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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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MTM23123

Silicon P-channel MOSFET

For digital circuits

■ Features

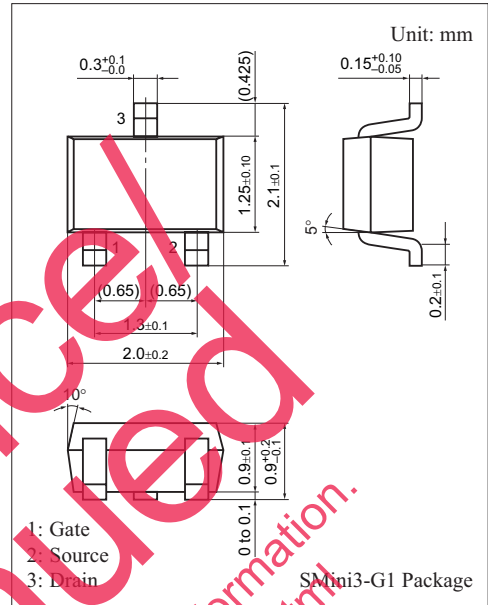
- Low voltage drive (2.5 V, 4 V)
- Realization of low on-resistance, using extremely fine process

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	-20	V
Gate-source surrender voltage	V_{GSS}	± 10	V
Drain current	I_D	-3.0	A
Peak drain current *1	I_{DP}	-16	A
Power dissipation *2	P_D	500	mW
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

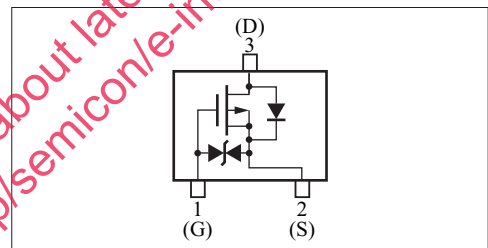
Note) *1: Pulse width $\leq 10 \mu\text{s}$, Duty Cycle $\leq 1\%$

*2: Measuring on ceramic substrate at $40 \text{ mm} \times 38 \text{ mm} \times 0.1 \text{ mm}$
 Absolute maximum rating without heat sink for P_D is 150 mW



Marking Symbol: BL

Internal Connection



■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

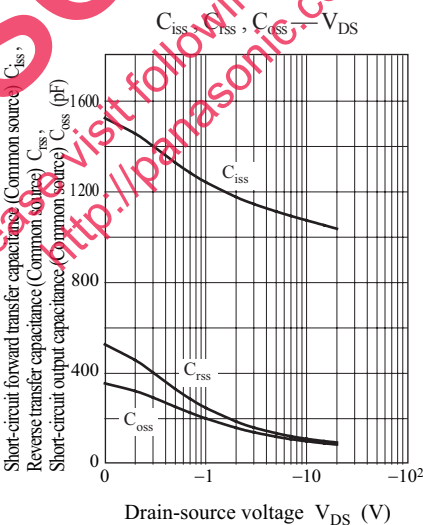
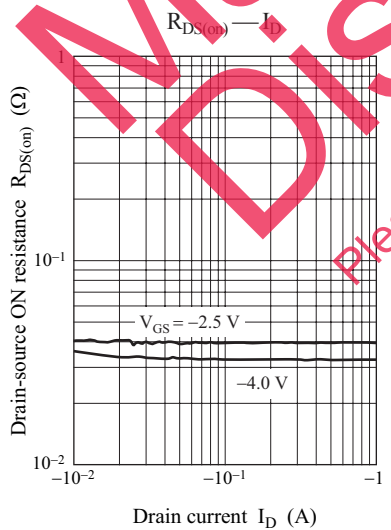
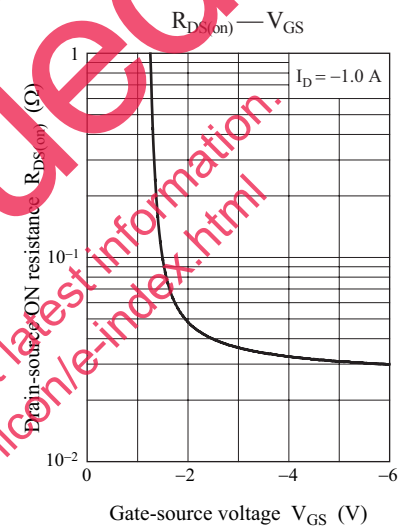
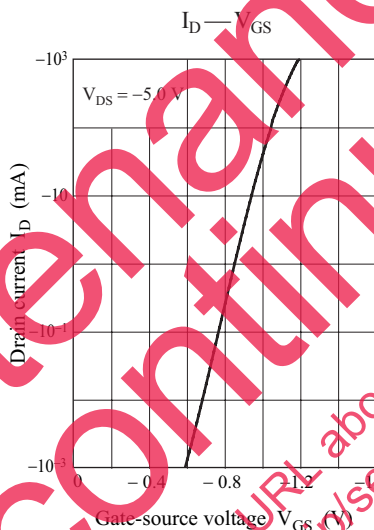
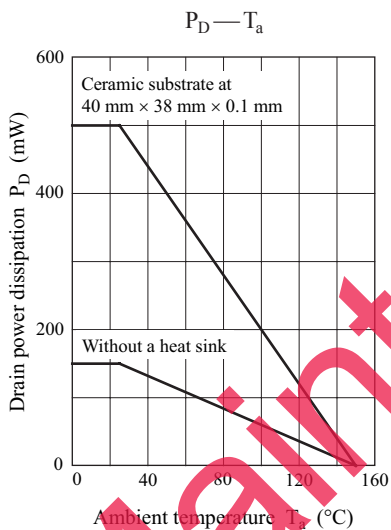
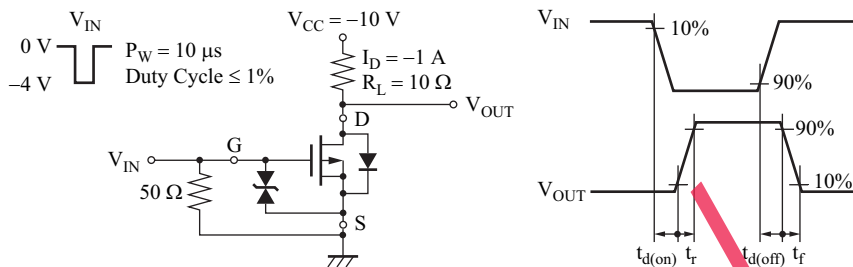
Parameter	Symbol	Conditions	Min	Typ	Max	Unit	
Drain-source surrender voltage	V_{DSS}	$I_D = -1 \text{ mA}, V_{GS} = 0$	-20			V	
Drain-source cutoff current	I_{DSS}	$V_{DS} = -20 \text{ V}, V_{GS} = 0$			-1.0	μA	
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 8 \text{ V}, V_{DS} = 0$			± 10	μA	
Gate threshold voltage	V_{TH}	$I_D = -1.0 \text{ mA}, V_{DS} = -10.0 \text{ V}$	-0.4	-0.85	-1.3	V	
Drain-source ON resistance *1	$R_{DS(on)}$	$I_D = -1 \text{ A}, V_{GS} = -4.0 \text{ V}$		40	55	m Ω	
		$I_D = -0.5 \text{ A}, V_{GS} = -2.5 \text{ V}$		45	70		
Forward transfer admittance *1	$ Y_{fs} $	$I_D = -1.0 \text{ A}, V_{DS} = -10 \text{ V}, f = 1 \text{ kHz}$	3.5			S	
Short-circuit forward transfer capacitance (Common source)	C_{iss}	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		1000		pF	
Short-circuit output capacitance (Common source)	C_{oss}				120		pF
Reverse transfer capacitance (Common source)	C_{rss}				120		pF
Turn-on delay time *2	$t_{d(on)}$	$V_{DD} = -10 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$		25		ns	
Rise time *2	t_r	$V_{DD} = -10 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$		25		ns	
Fall time *2	t_f	$V_{DD} = -10 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$		70		ns	
Turn-off delay time *2	$t_{d(off)}$	$V_{DD} = -10 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$		120		ns	

■ Electrical Characteristics (continued) $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement: Pulse width < 300 μs , Duty Cycle < 2.0%

*2: Measurement circuit



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