



ON Semiconductor®

ON Semiconductor DATA SHEET

5LP01M — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-50	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-0.07	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-0.28	A
Allowable Power Dissipation	P _D		0.15	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =-1mA, V _{GS} =0V	-50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-50V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-40mA	70	100		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-40mA, V _{GS} =-4V		18	23	Ω
	R _{DS(on)2}	I _D =-20mA, V _{GS} =-2.5V		20	28	Ω
	R _{DS(on)3}	I _D =-5mA, V _{GS} =-1.5V		30	60	Ω
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		7.4		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		4.2		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		1.3		pF

Marking : XB

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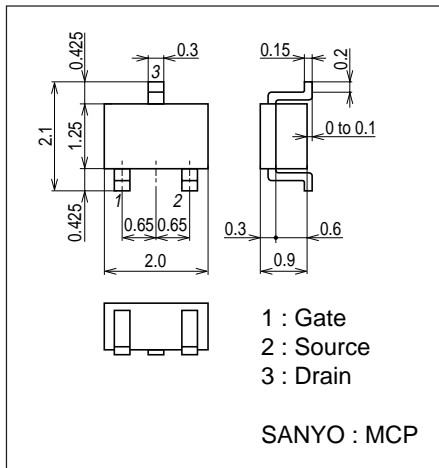
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		20		ns
Rise Time	t_r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		160		ns
Fall Time	t_f	See specified Test Circuit.		150		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		1.40		nC
Gate Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.16		nC
Gate Drain Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.23		nC
Diode Forward Voltage	V_{SD}	$I_S=-70mA, V_{GS}=0V$		-0.85	-1.2	V

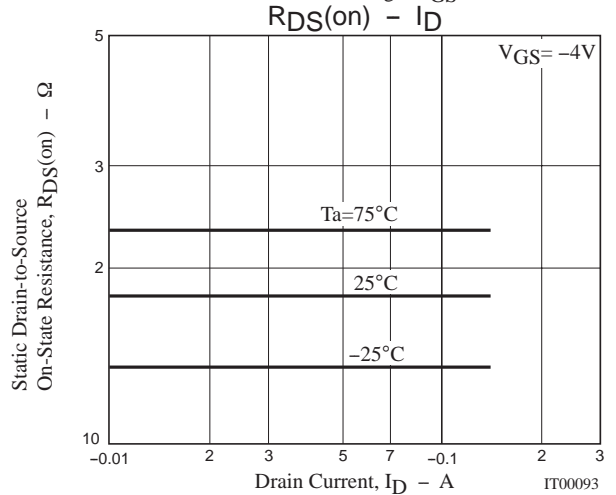
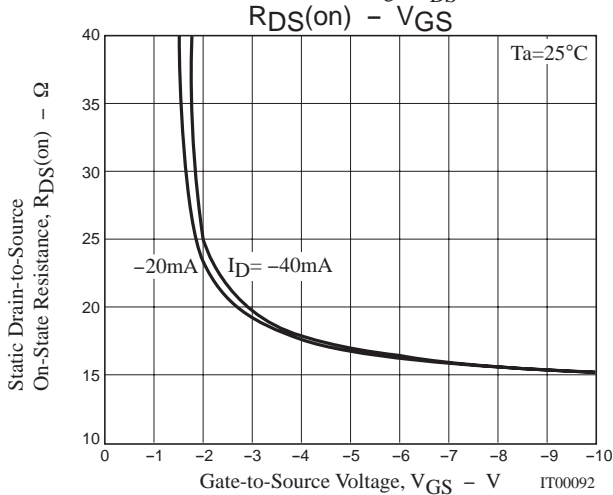
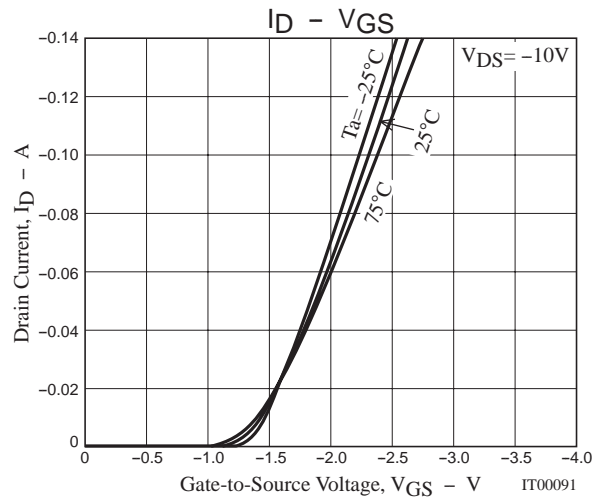
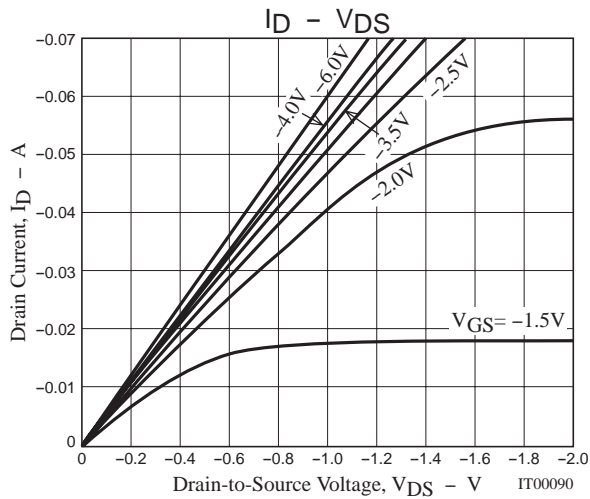
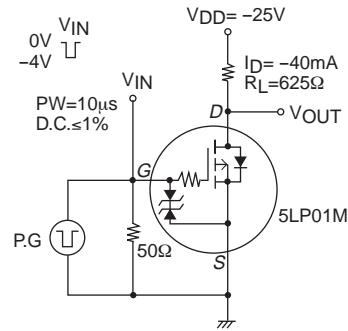
Package Dimensions

unit : mm

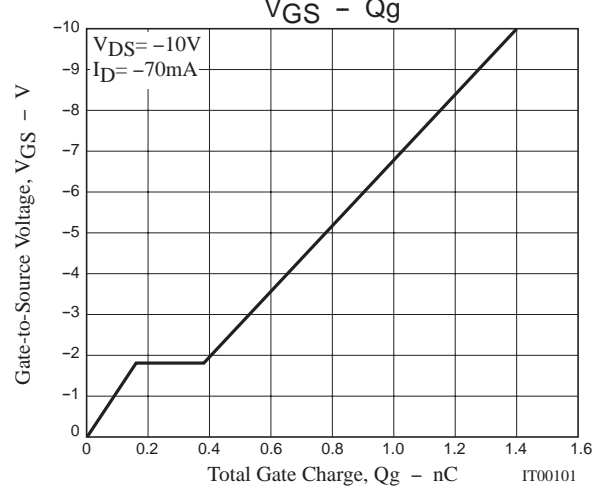
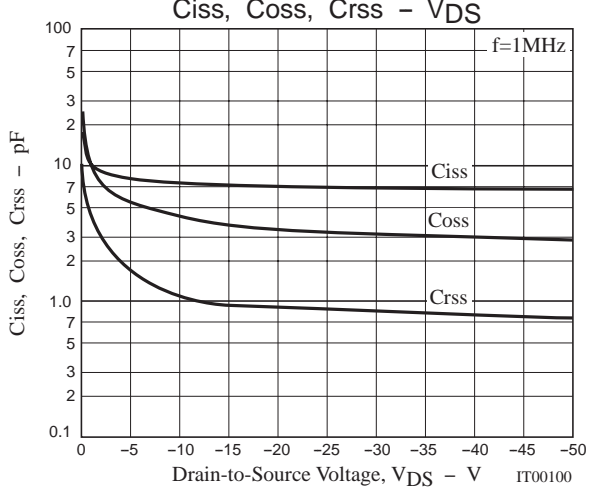
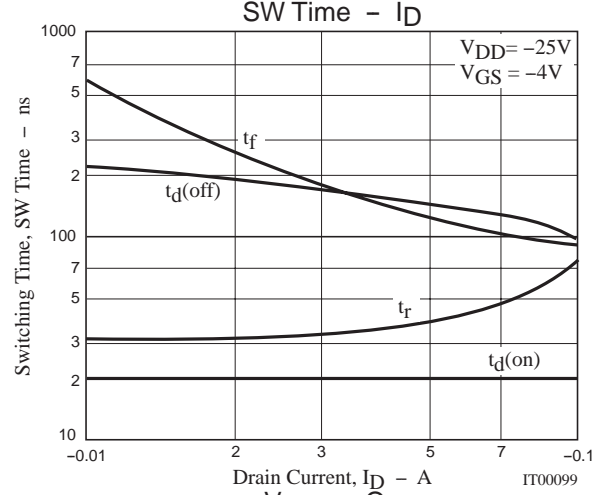
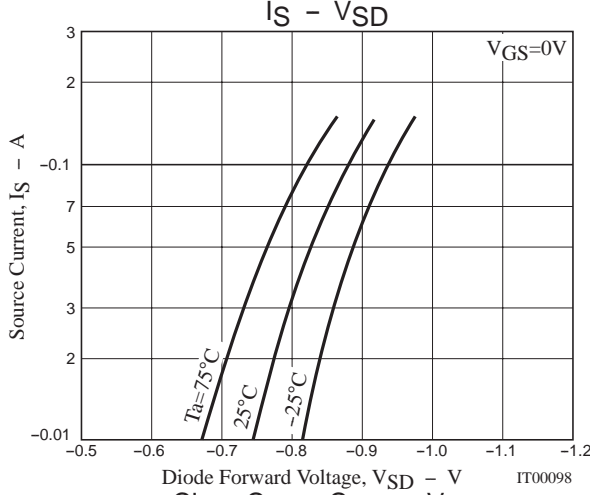
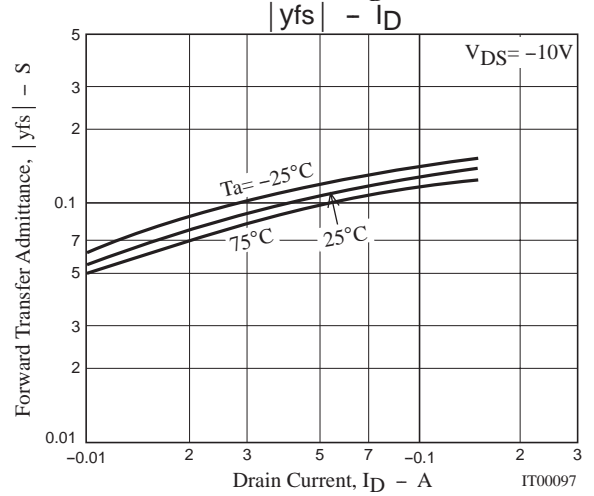
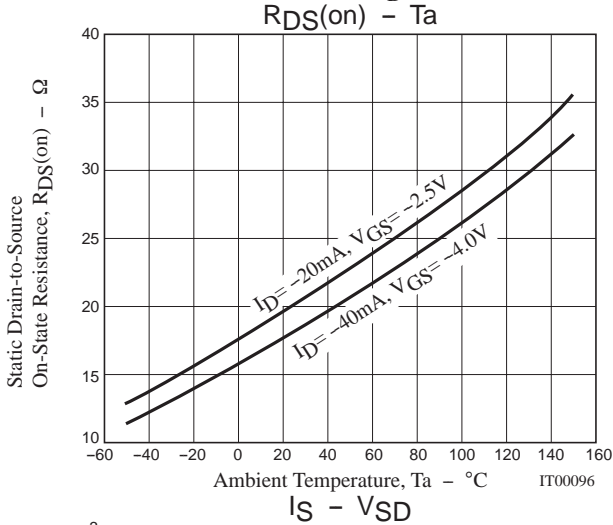
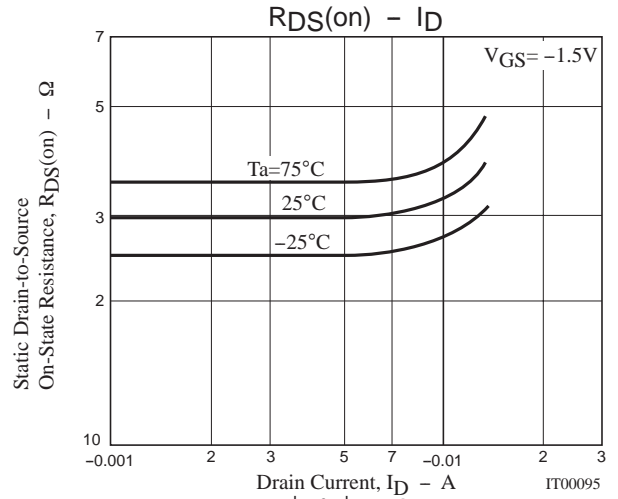
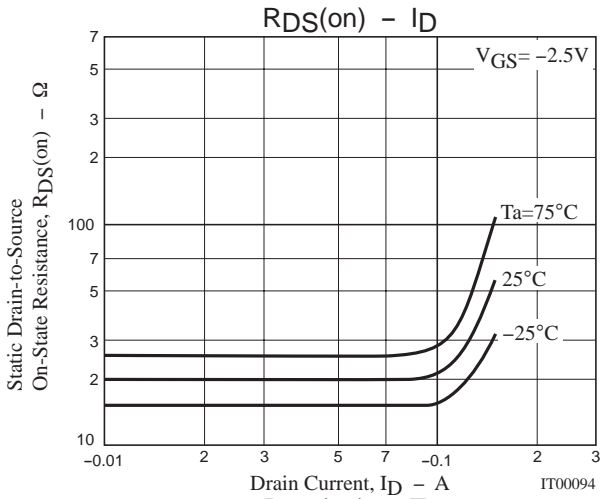
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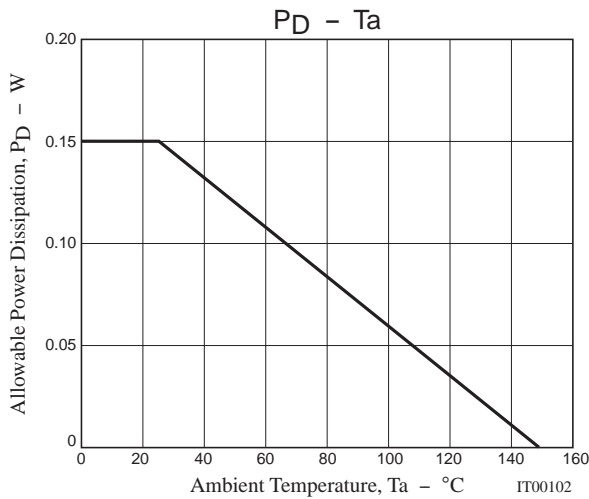
Switching Time Test Circuit



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