

Ordering number : ENN6139

P-Channel Silicon MOSFET



# 3LP01M

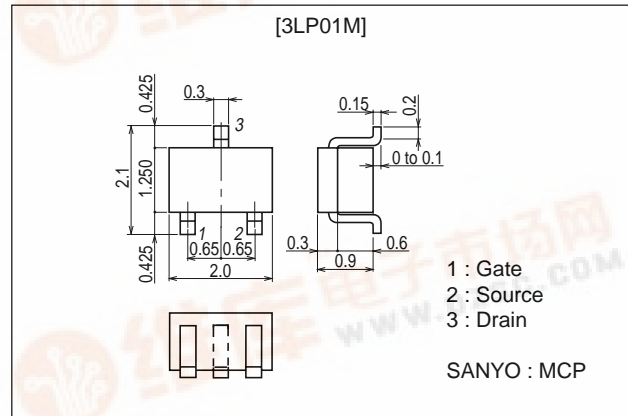
## Ultrahigh-Speed Switching Applications

### Features

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

### Package Dimensions

unit : mm  
2158



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		-0.1	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10 \mu s$ , duty cycle $\leq 1\%$	-0.4	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	$V_{(BR)DSS}$	$I_D = -1mA$ , $V_{GS} = 0$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-10	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -100 \mu A$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$ , $I_D = -50mA$	80	110		mS

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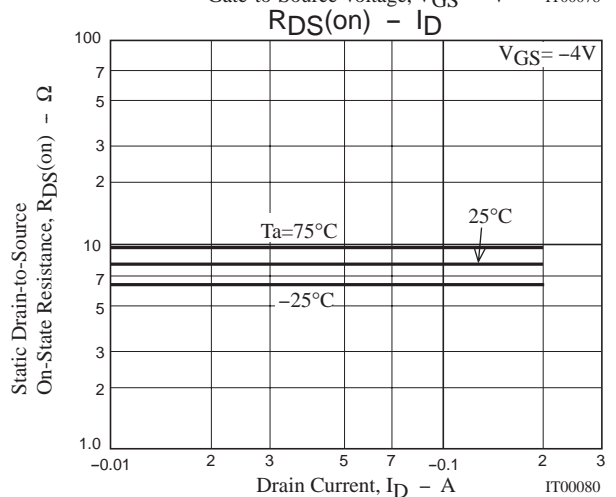
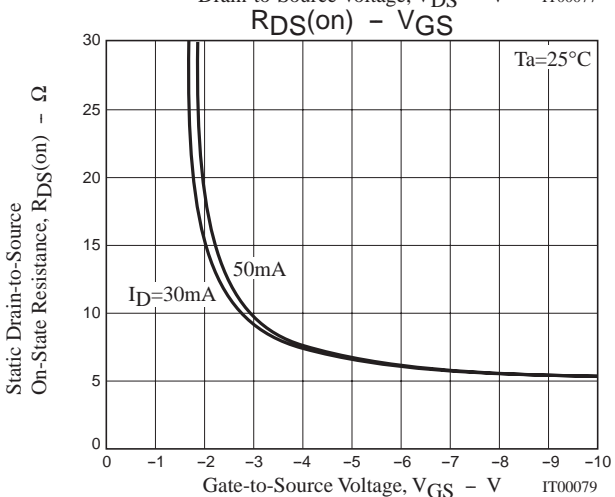
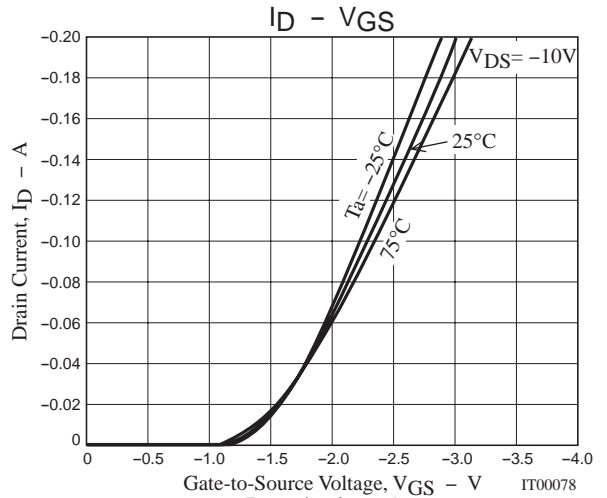
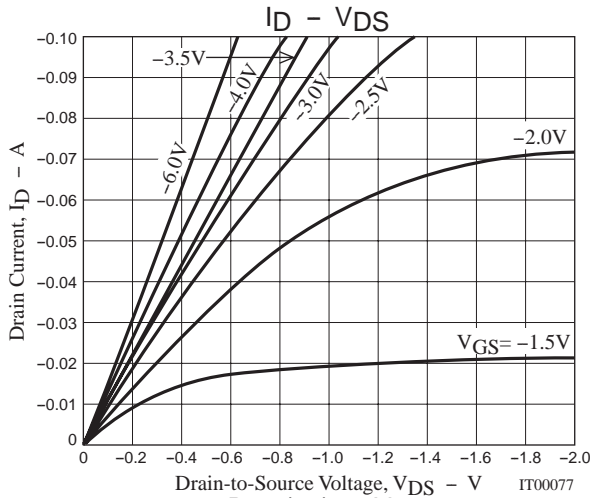
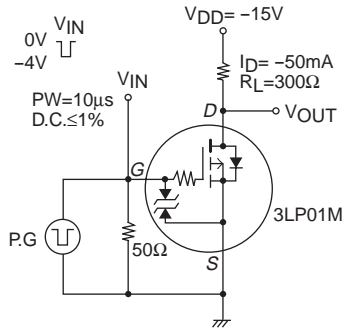
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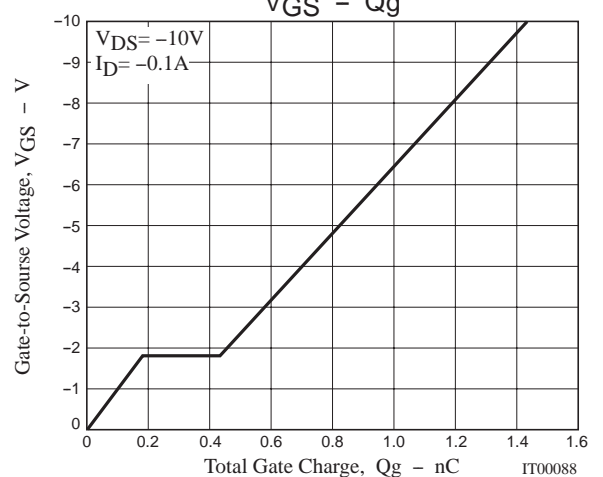
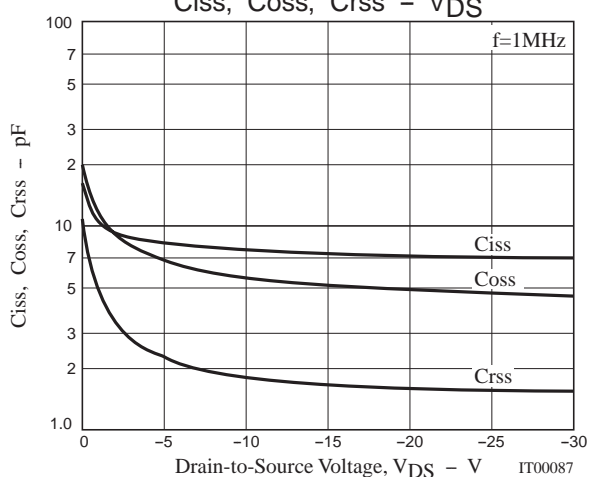
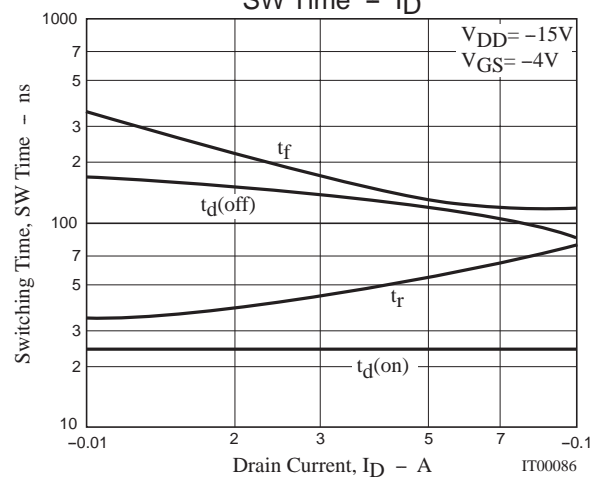
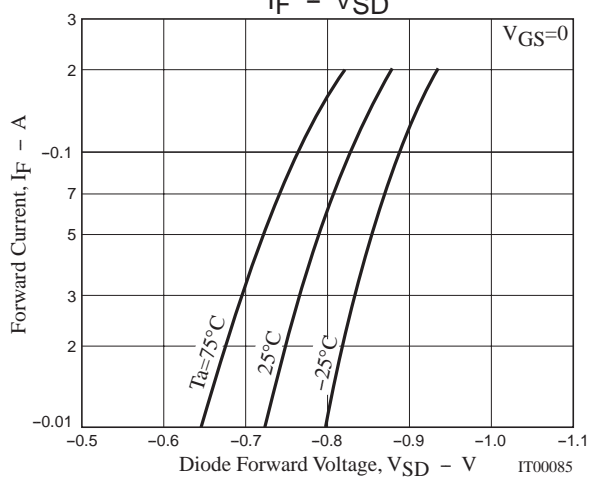
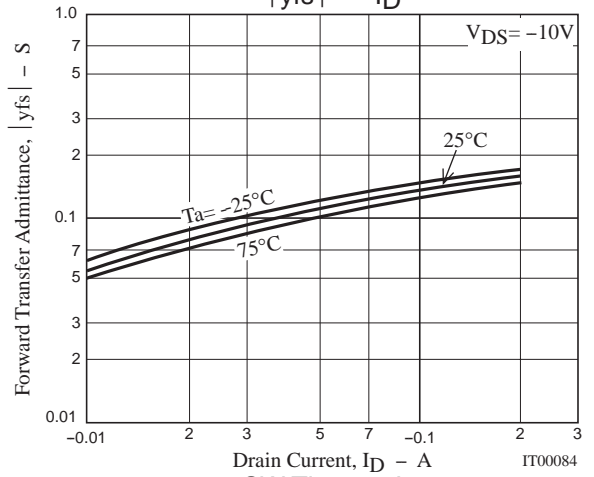
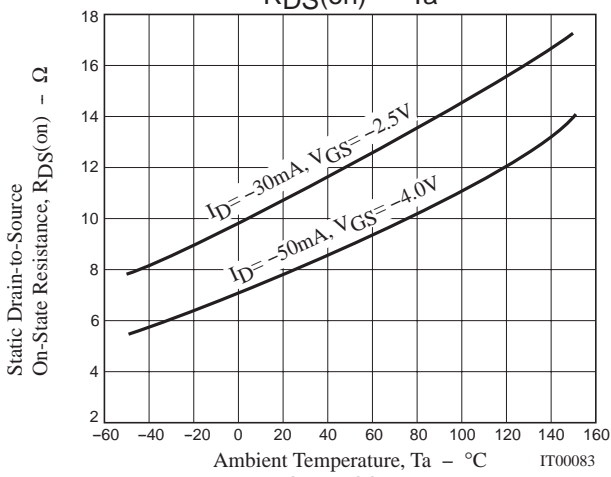
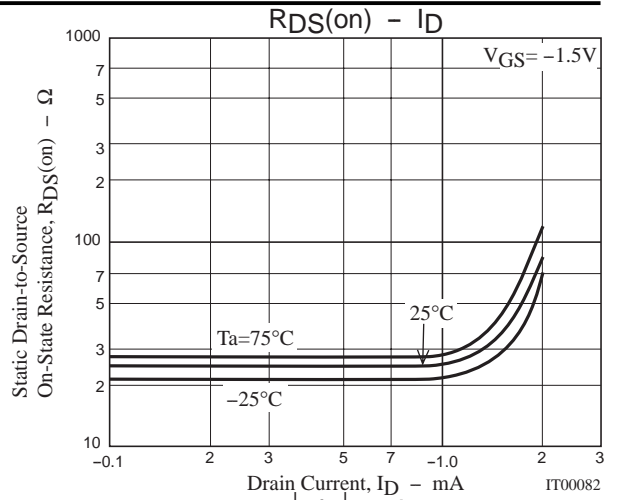
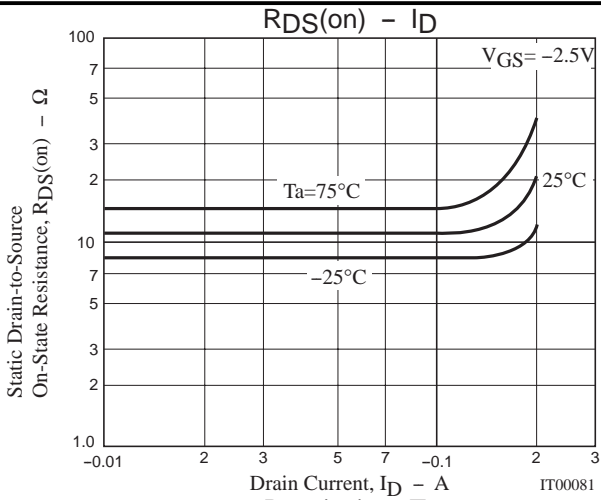
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-50mA, V <sub>GS</sub> =-4V		8	10.4	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-30mA, V <sub>GS</sub> =-2.5V		11	15.4	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =-1.5V		27	54	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		7.5		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		5.7		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	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

Marking : XA

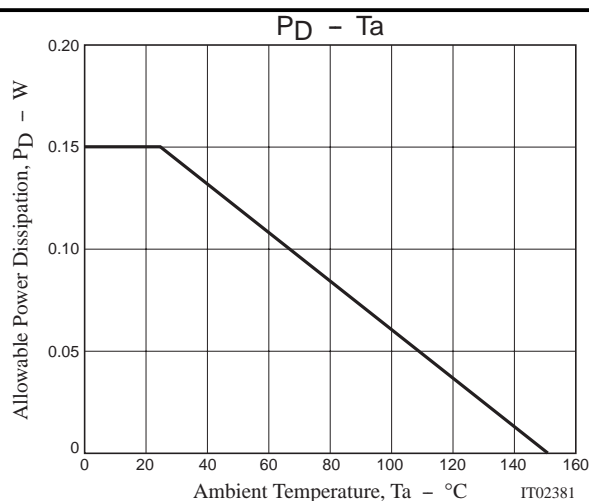
## Switching Time Test Circuit



# 3LP01M



## 3LP01M



Note on usage : Since the 3LP01M is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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