Ordering number : EN6135C

5LP01M

P-Channel Small Signal MOSFET
−50V, −0.07A, 23Ω, Single MCP

ON Semiconductor®
http://onsemi.com

Features

- Low ON-resistance
- Ultrahigh-speed switching
- 1.5V drive
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

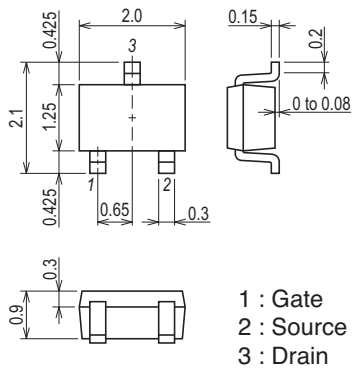
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		−50	V
Gate to Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		−0.07	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−0.28	A
Allowable Power Dissipation	P_D		0.15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

This product is designed to "ESD immunity < 200V*", so please take care when handling.
* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)
7023A-010



5LP01M-TL-E
5LP01M-TL-H

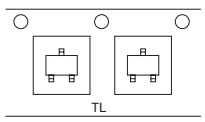
1 : Gate
2 : Source
3 : Drain

MCP

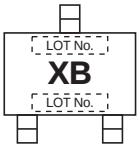
Ordering & Package Information

Device	Package	Shipping	memo
5LP01M-TL-E	MCP SC-70, SOT-323	3,000 pcs./reel	Pb-Free
5LP01M-TL-H	MCP SC-70, SOT-323	3,000 pcs./reel	Pb-Free and Halogen Free

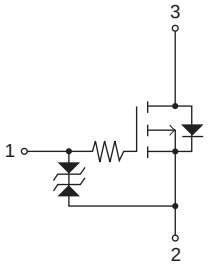
Packing Type: TL



Marking



Electrical Connection



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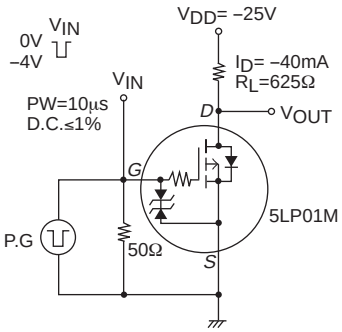
Electrical Characteristics at Ta=25°C

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	| yfs |	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	Ciss	V_{DS}= −10V, f=1MHz		7.4		pF
Output Capacitance	Coss			4.2		pF
Reverse Transfer Capacitance	Crss			1.3		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		20		ns
Rise Time	t_r			35		ns
Turn-OFF Delay Time	t_d(off)			160		ns
Fall Time	t_f			150		ns
Total Gate Charge	Qg	V_{DS}= −10V, V_{GS}= −10V, I_D= −70mA		1.40		nC
Gate to Source Charge	Qgs			0.16		nC
Gate to Drain “Miller” Charge	Qgd			0.23		nC
Diode Forward Voltage	V_{SD}	I_S= −70mA, V_{GS}=0V		−0.85	−1.2	V

Switching Time Test Circuit



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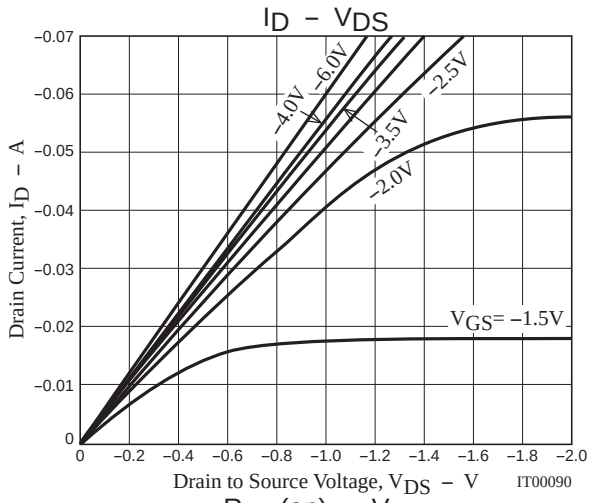

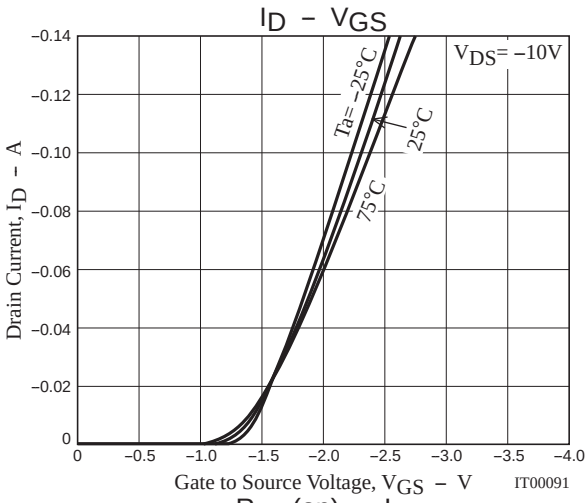

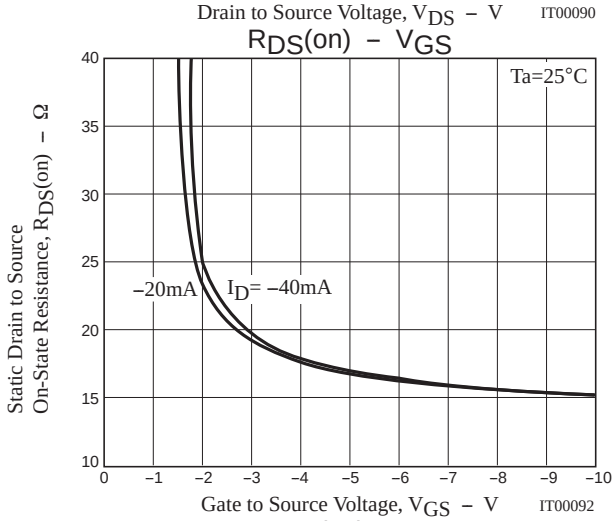

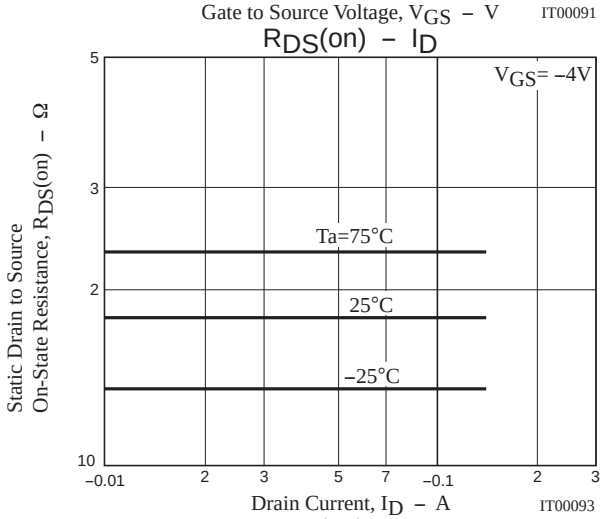

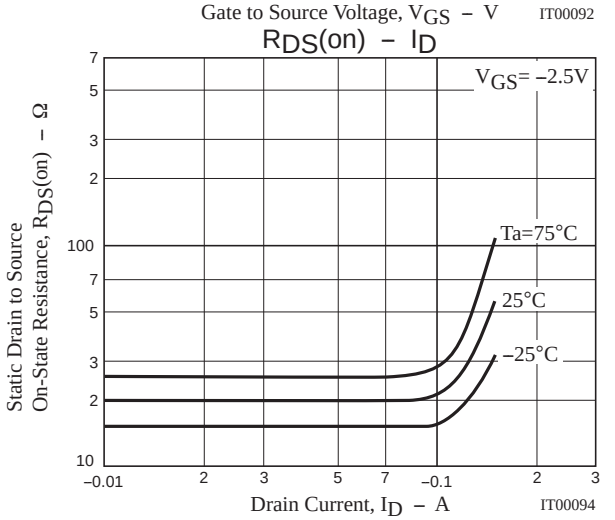

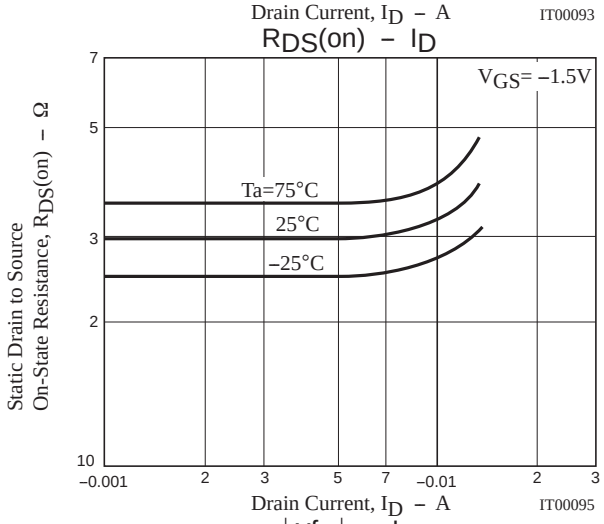

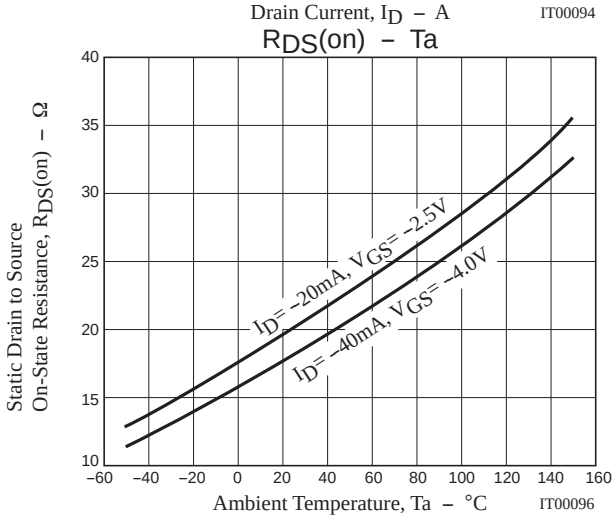

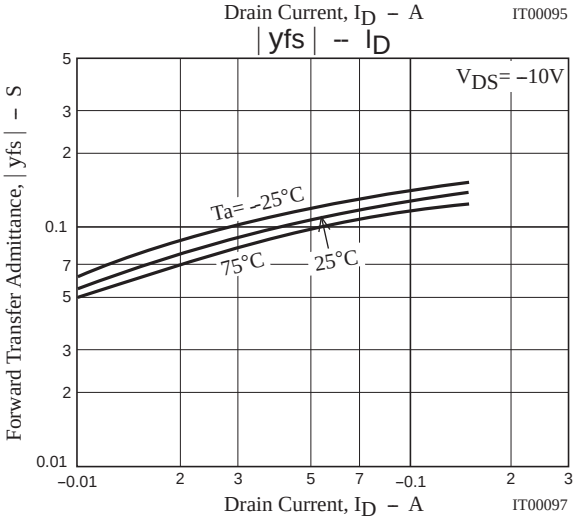

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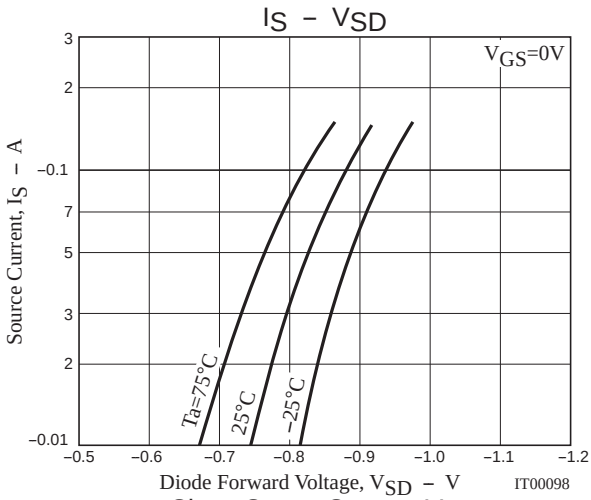

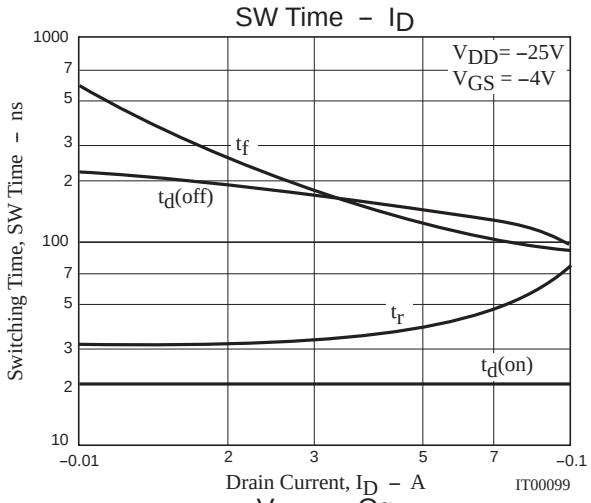

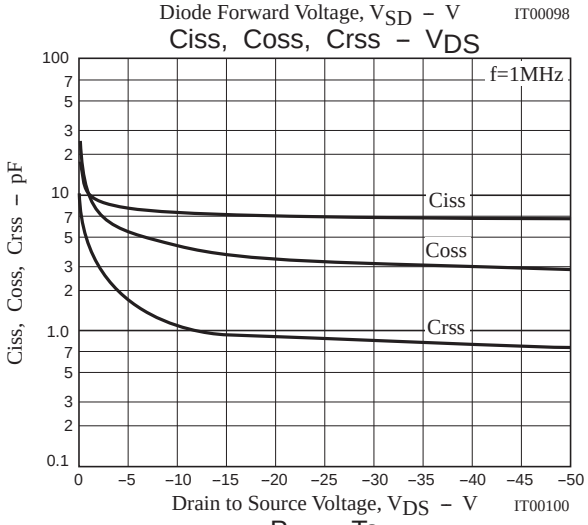

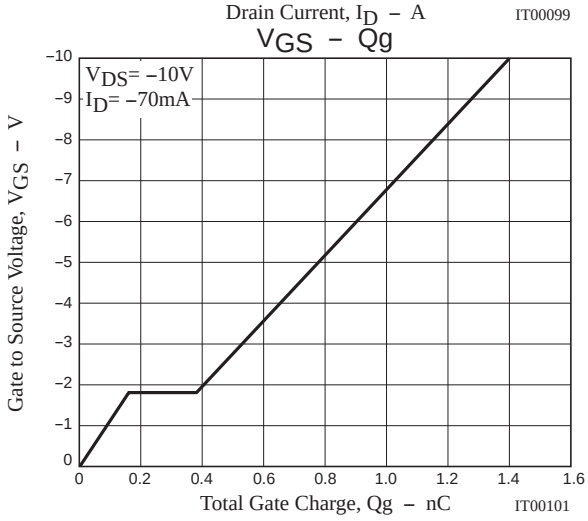

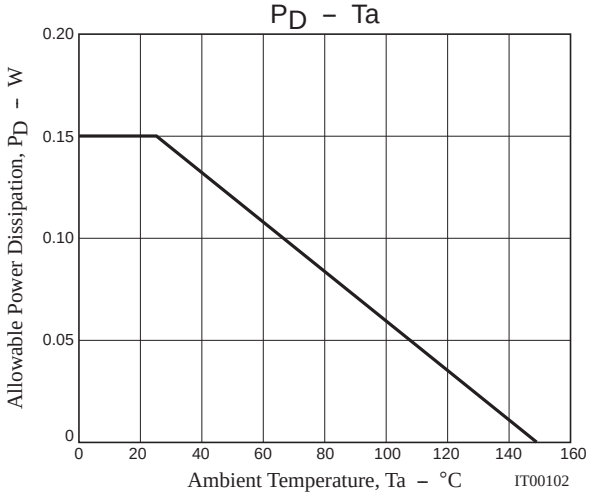

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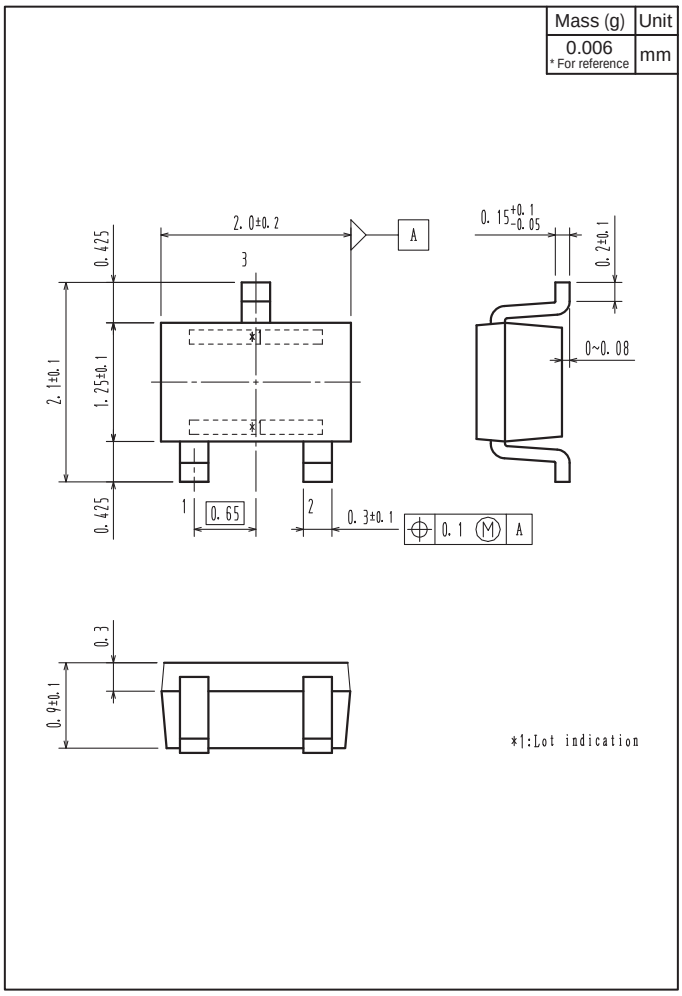
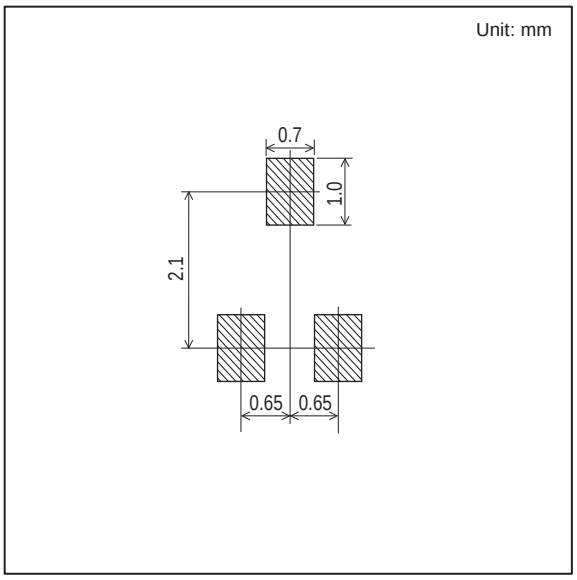
Outline Drawing

5LP01M-TL-E, 5LP01M-TL-H



Land Pattern Example



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Note on usage : Since the 5LP01M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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