

Ordering number : ENN6666

P-Channel Silicon MOSFET



**5LP01S**

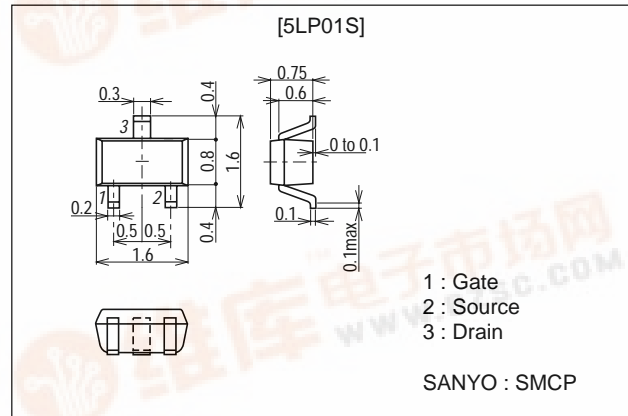
**Ultrahigh-Speed Switching Applications**

**Features**

- Low ON-resistance.
- Ultrahigh-Speed Switching.
- 2.5V drive.

**Package Dimensions**

unit : mm  
2124



**Specifications**

**Absolute Maximum Ratings** at Ta=25°C

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

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-50			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-50V, V <sub>GS</sub> =0			10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-40mA	70	100		mS

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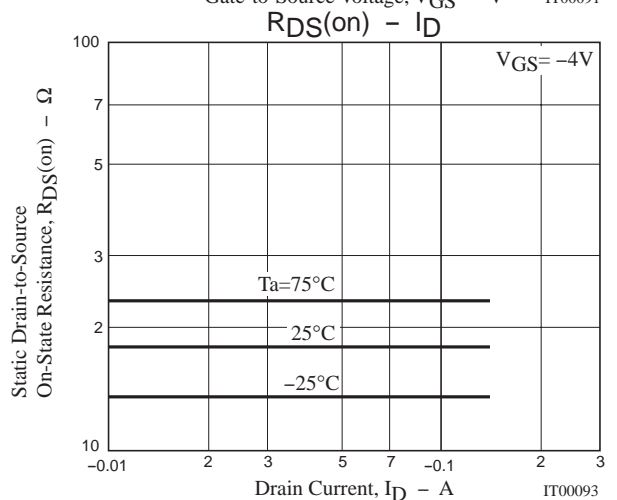
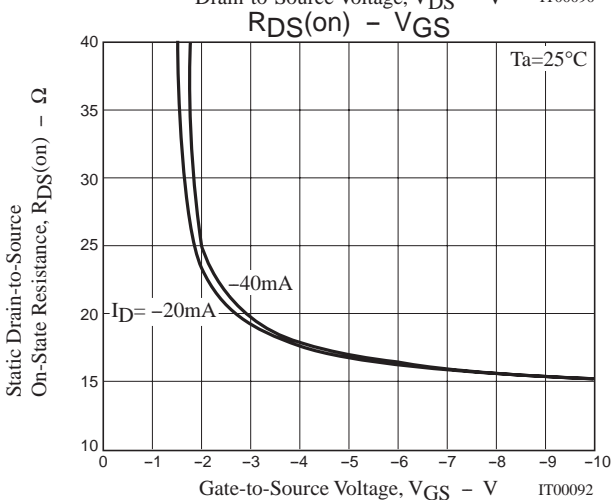
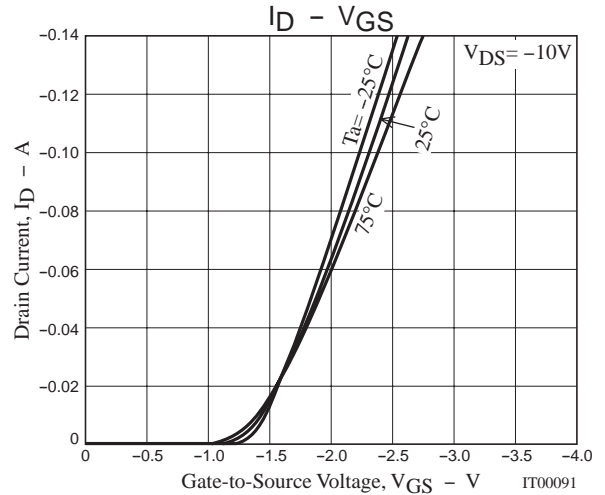
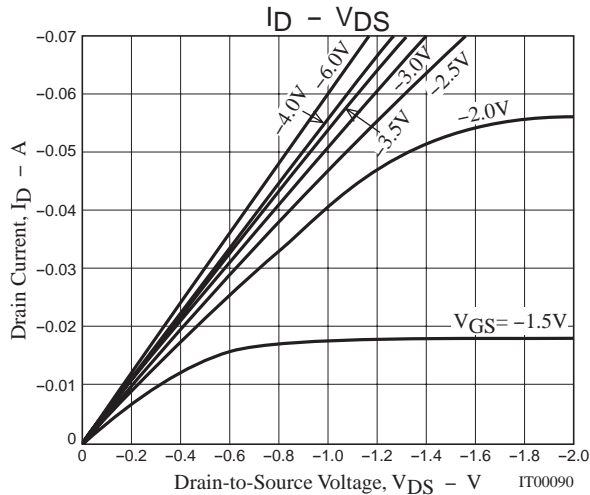
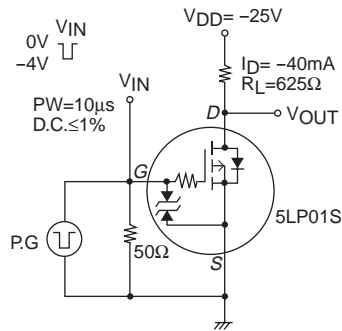
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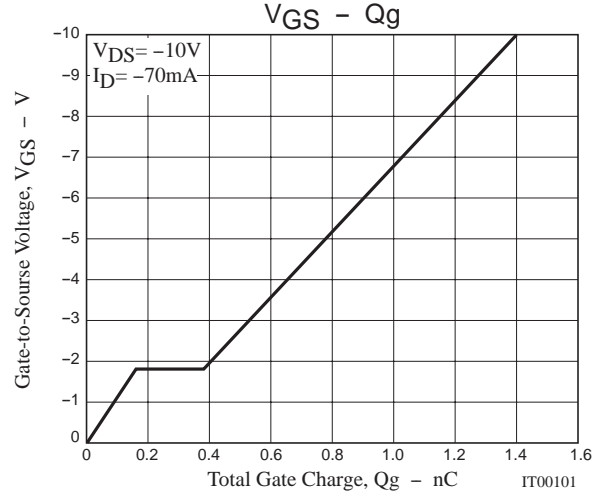
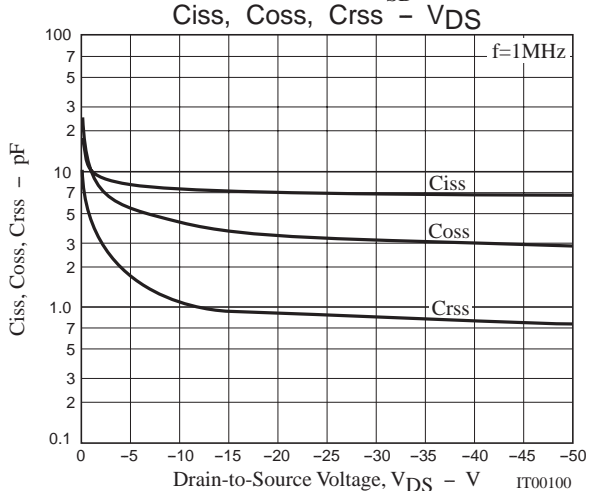
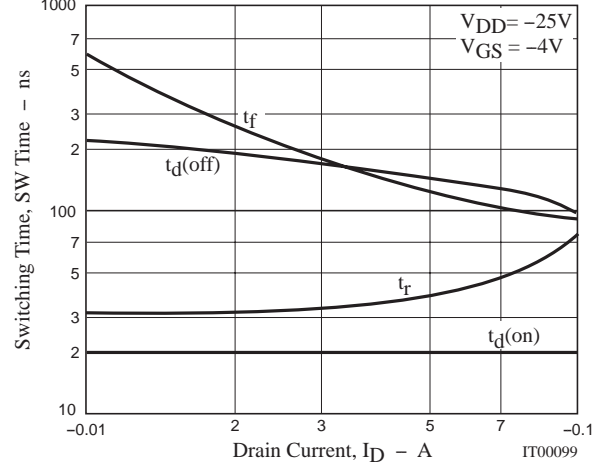
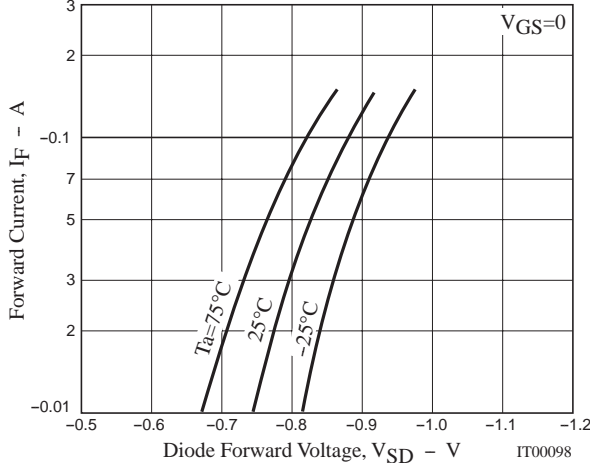
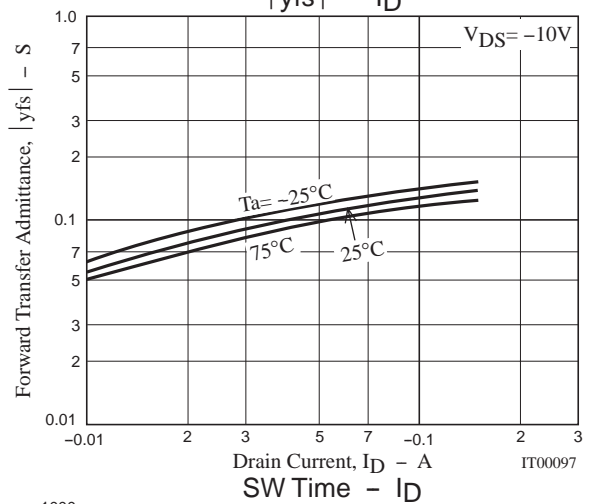
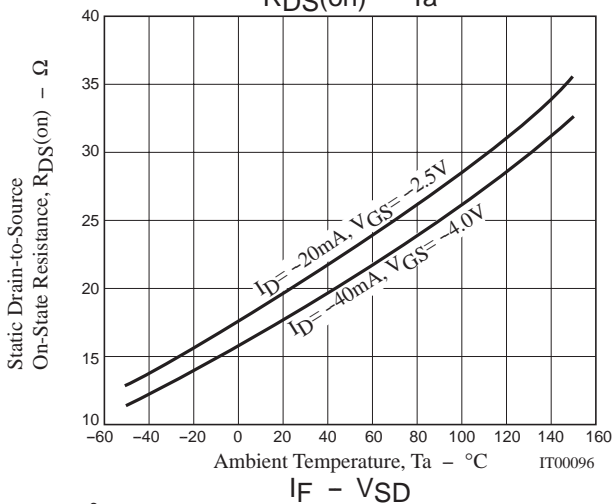
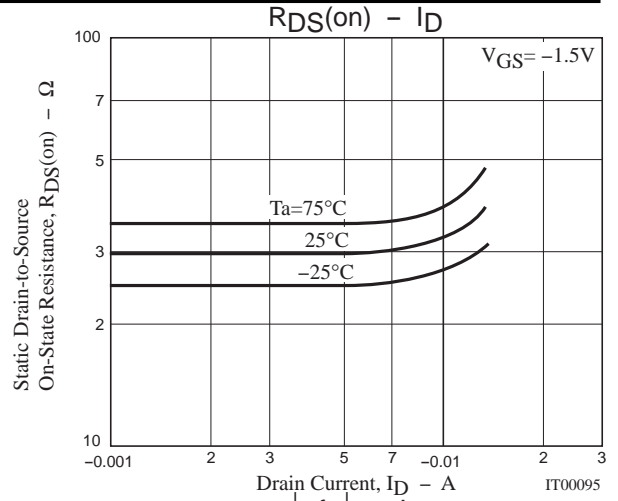
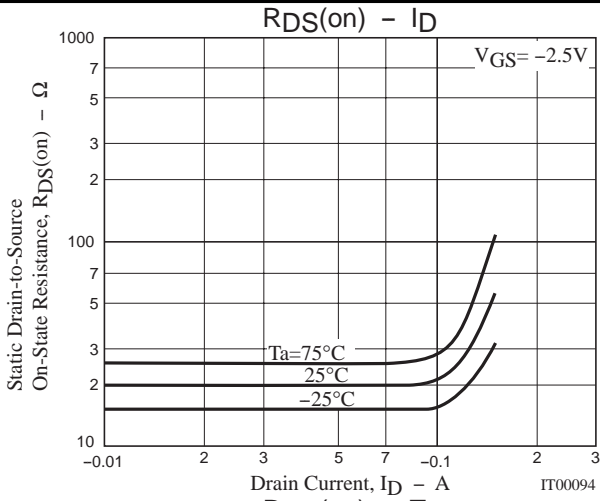
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-40mA, V <sub>GS</sub> =-4V		18	23	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-20mA, V <sub>GS</sub> =-2.5V		20	28	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-5mA, V <sub>GS</sub> =-1.5V		30	60	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		7.4		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		4.2		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		1.3		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		20		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		35		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		160		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		150		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		1.40		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		0.16		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		0.23		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-70mA, V <sub>GS</sub> =0		-0.85	-1.2	V

Marking : XB

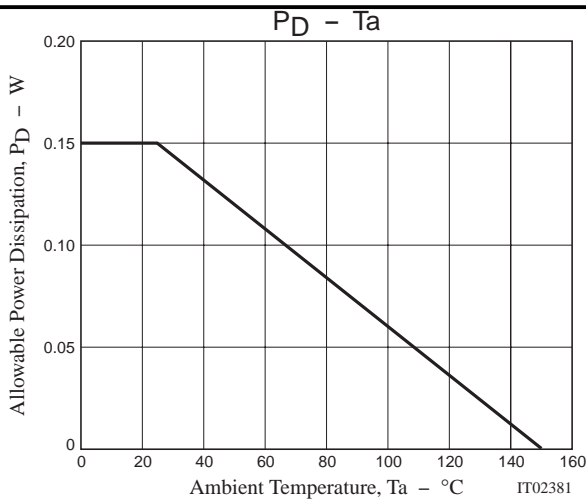
## Switching Time Test Circuit



# 5LP01S



## 5LP01S



Note on usage : Since the 5LP01S is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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