



## Ultrahigh-Speed Switching Applications

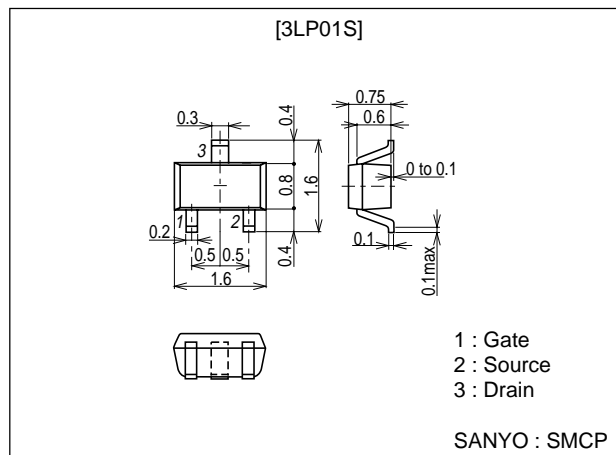
### Features

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

### Package Dimensions

unit : mm

2192



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-0.1	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-0.4	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	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, 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> =-50mA	80	110		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-50mA, V <sub>GS</sub> =-4V		8	10.4	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-30mA, V <sub>GS</sub> =-2.5V		11	15.4	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =-1.5V		27	54	Ω

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# 3LP01S

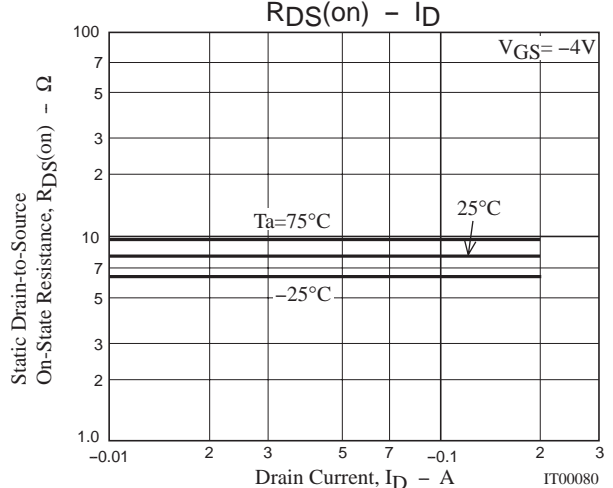
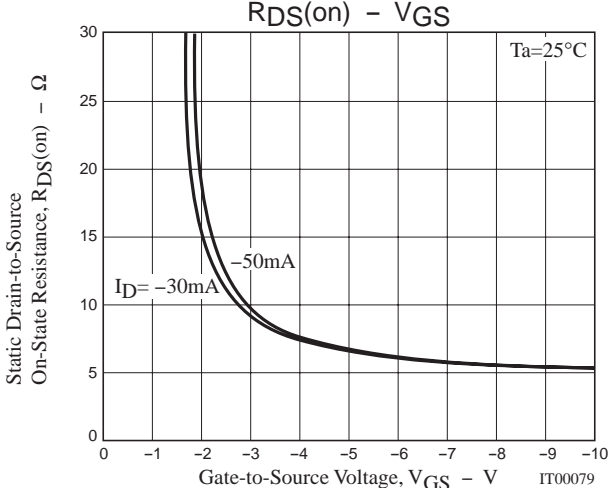
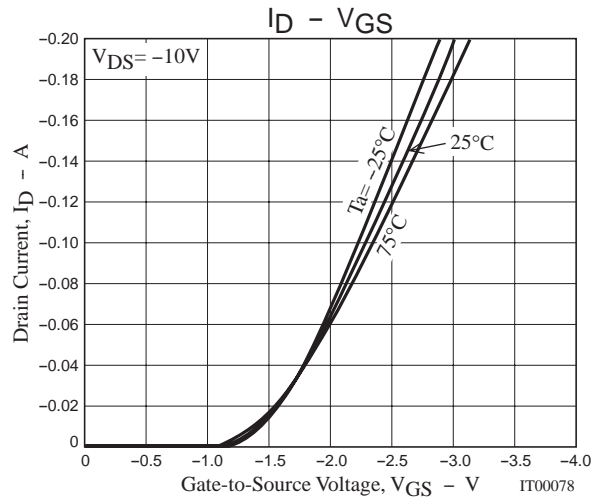
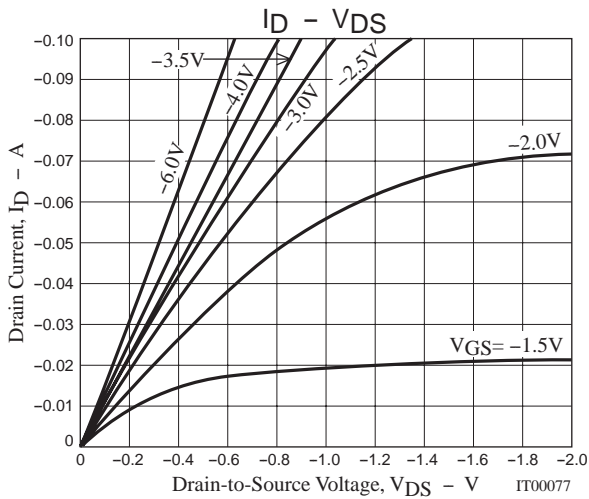
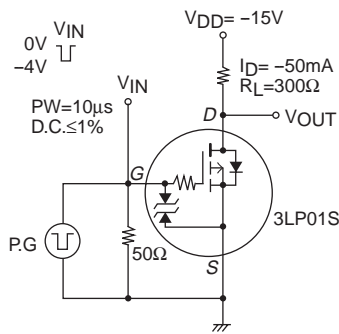
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		7.5		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		5.7		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		1.8		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		24		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		55		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		120		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		130		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-100mA		1.43		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-100mA		0.18		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-100mA		0.25		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-100mA, V <sub>GS</sub> =0	-0.83		-1.2	V

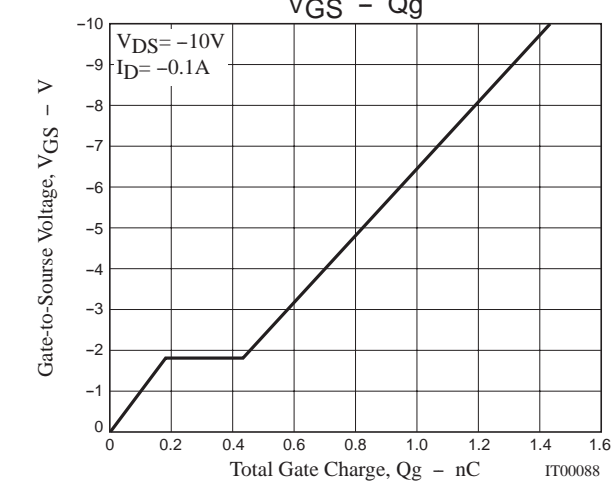
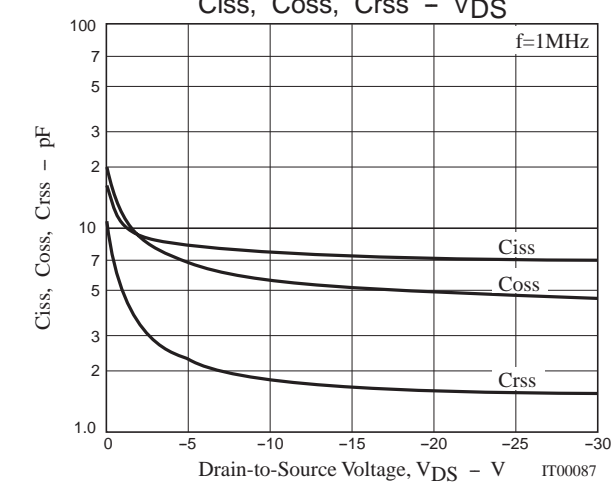
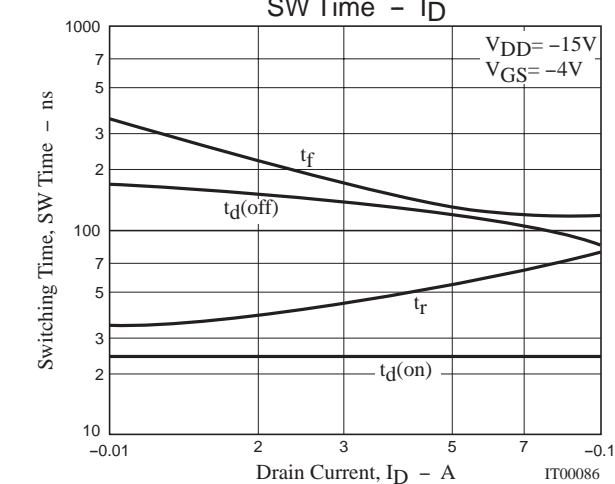
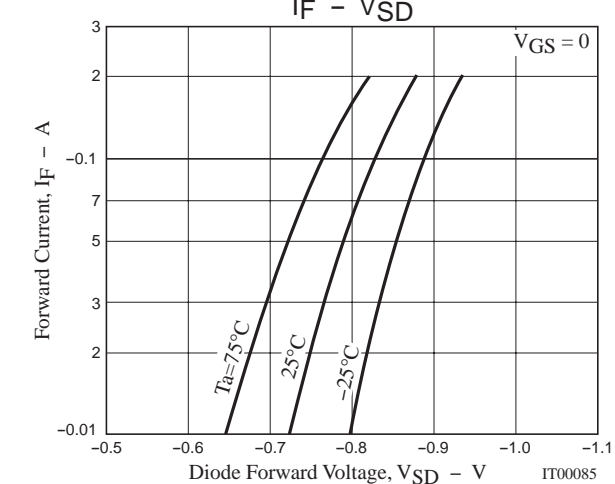
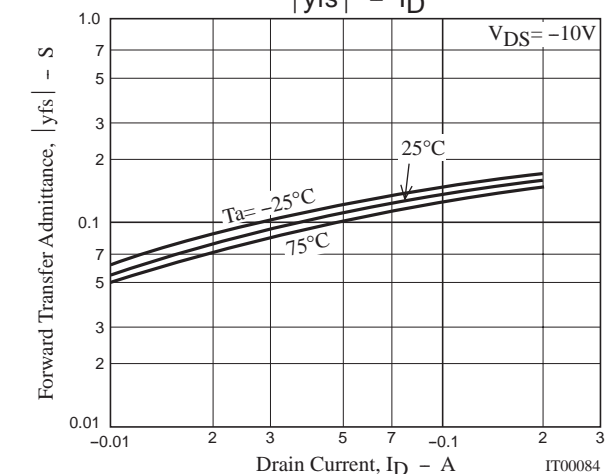
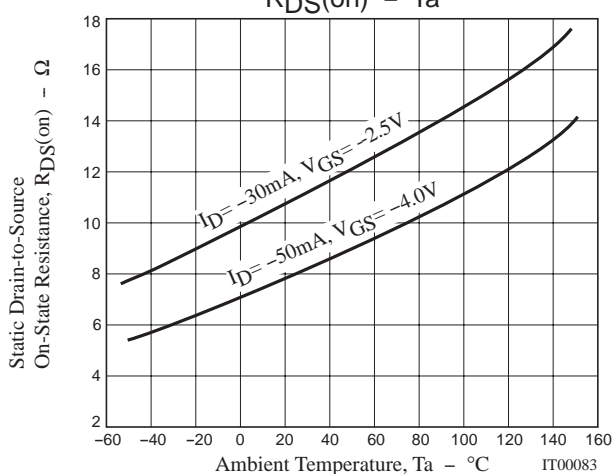
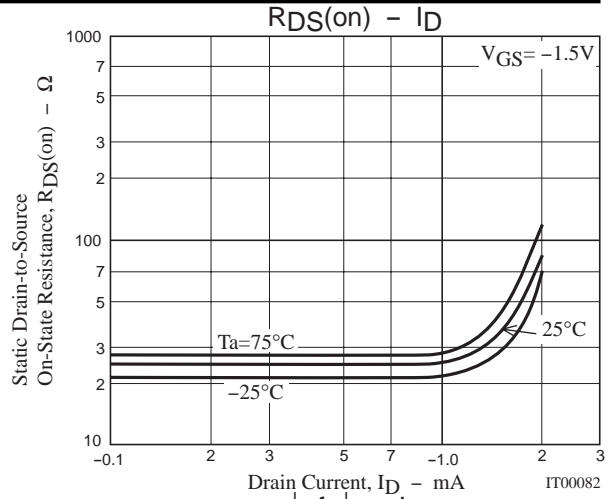
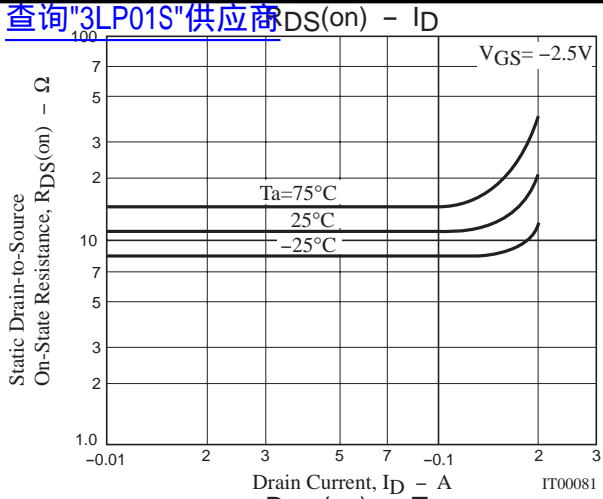
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## Switching Time Test Circuit

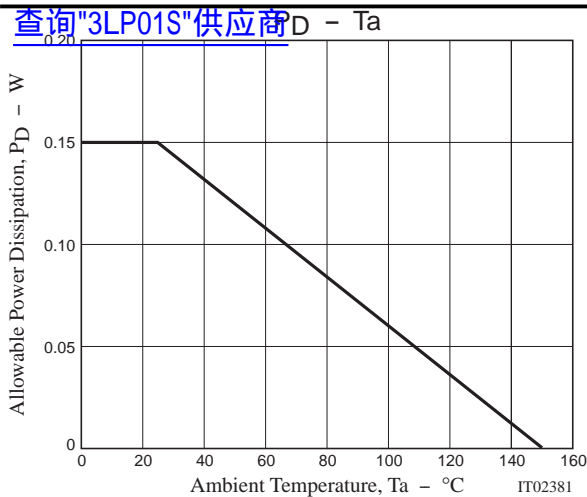


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## 3LP01S



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