

Panasonic

MOS FET

MTM232270LBF

MTM232270LBF

Silicon N-channel MOS FET

For switching

MTM13227 in SMini3 type package

■ Features

- Low drain-source On-state resistance : $R_{DS(on)}$ typ = 85 m Ω (VGS = 4.0 V)
- Low drive voltage: 2.5 V drive
Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : ET

■ Packaging

Embossed type (Thermo-compression sealing) : 3 000 pcs / reel (standard)

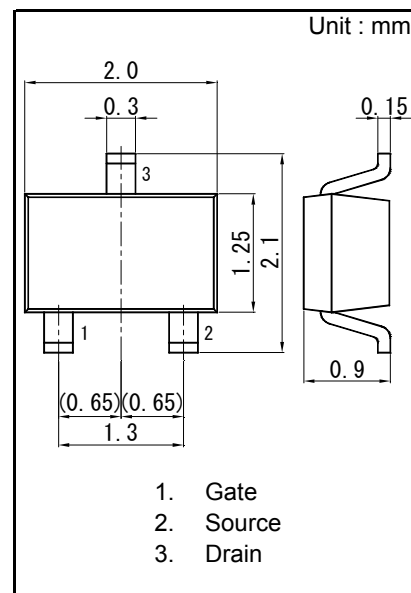
■ Absolute Maximum Ratings Ta = 25 °C

項目	記号	定格	単位
Drain-source Voltage	VDS	20	V
Gate-source Voltage	VGS	±10	
Drain current	ID	2.0	A
Peak drain current ^{*1}	IDp	8	A
Power dissipation ^{*2}	PD	500	mW
Channel temperature	Tch	150	°C
Operating ambient temperature	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Note) *1 Pulse width ≤ 10 μ s, Duty cycle ≤ 1 %

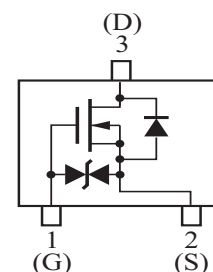
*2 Measuring on ceramic board at 40 × 38 × 0.1 mm

Absolute maximum rating PD without heat sink shall be made 150 mW.



Panasonic	SMini3-G1-B
JEITA	SC-70
Code	SOT-323

Internal Connection



Pin Name

1. Gate
2. Source
3. Drain

■ Electrical Characteristics Ta = 25 °C ± 3 °C

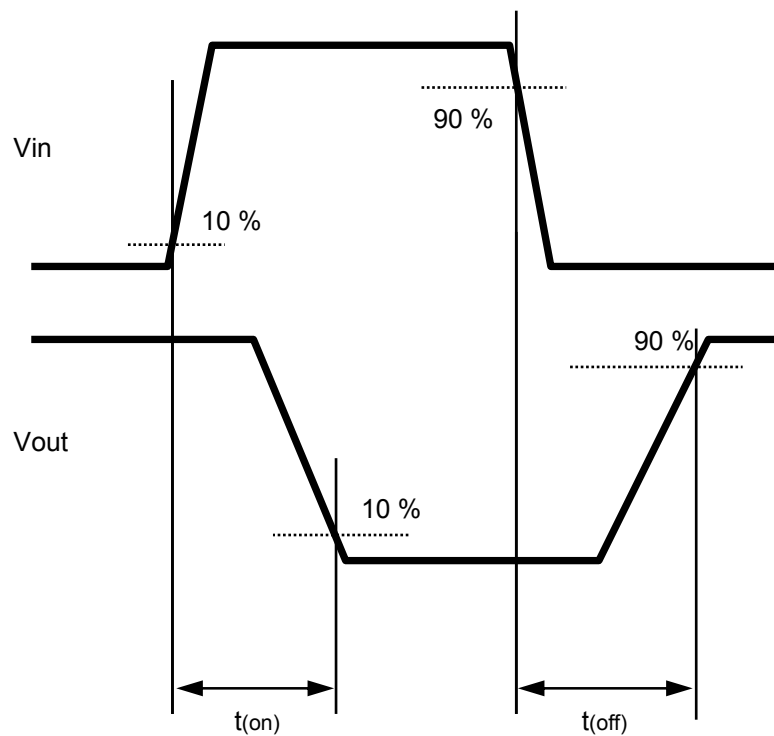
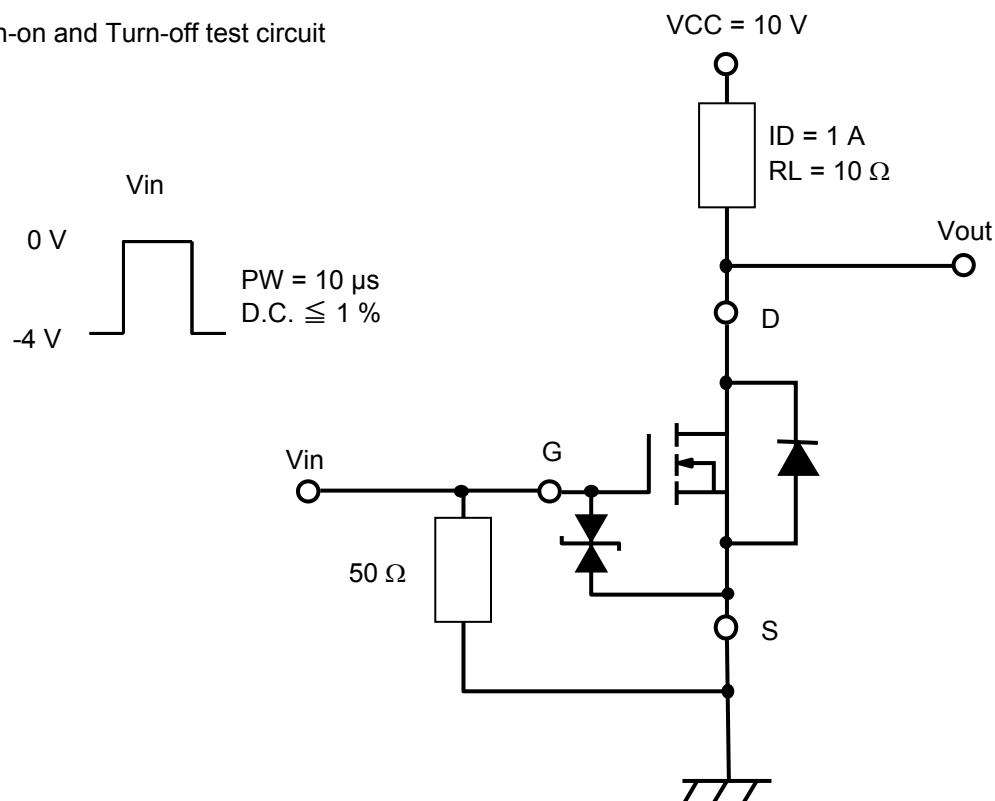
項目	記号	条件	最小	標準	最大	単位
Drain-source surrender voltage	VDSS	ID = 1 mA, VGS = 0 V	20			V
Drain-source cutoff current	IDSS	VDS = 20 V, VGS = 0 V			10	μA
Gate-source cutoff current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA
Gate threshold voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	V
Drain-source ON resistance *1	RDS(ON)1	ID = 1 A, VGS = 4 V		85	110	mΩ
	RDS(ON)2	ID = 0.5 A, VGS = 2.5 V		100	150	
Forward transfer admittance *1	Yfs	ID = 1 A, VDS = 10 V, f = 1 kHz	3.0			S
Short-circuit input capacitance (Common source)	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		290		pF
Short-circuit output capacitance (Common source)	Coss			26		
Reverse transfer capacitance (Common source)	Crss			20		
Turn-on Time *2	ton	VDD = 10 V, VGS = 0 to 4 V ID = 1 A		12		ns
Turn-off Time *2	toff	VDD = 10 V, VGS = -4 to 0 V ID = 1 A		60		ns

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

2. *1 Pulse test : Pulse width ≤ 10 μs, Duty cycle ≤ 1 %

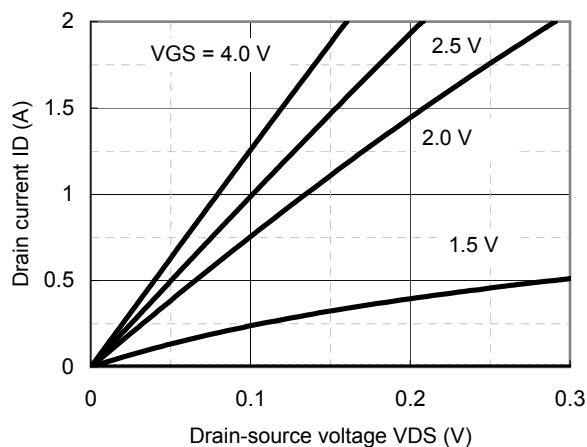
*2 Turn-on and Turn-off test circuit

*2 Turn-on and Turn-off test circuit

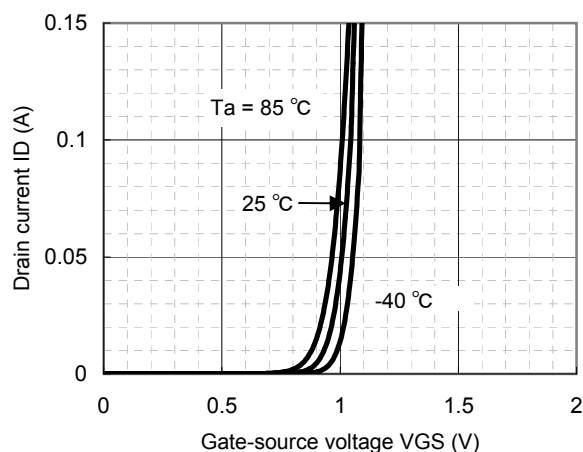


Technical Data (reference)

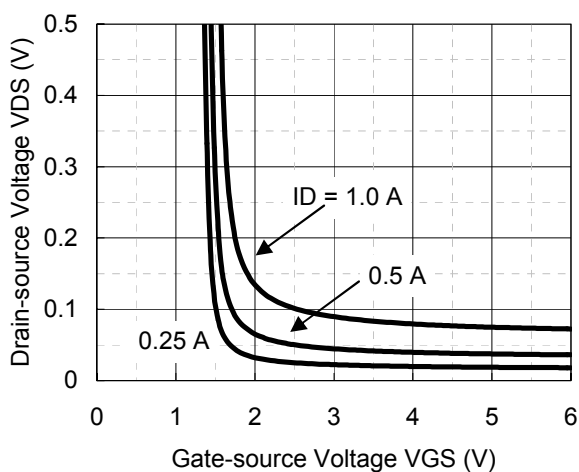
ID - VDS



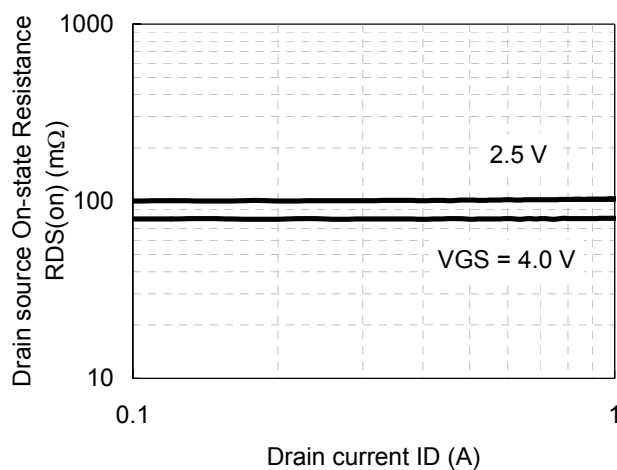
ID - VGS



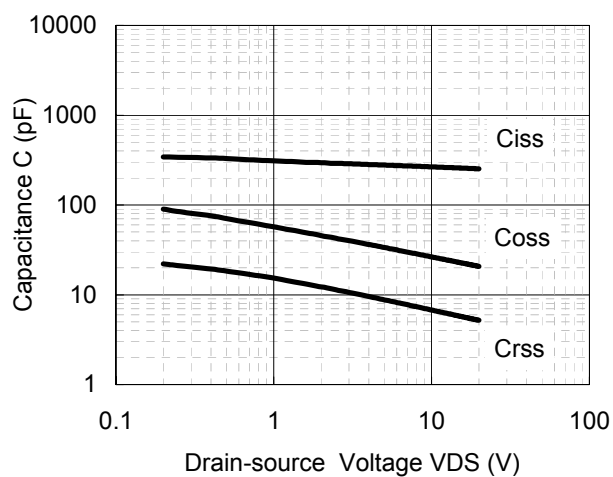
VDS - VGS



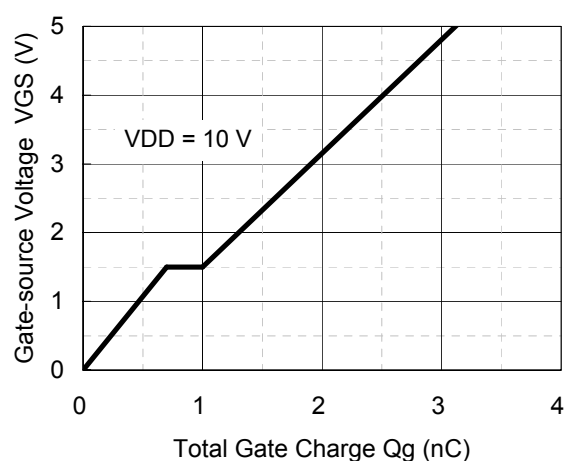
RDS(on) - ID



Capacitance - VDS

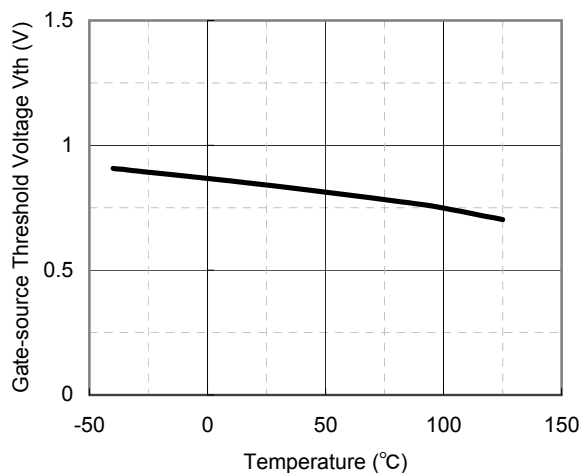


Dynamic Input/Output Characteristics

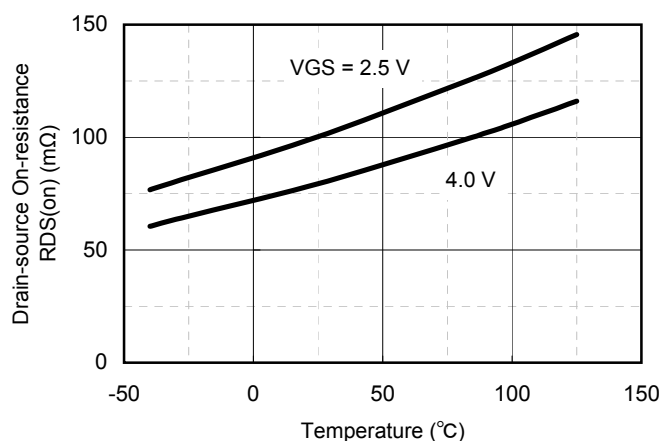


Technical Data (reference)

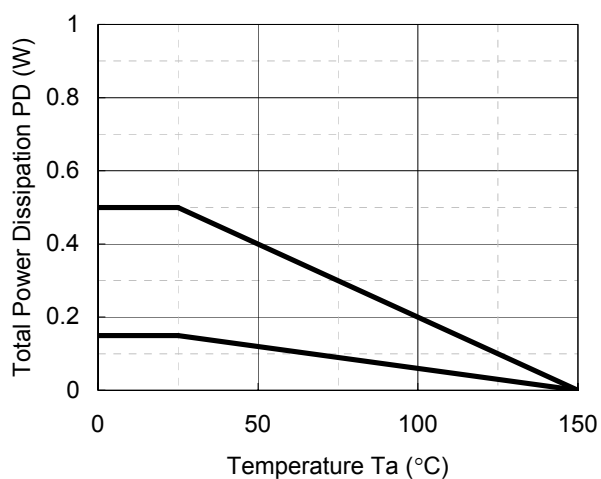
V_{th} - T_a



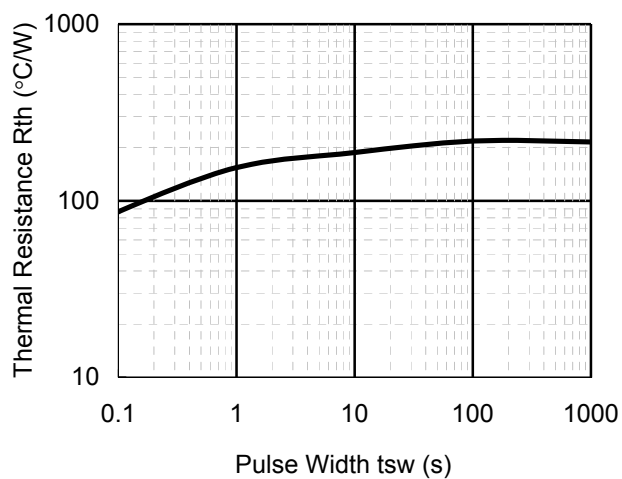
R_{DS(on)} - T_a



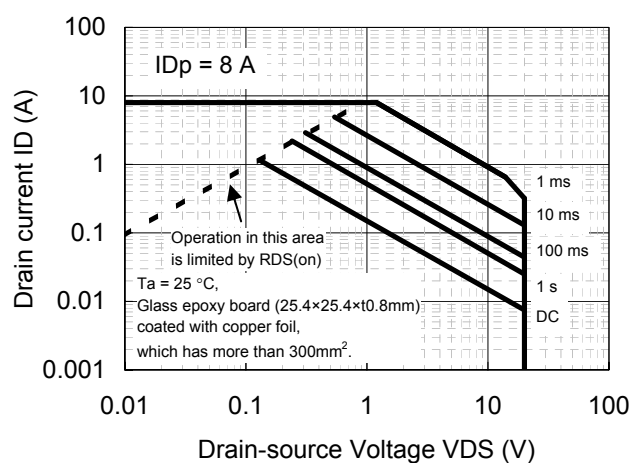
P_D - T_a



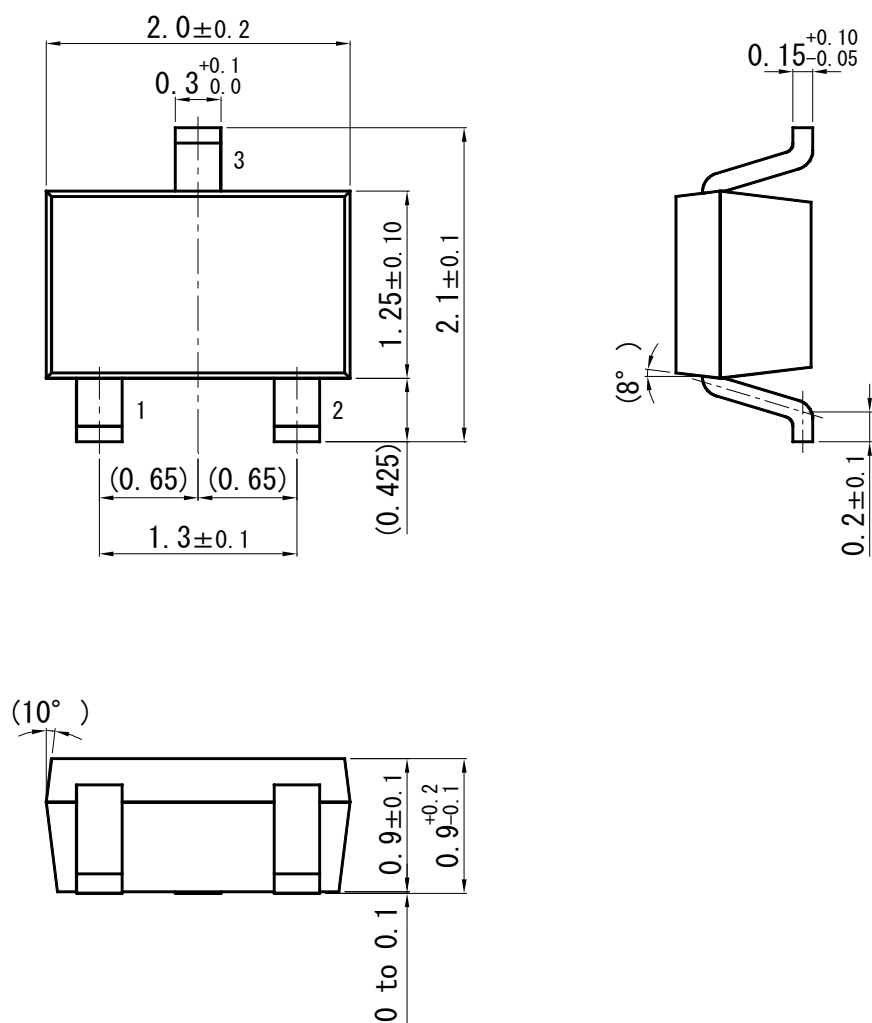
R_{th} - t_{sw}



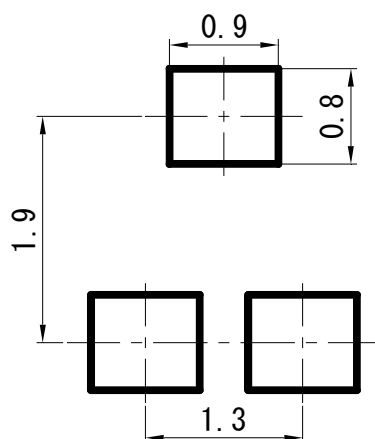
Safe Operating Area



SMini3-G1-B



■ Land Pattern (Reference) (Unit : mm)



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