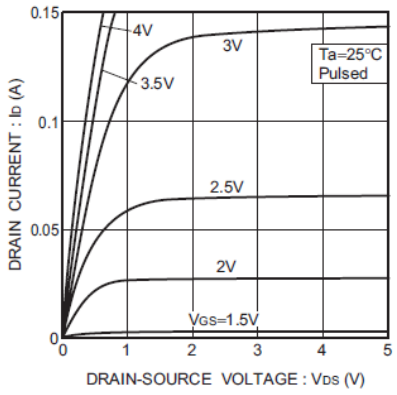


Fig.1 Typical output characteristics

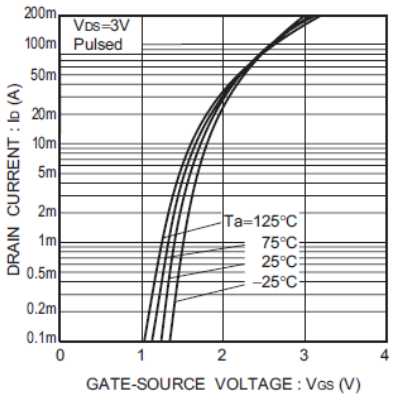


Fig.2 Typical transfer characteristics

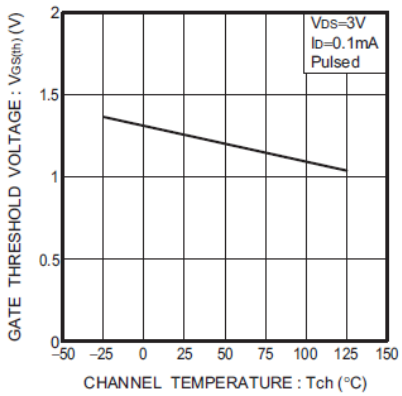


Fig.3 Gate threshold voltage vs. channel temperature

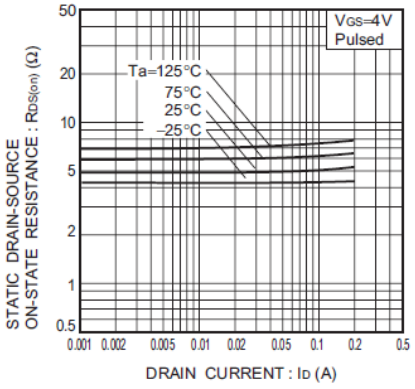


Fig.4 Static drain-source on-state resistance vs. drain current (I)

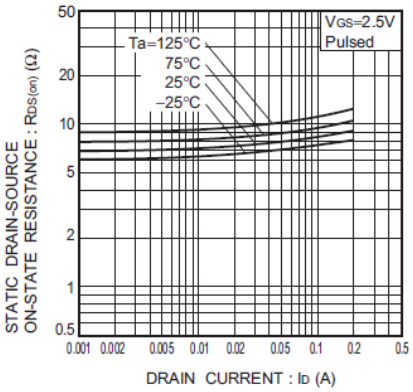


Fig.5 Static drain-source on-state resistance vs. drain current (II)

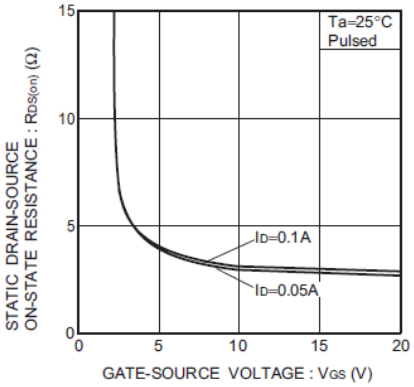


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

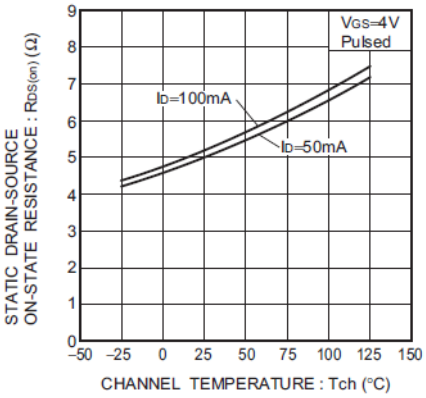


Fig.7 Static drain-source on-state resistance vs. channel temperature

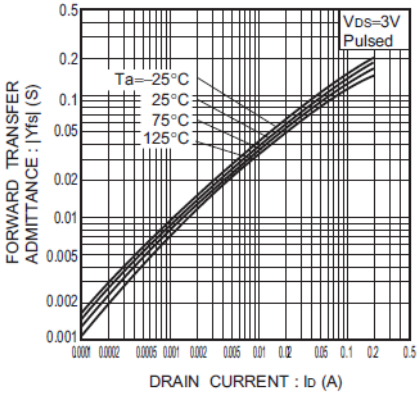


Fig.8 Forward transfer admittance vs. drain current

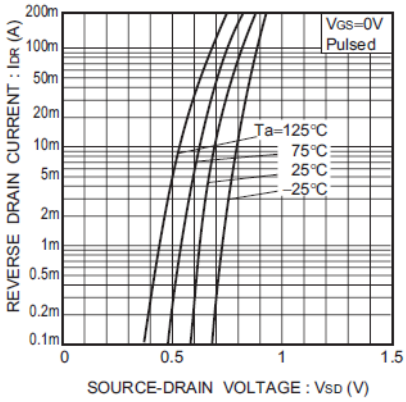


Fig.9 Reverse drain current vs. source-drain voltage (I)

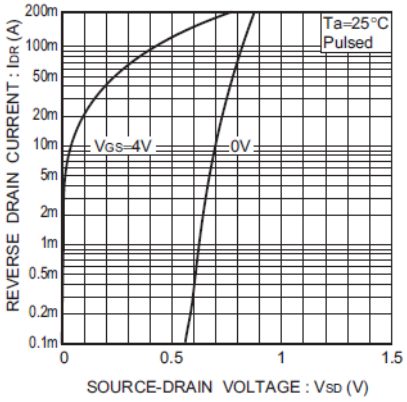


Fig.10 Reverse drain current vs. source-drain voltage (II)

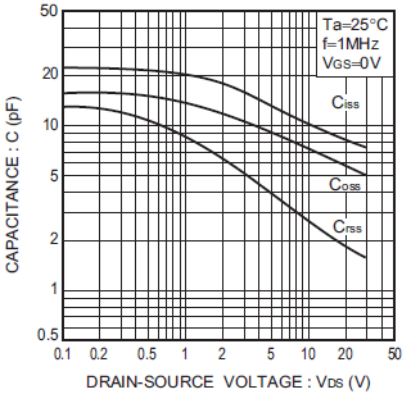


Fig.11 Typical capacitance vs. drain-source voltage

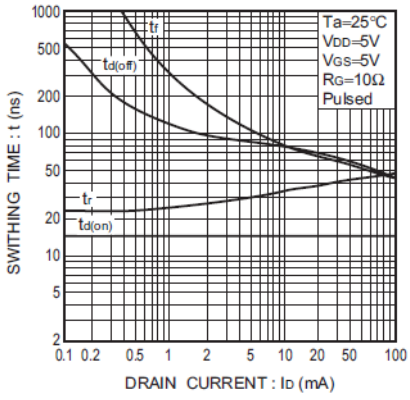


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

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