

MTM23223

Silicon N-channel MOSFET

For switching circuits

■ Features

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

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

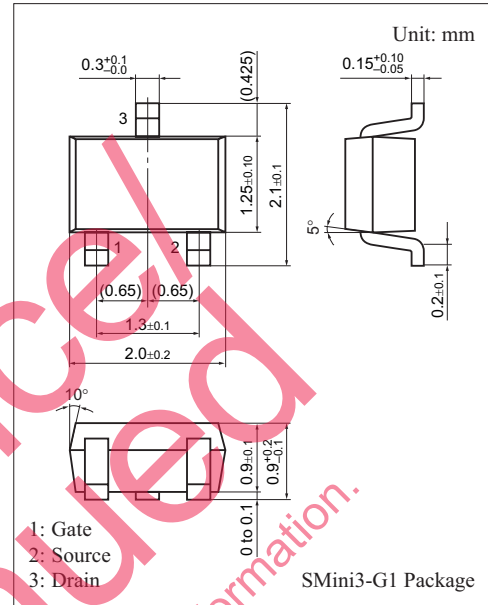
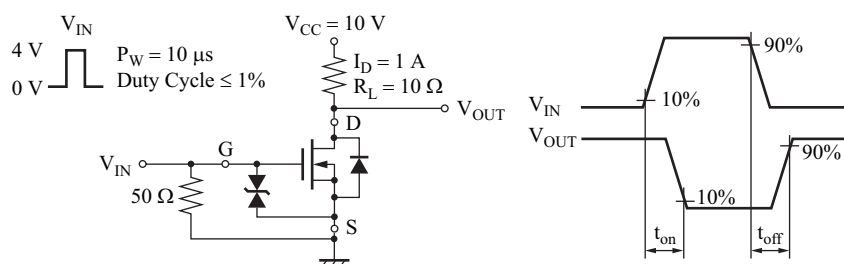
Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	20	V
Gate-source surrender voltage	V_{GSS}	± 10	V
Drain current	I_{D}	4.5	A
Peak drain current ^{*1}	I_{DP}	18	A
Power dissipation ^{*2}	P_{D}	500	mW
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to $+150$	$^\circ\text{C}$

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

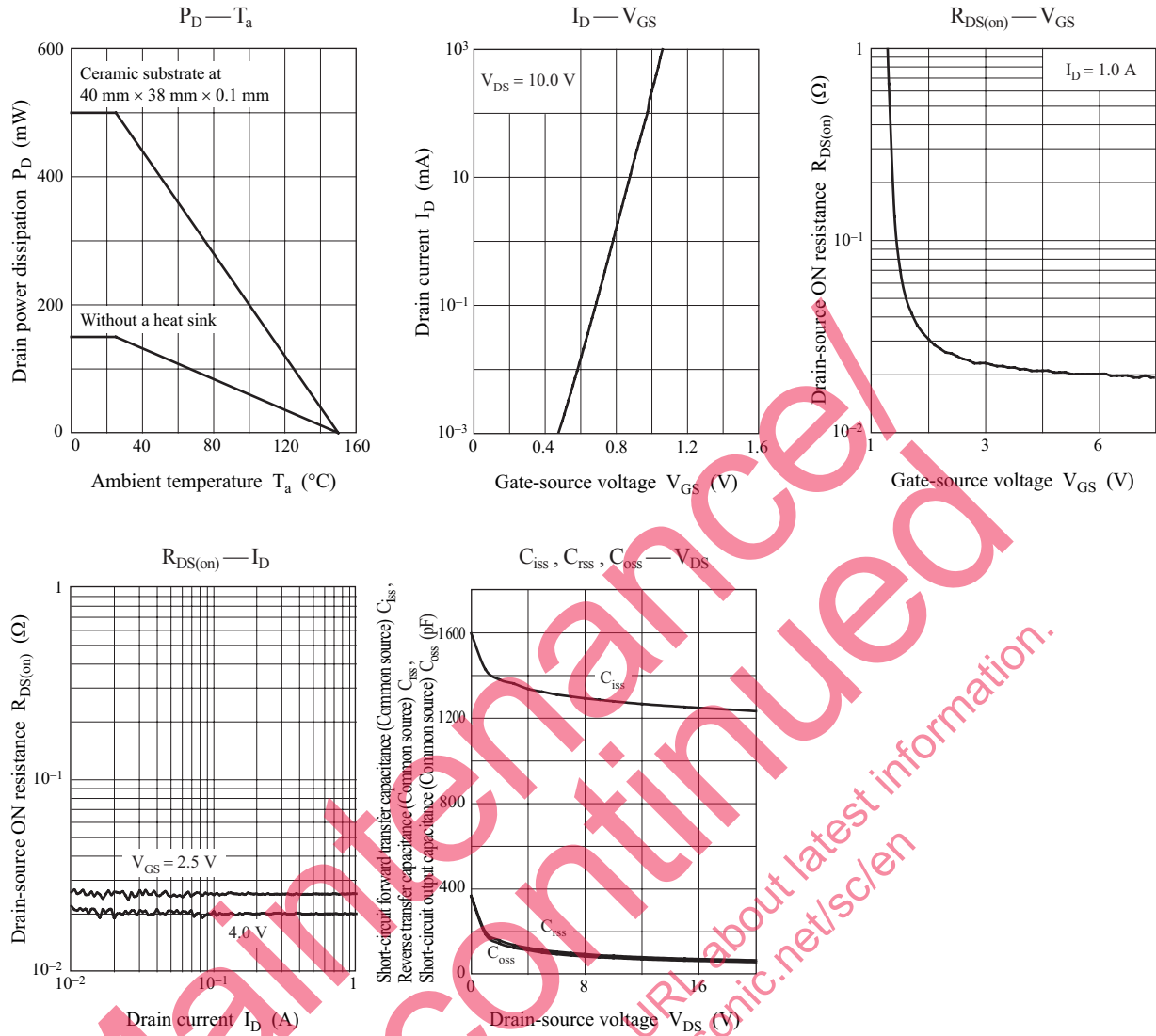
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_{\text{D}} = 1 \text{ mA}$, $V_{\text{GS}} = 0$	20			V
Drain-source cutoff current	I_{DSS}	$V_{\text{DS}} = 20 \text{ V}$, $V_{\text{GS}} = 0$			1.0	μA
Gate-source cutoff current	I_{GSS}	$V_{\text{GS}} = \pm 8 \text{ V}$, $V_{\text{DS}} = 0$			± 10	μA
Gate threshold voltage	V_{TH}	$I_{\text{D}} = 1.0 \text{ mA}$, $V_{\text{DS}} = 10.0 \text{ V}$	0.4	0.85	1.3	V
Drain-source ON resistance ^{*1}	$R_{\text{DS(on)}}$	$I_{\text{D}} = 1.0 \text{ A}$, $V_{\text{GS}} = 4.0 \text{ V}$		20	28	$\text{m}\Omega$
		$I_{\text{D}} = 0.6 \text{ A}$, $V_{\text{GS}} = 2.5 \text{ V}$		26	40	
Forward transfer admittance ^{*1}	$ Y_{\text{fs}} $	$I_{\text{D}} = 1.0 \text{ A}$, $V_{\text{DS}} = 10 \text{ V}$, $f = 1 \text{ kHz}$	3.5			S
Short-circuit forward transfer capacitance (Common source)	C_{iss}	$V_{\text{DS}} = 10 \text{ V}$, $V_{\text{GS}} = 0$, $f = 1 \text{ MHz}$		1200		pF
Short-circuit output capacitance (Common source)	C_{oss}			85		pF
Reverse transfer capacitance (Common source)	C_{rss}			80		pF
Turn-on time ^{*2}	t_{on}	$V_{\text{DD}} = 10 \text{ V}$, $V_{\text{GS}} = 0 \text{ V}$ to 4 V , $I_{\text{D}} = 1 \text{ A}$		16		ns
Turn-off time ^{*2}	t_{off}	$V_{\text{DD}} = 10 \text{ V}$, $V_{\text{GS}} = 4 \text{ V}$ to 0 V , $I_{\text{D}} = 1 \text{ A}$		220		ns

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

2. ^{*1}: Pulse measurement: Pulse width $< 300 \mu\text{s}$, Duty Cycle $< 2\%$ ^{*2}: t_{on} , t_{off} measurement circuit

Marking Symbol: BK



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