

MTM23227

Silicon N-channel MOSFET

For switching circuits

■ Features

- Realization of low on-resistance, using extremely fine process (4.6 mΩ/mm²)
- High-speed switching achieved by making to low capacity (efficiency emphasis type)

■ 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	2.0	A
Peak drain current *1	I_{DP}	8.0	A
Power dissipation *2	P_D	500	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Note) *1: Pulse width ≤ 10 μs, Duty Cycle ≤ 1%

*2: Measuring on ceramic substrate at 40 mm × 38 mm × 0.2 mm
Absolute maximum rating without heat sink for P_D is 150 mW

■ Package

- Code
SMini3-G1
- Pin Name
1: Gate
2: Source
3: Drain

■ Marking Symbol: ET

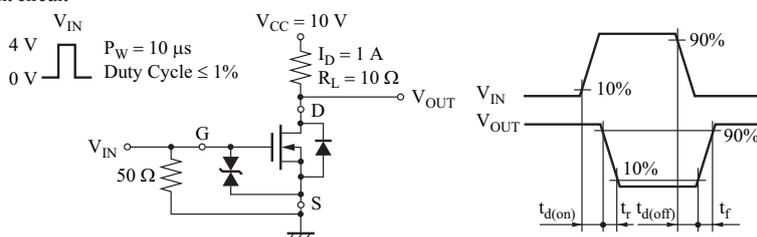
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

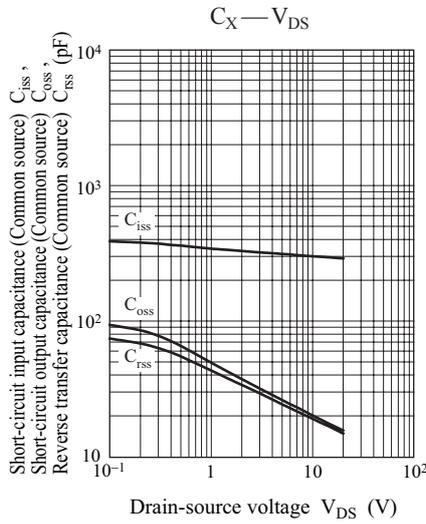
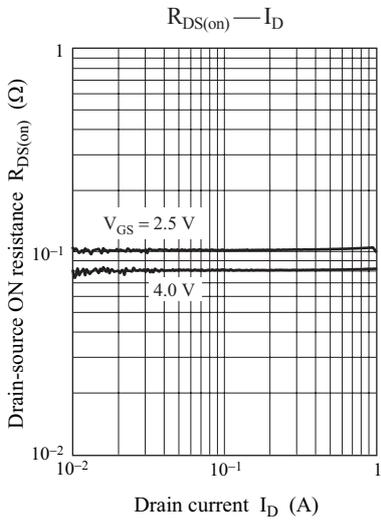
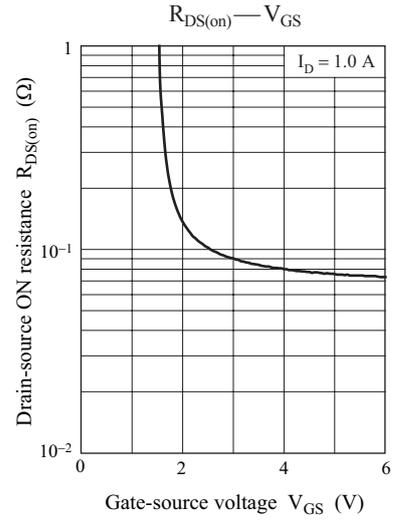
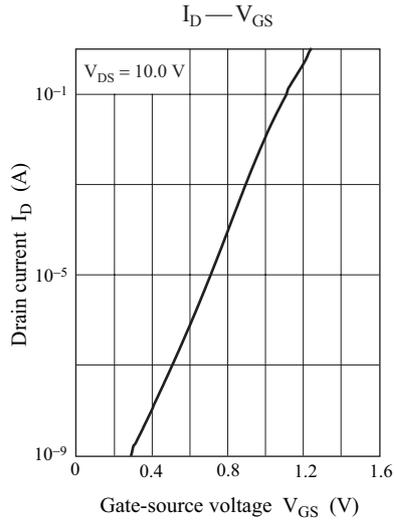
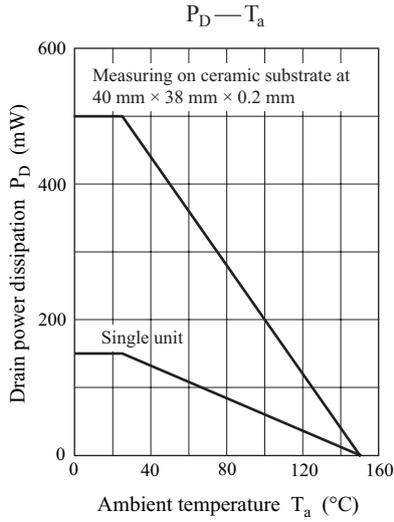
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1 \text{ mA}, V_{GS} = 0$	20			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 8 \text{ V}, V_{DS} = 0$			±10	μA
Gate threshold voltage	V_{TH}	$I_D = 1.0 \text{ mA}, V_{DS} = 10 \text{ V}$	0.4	0.85	1.3	V
Drain-source ON resistance *1	$R_{DS(on)}$	$I_D = 1 \text{ A}, V_{GS} = 4.0 \text{ V}$		85	110	mΩ
		$I_D = 0.5 \text{ A}, V_{GS} = 2.5 \text{ V}$		100	150	
Forward transfer admittance *1	$ Y_{fs} $	$I_D = 1 \text{ A}, V_{DS} = 10 \text{ V}$	3.0			S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		290		pF
Short-circuit output capacitance (Common source)	C_{oss}				26	pF
Reverse transfer capacitance (Common source)	C_{rss}				20	pF
Turn-on time *2	t_{on}	$V_{DD} = 10 \text{ V}, V_{GS} = 0 \text{ V to } 4 \text{ V}, I_D = 1 \text{ A}$		12		ns
Turn-off time *2	t_{off}	$V_{DD} = 10 \text{ V}, V_{GS} = 4 \text{ V to } 0 \text{ V}, I_D = 1 \text{ A}$		60		ns

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

2. *1: Pulse measurement

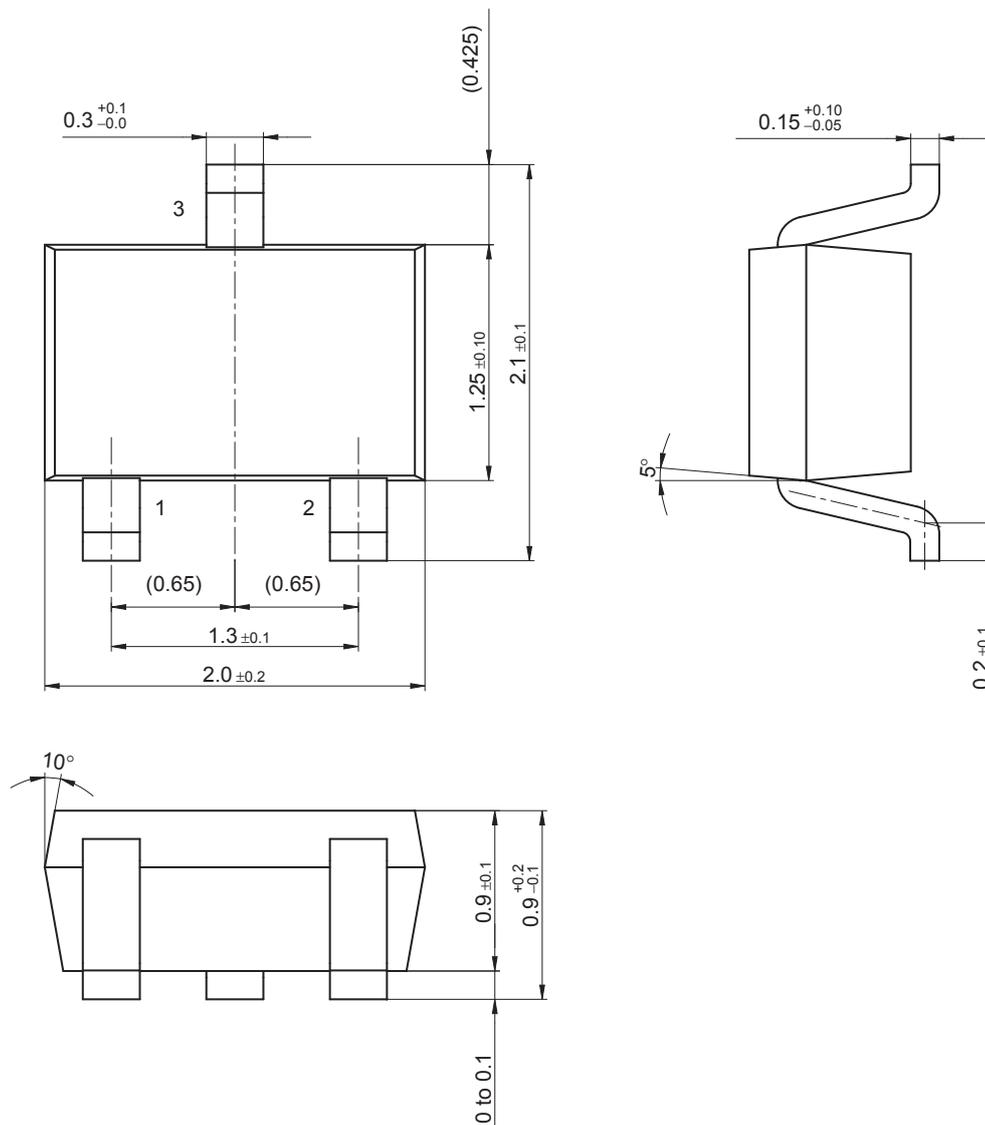
*2: t_{on}, t_{off} measurement circuit





SMini3-G1

Unit: mm



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