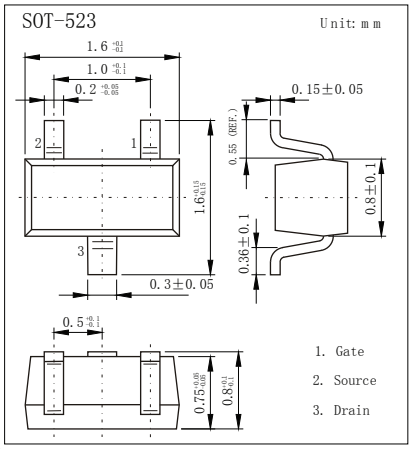
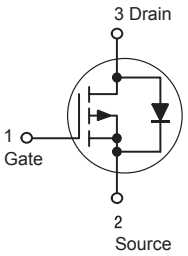
P-Channel MOSFET

2SJ3501



■ Features

- $V_{DS\ (V)}$ = -50V
- I_D =-130 mA
- $R_{DS(ON)}$ < 10Ω (V_{GS} =-5 V)



■ Absolute Maximum Ratings (Ta = 25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current @ T_A = 25°C	I_D	-130	mA
Pulsed Drain Current (tp ≤ 10 μs)	I_{DM}	-520	
Power Dissipation	P_D	150	mW
Thermal Resistance.Junction- to-Ambient	R_{thJA}	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

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■ Electrical Characteristics (Ta = 25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-50			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-25V, V_{GS}=0V			-0.1	μA
		V_{DS}=-50V, V_{GS}=0V			-15	
		V_{DS}=-50V, V_{GS}=0V, T_J=125℃			-60	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-0.8		-2.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-5V, I_D=-100mA			10	Ω
Forward Transconductance	g_{FS}	V_{DS}=-25V, I_D=-100mA, f=1.0kHz	50			mS
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-5V		30		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			5		
Gate Charge	Q_T			6000		pC
Turn-On DelayTime	$t_{d(on)}$	V_{DD} = –15 V, I_D = –2.5 A,R_L = 50Ω		2.5		ns
Turn-On Rise Time	t_r			1		
Turn-Off DelayTime	$t_{d(off)}$			16		
Turn-Off Fall Time	t_f			8		
Maximum Body-Diode Continuous Current	I_S				-0.13	A
Pulsed Current	I_{SM}				-0.52	
Diode Forward Voltage (Note 2.)	V_{SD}	I_S=-0.13A,V_{GS}=0V			-1.2	V

Note 1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

2. Switching characteristics are independent of operating junction temperature.

■ Marking

Marking	PD

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■ Typical Characterisitics

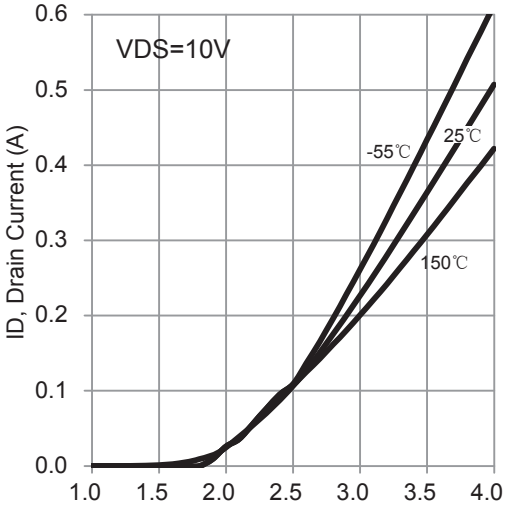

FIG.1 Transfer Characteristics

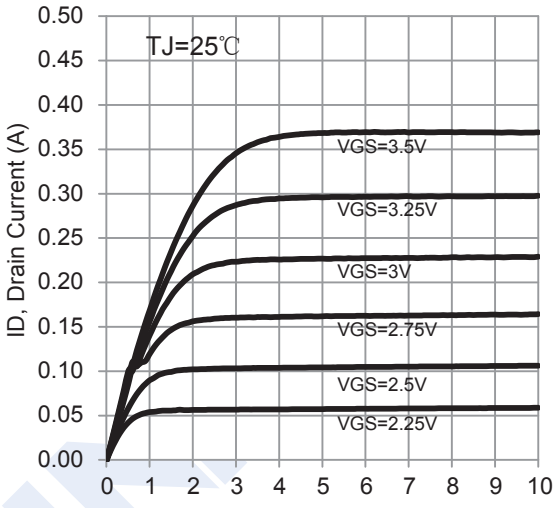

FIG.2 On-Region Characteristics

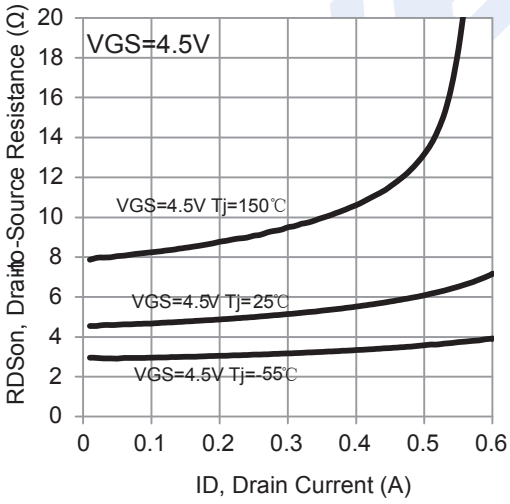

FIG.3 On-Resistance versus Drain Current

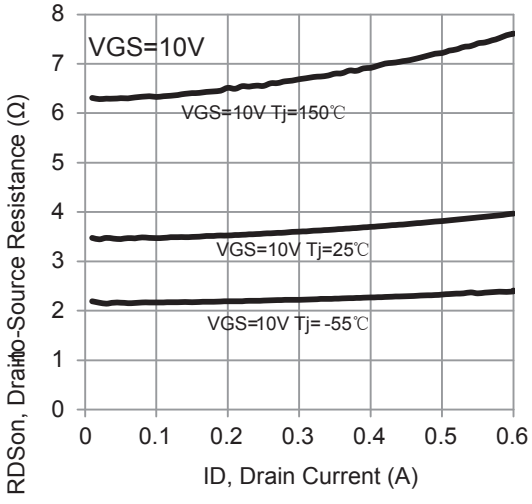

FIG.4 On-Resistance versus Drain Current

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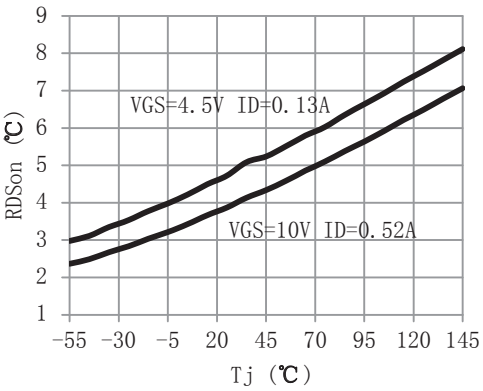

FIG.5 On-Resistance Variation with Temperature

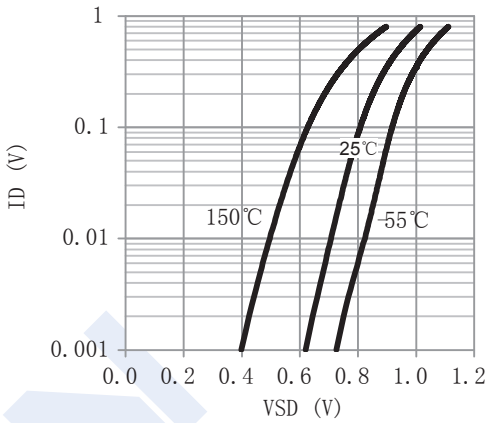

FIG.6 Body Diode Forward Voltage