Panasonic

MTM231232LBF

Silicon P-channel MOSFET

For Switching

MTM76123 in SMini3 type package

■ Features

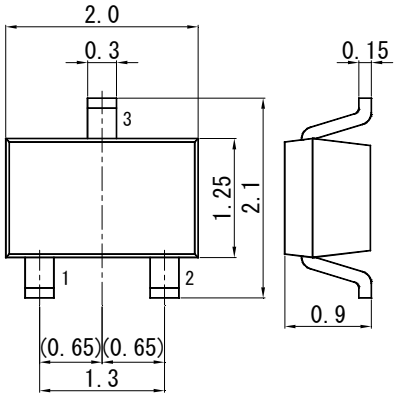
- Low Drain-source On-state Resistance : RDS(on) typ. = 40 mΩ (VGS = -4 V)
- Low Drive Voltage : 2.5 V Drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : BL

■ Packaging

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

Unit : mm



1. Gate
2. Source
3. Drain

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

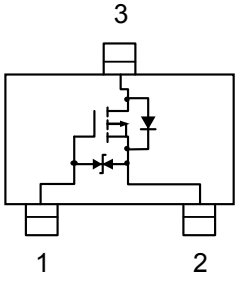
■ Absolute Maximum Ratings Ta = 25 °C

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	VDS	-20	V
Gate to Source Voltage	VGS	±10	V
Drain Current	ID	-3	A
Drain Current (Pulsed) *1	IDp	-16	A
Total Power Dissipation *2	PD	500	mW
Channel Temperature	Tch	150	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Note *1 Pulse width ≤ 10 μs, Duty cycle ≤ 1 %

*2 Measuring on ceramic board at 40 mm × 38 mm × 0.1 mm.
Absolute maximum rating PD Non-heat sink shall be made 150 mW.

Internal Connection



Pin Name

1. Gate
2. Source
3. Drain

Established : 2012-04-21
Revised : 2013-03-07

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = -1 mA, VGS = 0 V	-20			V
Zero Gate Voltage Drain Current	IDSS	VDS = -20 V, VGS = 0 V			-1	μA
Gate-source Leakage Current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = -1 mA, VDS = -10 V	-0.4	-0.85	-1.3	V
Drain-source On-state Resistance *1	RDS(on)1	ID = -1 A, VGS = -4 V		40	55	mΩ
	RDS(on)2	ID = -0.5 A, VGS = -2.5 V		45	70	
Forward transfer admittance *1	|Yfs|	ID = -1 A, VDS = -10 V, f = 1 kHz	3.5			S
Input Capacitance	Ciss	VDS = -10 V, VGS = 0 V f = 1 MHz		1 000		pF
Output Capacitance	Coss			120		
Reverse Transfer Capacitance	Crss			120		
Turn-on Delay Time *2	td(on)	VDD = -10 V, VGS = 0 to -4 V ID = -1 A		25		ns
Rise Time *2	tr			25		
Turn-off Delay Time *2	td(off)	VDD = -10 V, VGS = -4 to 0 V ID = -1 A		120		ns
Fall Time *2	tf			70		

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

*1 Pulse test : Pulse width ≤ 300 μs, Duty cycle ≤ 2 %

*2 Measurement circuit for Turn-on Delay Time / Rise Time / Turn-off Delay Time / Fall Time

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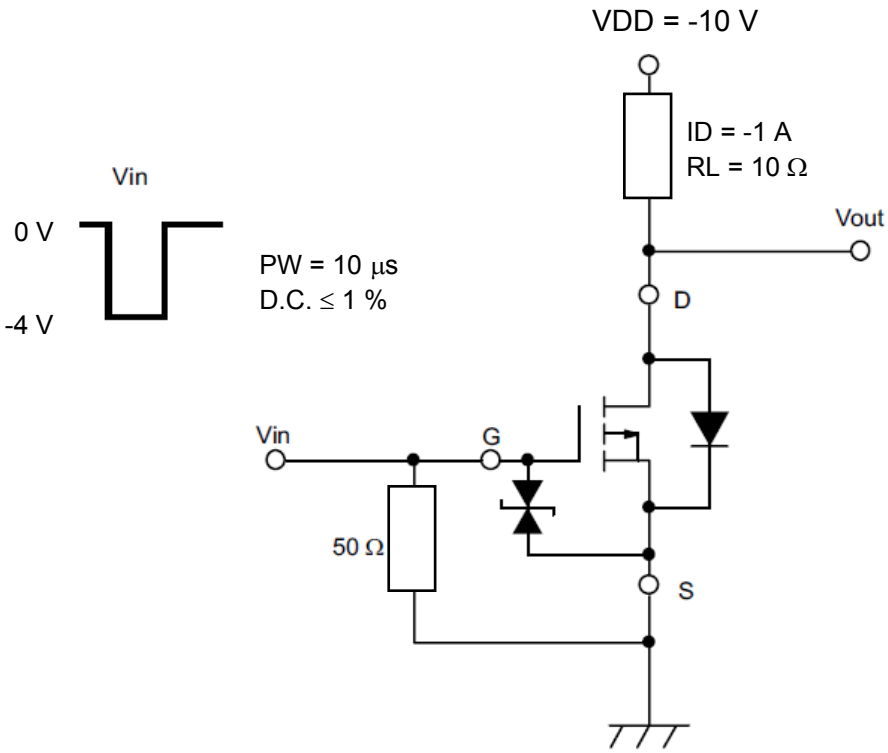
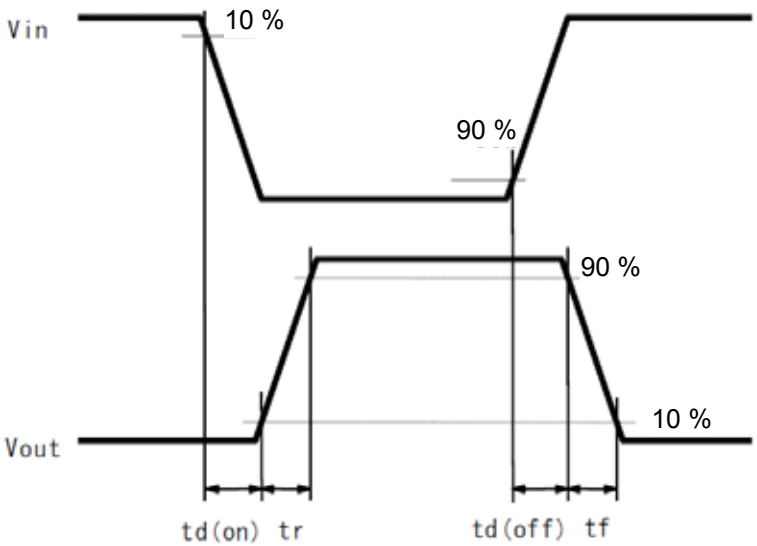
*2 Measurement circuit for Turn-on Delay Time / Rise Time / Turn-off Delay Time / Fall Time





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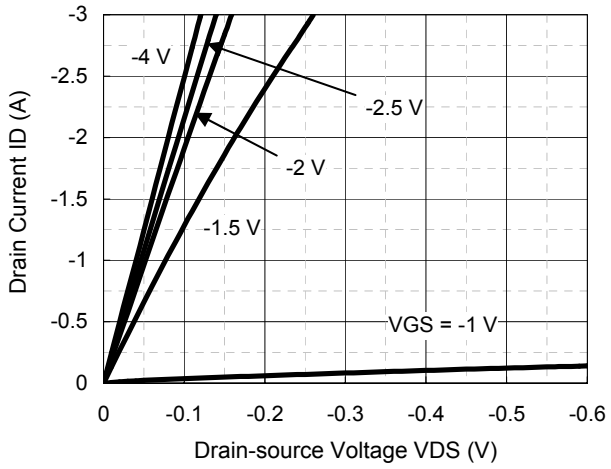
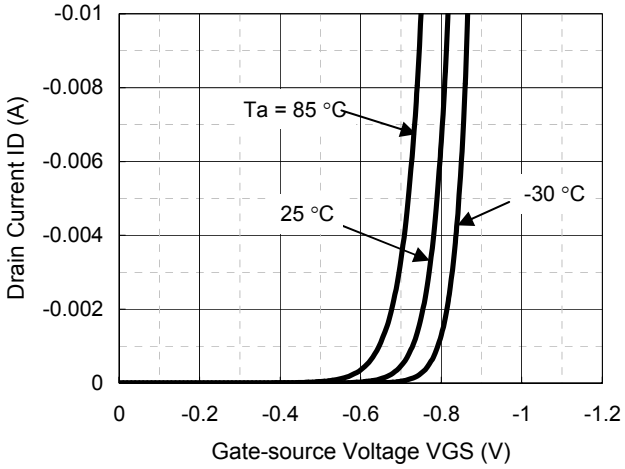
Technical Data (reference)

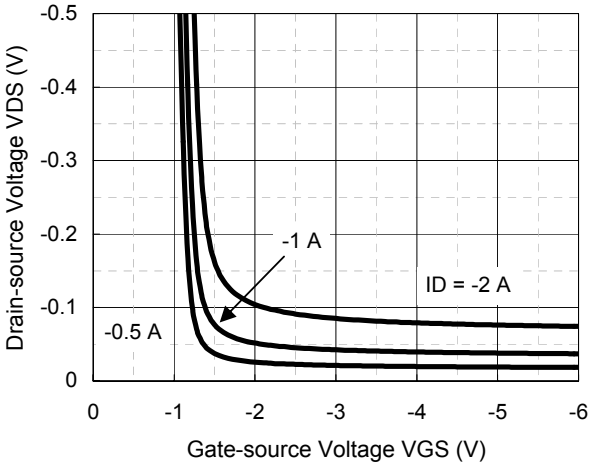
ID - VDS



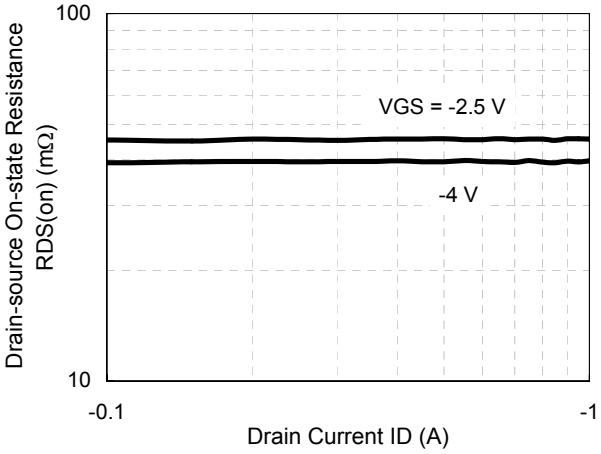
ID - VGS



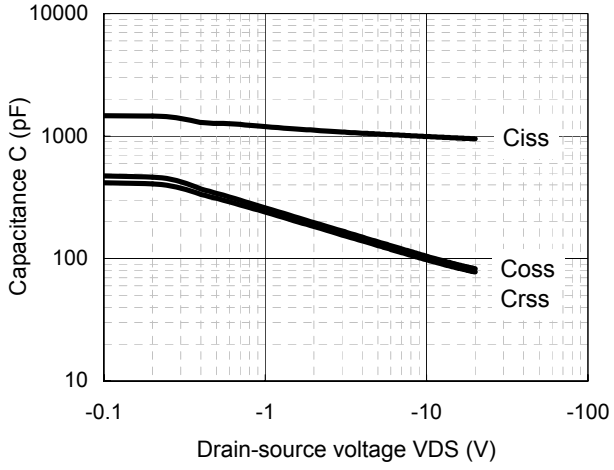
VDS - VGS



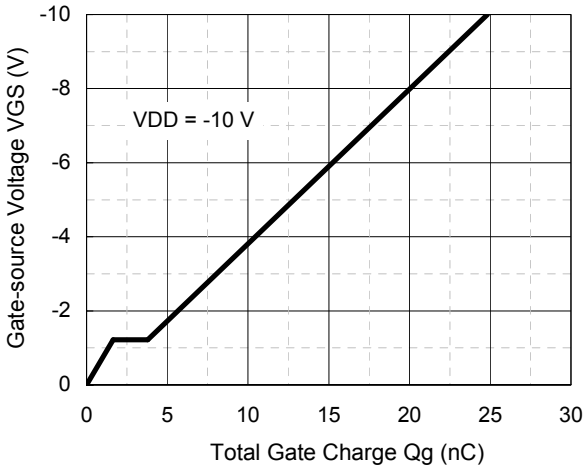
RDS(on) - ID



Capacitance - VDS



Dynamic Input/Output Characteristics



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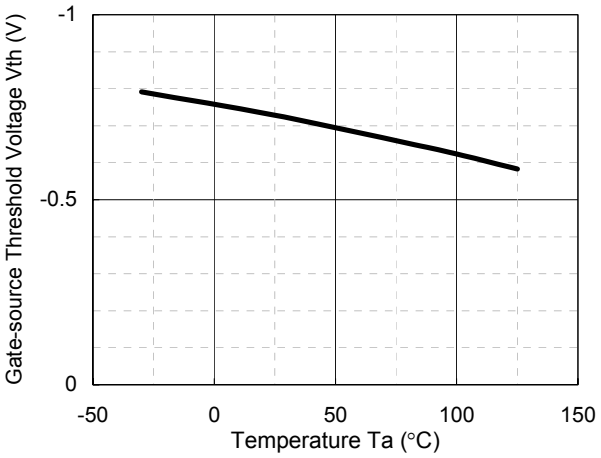
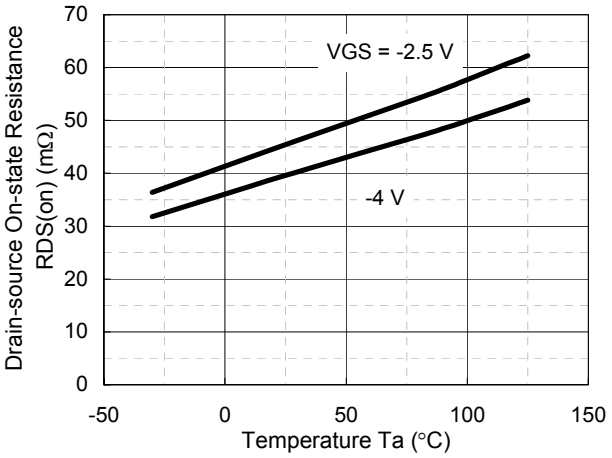
Technical Data (reference)

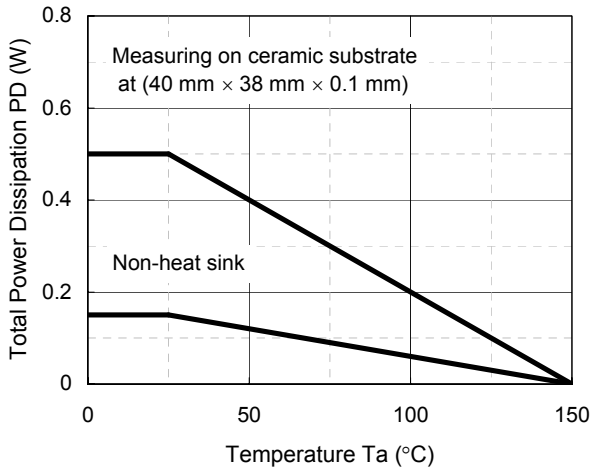
Vth - Ta



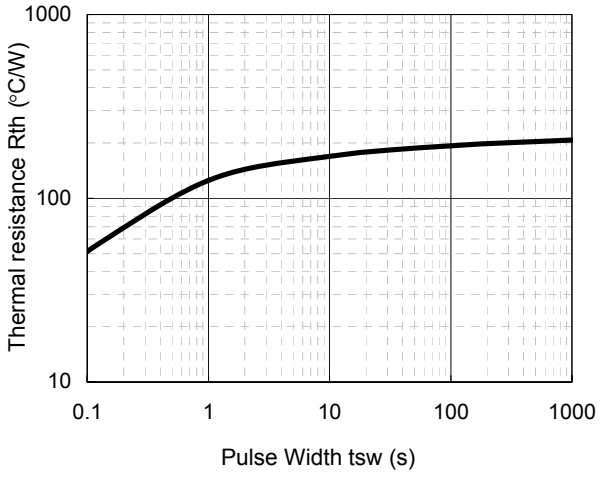
RDS(on) - Ta



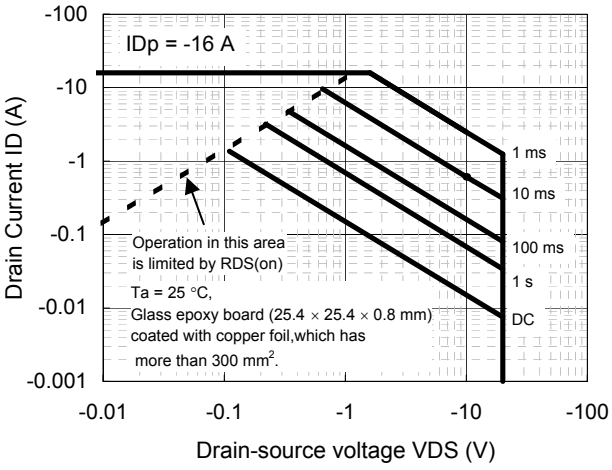
PD - Ta



Rth - tsw



Safe Operating Area



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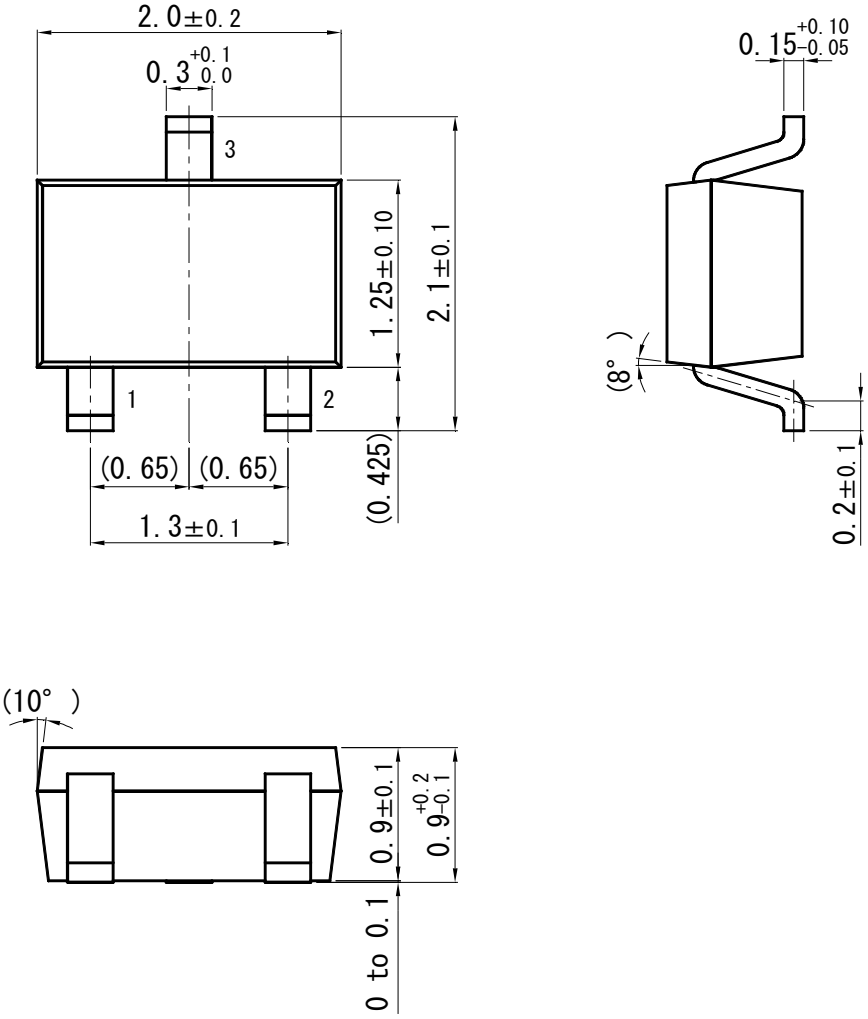
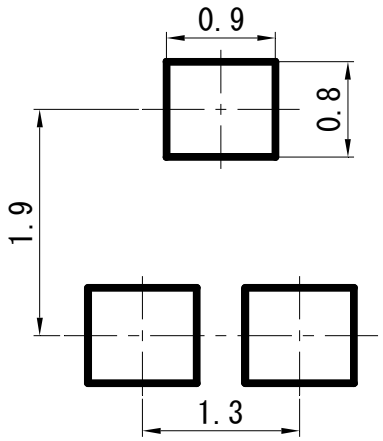
SMini3-G1-B

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



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