



# FJ3P02100L

## Silicon P-channel MOSFET

For Load-switching

### Features

- Low drain-source ON resistance:  $R_{DS(on)typ.} = 12.0m\Omega$  ( $V_{GS} = -2.5 V$ )
- High heat dissipated and ultra-compact package PMCP
- RoHS compliant (EU RoHS / MSL:Level 1 compliant)

### Marking Symbol: A0

### Packaging

Embossed type (Thermo-compression sealing) : 7 000 pcs / reel (standard)

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

Parameter	Symbol	Rating	Unit
Drain-source voltage	VDS	-20	V
Gate-source voltage	VGS	$\pm 8$	V
Drain current	$T_a = 25\text{ }^\circ\text{C}$ , DC <sup>*2</sup>	ID1	-4.4
	$T_a = 25\text{ }^\circ\text{C}$ , DC <sup>*3</sup>	ID2	-7.5
Drain current (Pulsed)	$T_a = 25\text{ }^\circ\text{C}$ <sup>*1*2</sup>	IDp1	-13.2
	$T_a = 25\text{ }^\circ\text{C}$ <sup>*1*3</sup>	IDp2	-22.5
Total power dissipation	$T_a = 25\text{ }^\circ\text{C}$ , DC <sup>*2</sup>	PD1	300
	$T_a = 25\text{ }^\circ\text{C}$ , DC <sup>*3</sup>	PD2	850
Channel temperature	Tch	150	°C
Operating ambient temperature	Topr	-40 to +85	
Storage temperature range	Tstg	-55 to +150	

Note : \*1  $t = 10\text{ }\mu\text{s}$ , Duty Cycle < 1%

\*2 When mounted on glass epoxy board typeA (Refer to Figure1)

\*3 When mounted on glass epoxy board typeB (Refer to Figure2)

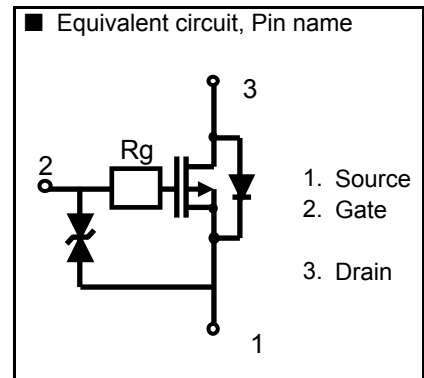
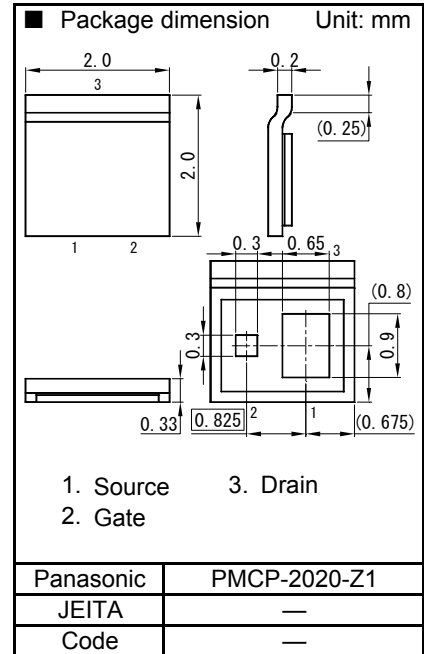
### Electrical Characteristics $T_a = 25\text{ }^\circ\text{C} \pm 3\text{ }^\circ\text{C}$

#### Static Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	VDSS	$I_D = -1.0\text{ mA}$ , $V_{GS} = 0\text{ V}$	-20			V
Zero gate voltage drain current	IDSS	$V_{DS} = -20\text{ V}$ , $V_{GS} = 0\text{ V}$			-10	$\mu\text{A}$
Gate-source leakage current	IGSS	$V_{GS} = \pm 8\text{ V}$ , $V_{DS} = 0\text{ V}$			$\pm 10$	$\mu\text{A}$
Gate-source threshold voltage	Vth	$I_D = -1.0\text{ mA}$ , $V_{DS} = -10\text{ V}$	-0.3	-0.65	-1.05	V
Drain-source on-state resistance	RDS(on)1	$I_D = -3.7\text{ A}$ , $V_{GS} = -4.5\text{ V}$		9.5	12.5	m $\Omega$
	RDS(on)2	$I_D = -3.7\text{ A}$ , $V_{GS} = -2.5\text{ V}$		12.0	16.5	
	RDS(on)3	$I_D = -3.7\text{ A}$ , $V_{GS} = -2.0\text{ V}$		16.0	30.0	

#### Dynamic Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input capacitance <sup>*1</sup>	Ciss	$V_{DS} = -10\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 1\text{ MHz}$		3000		pF
Output capacitance <sup>*1</sup>	Coss			330		
Reverse transfer capacitance <sup>*1</sup>	Crss			350		





Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Turn-on delay time <sup>*1 *2</sup>	td(on)	VDD = -10 V, VGS = 0 to -4 V, ID = -3.7 A		1		μs
Rise time <sup>*1 *2</sup>	tr			1.9		
Turn-off delay time <sup>*1 *2</sup>	td(off)	VDD = -10 V, VGS = -4 to 0 V, ID = -3.7 A		6.5		μs
Fall time <sup>*1 *2</sup>	tf			3.9		

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

2. \*1 Assured by design

\*2 Refer to figure3, measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time

Figure1: Glass epoxy board typeA

Material:FR4, Size:25.4mm x 25.4mm x t 1.0mm, Cu pad:thickness 36μm, 25.9mm<sup>2</sup>

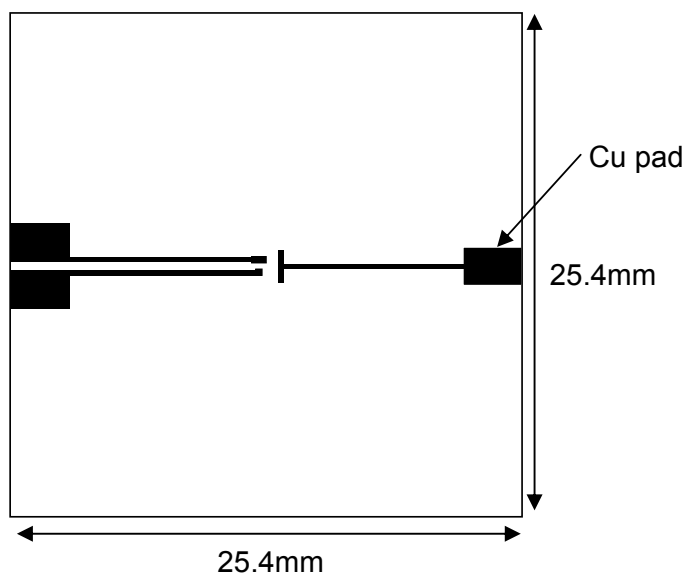


Figure2: Glass epoxy board typeB

Material:FR4, Size:25.4mm x 25.4mm x t 1.0mm, Cu pad:thickness 36μm, 82.0mm<sup>2</sup>

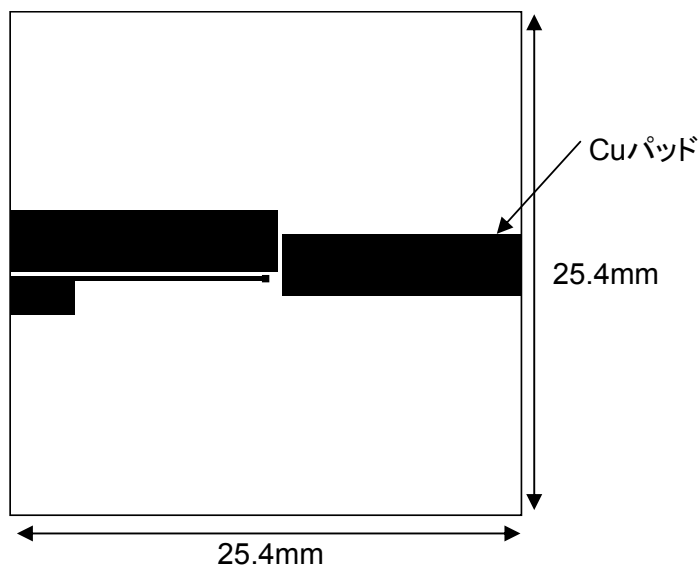
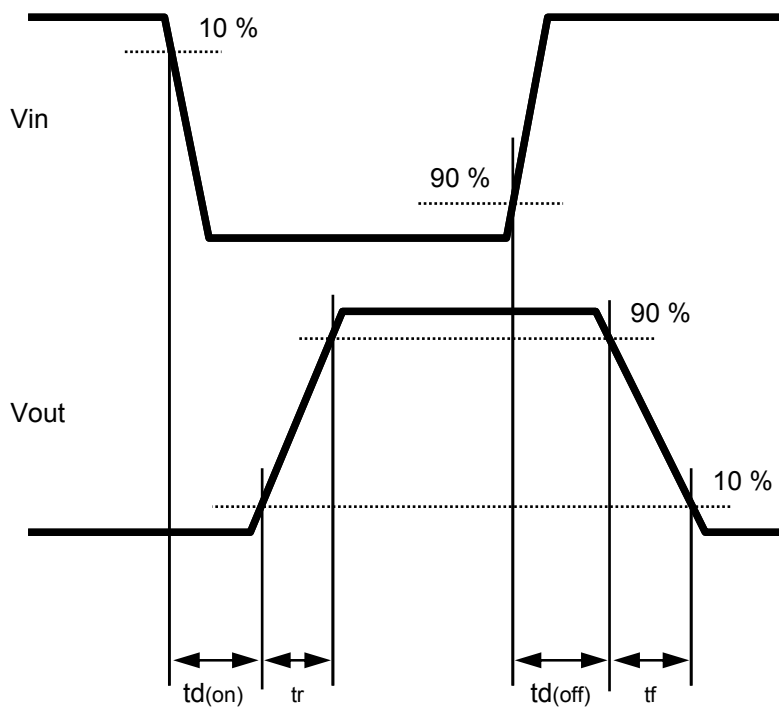
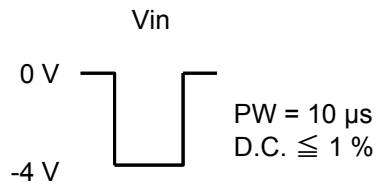
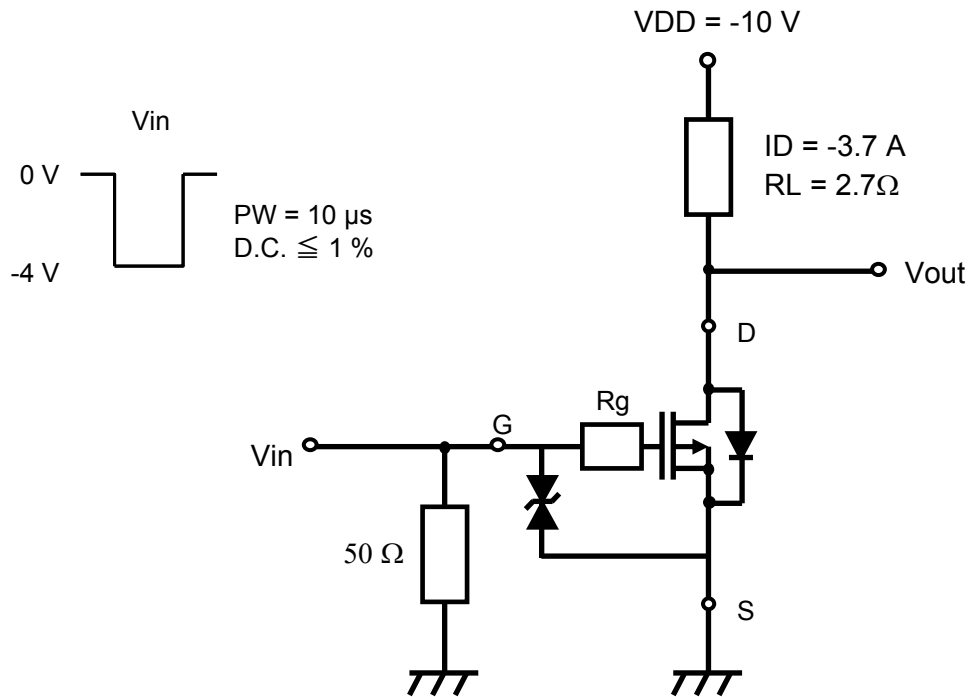
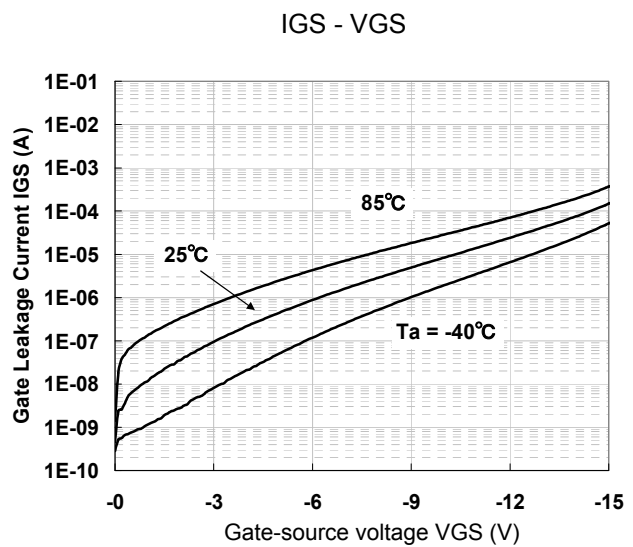
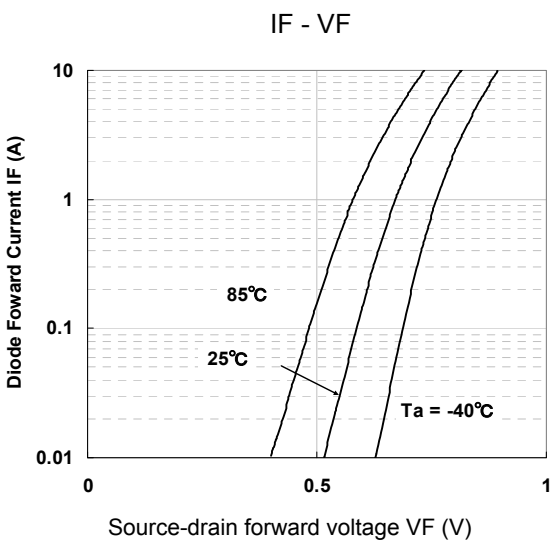
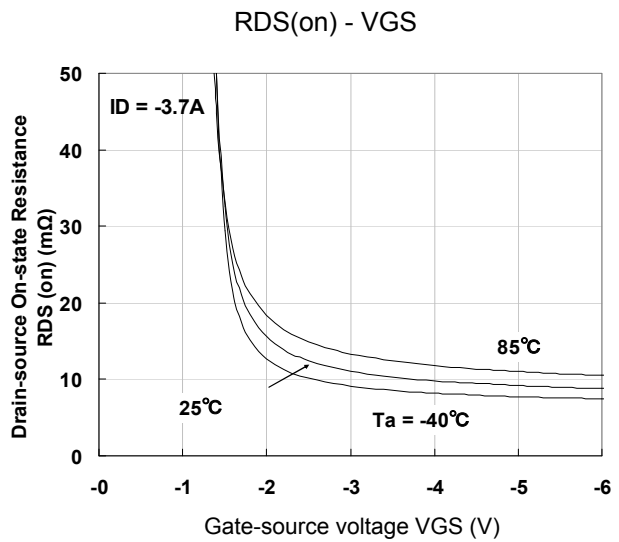
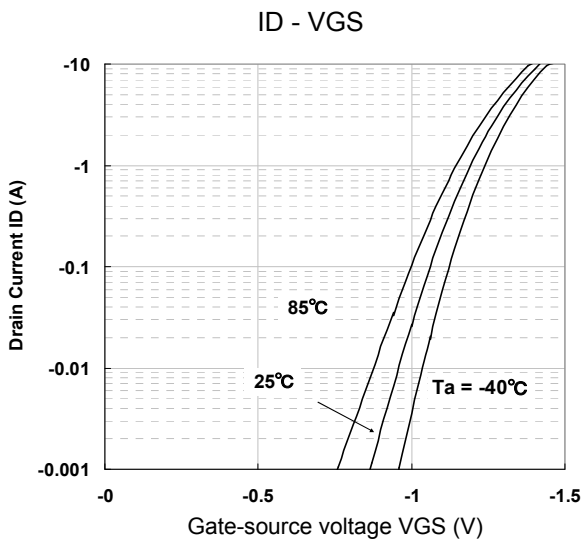
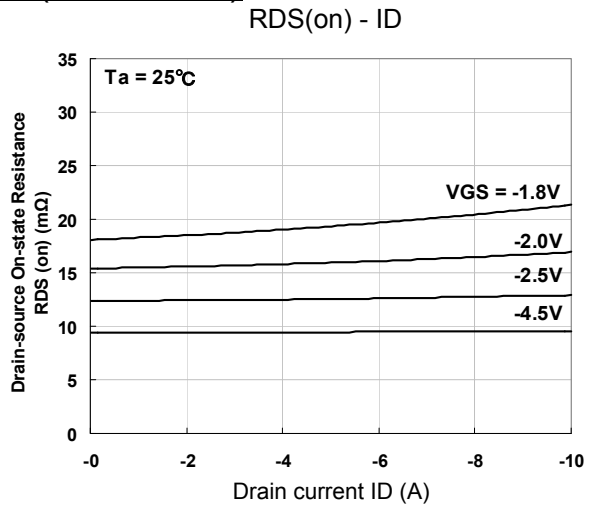
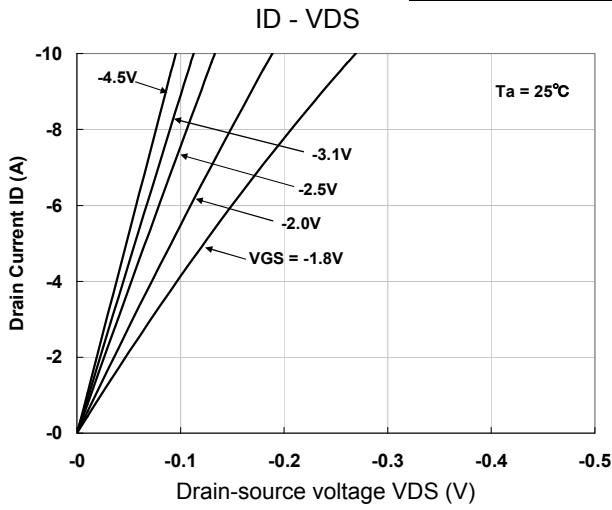




Figure3: Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time

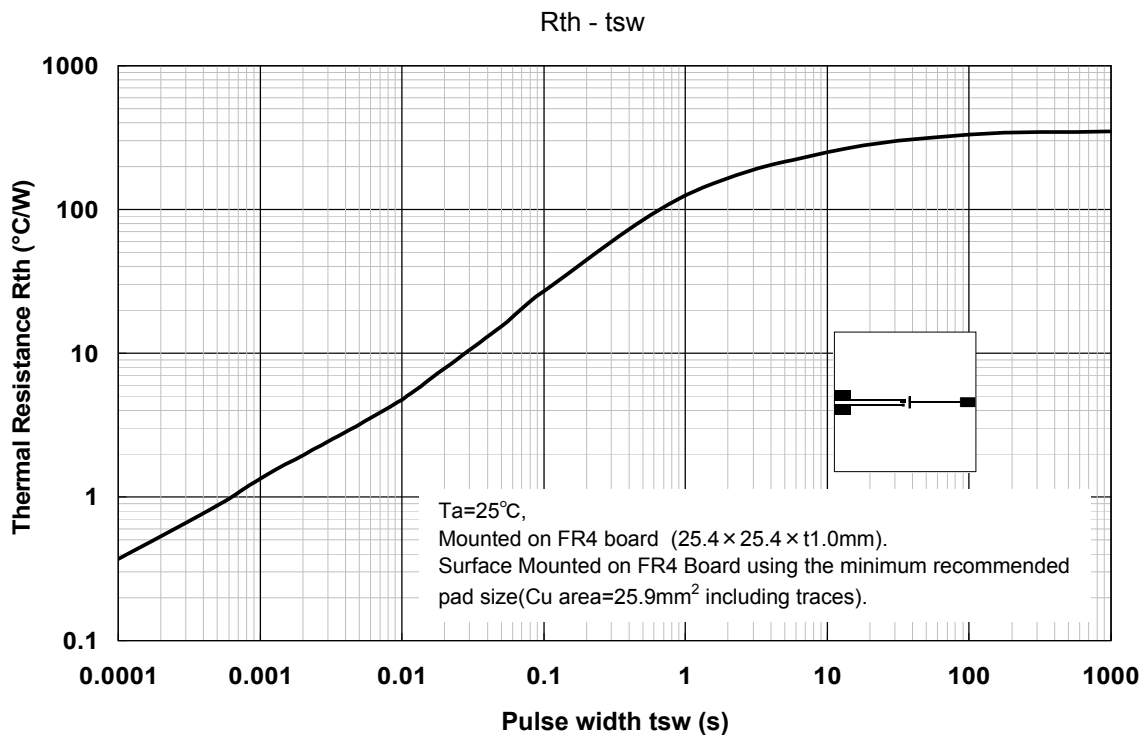
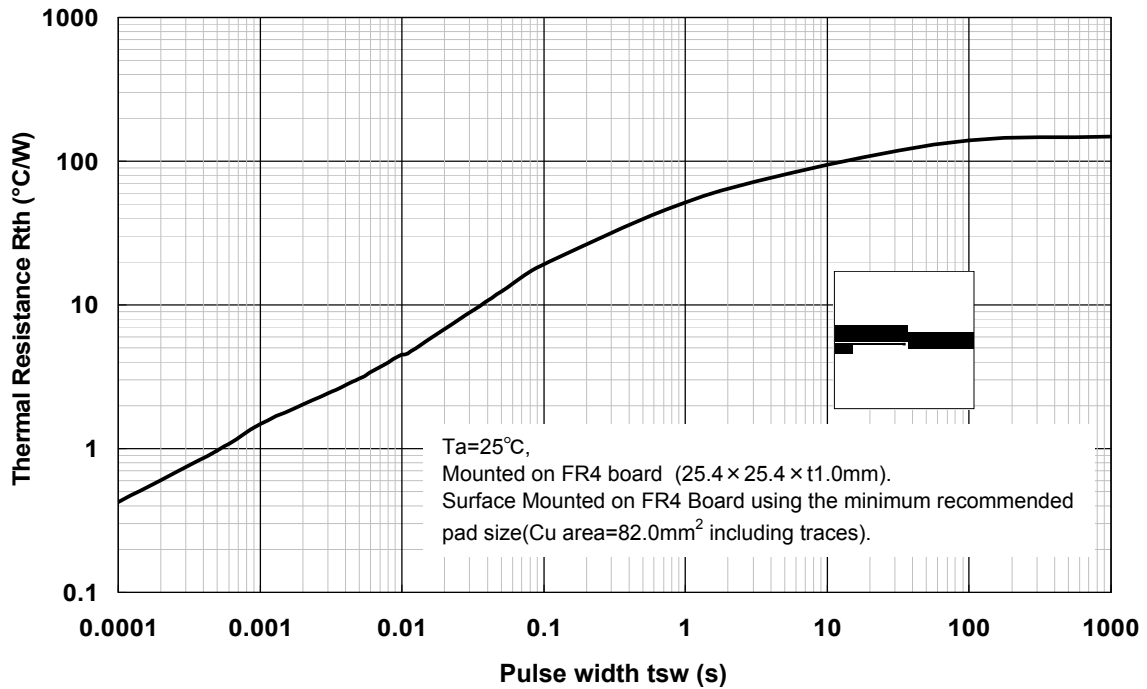


Technical Data ( reference )





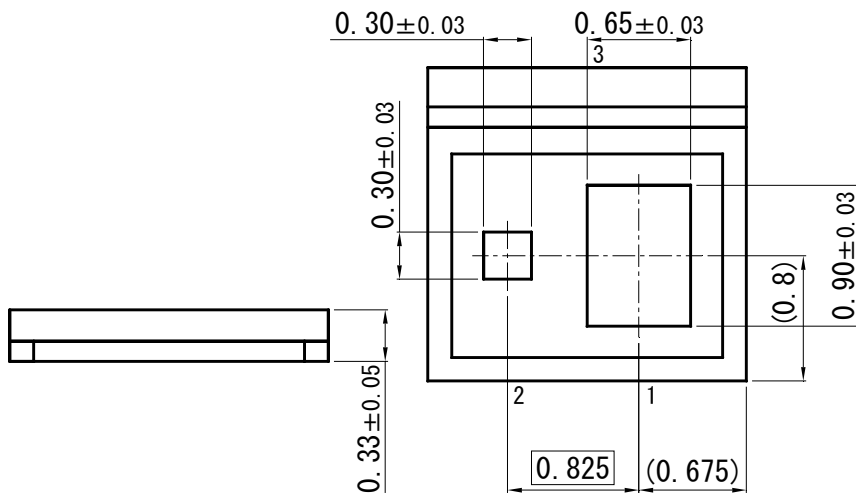
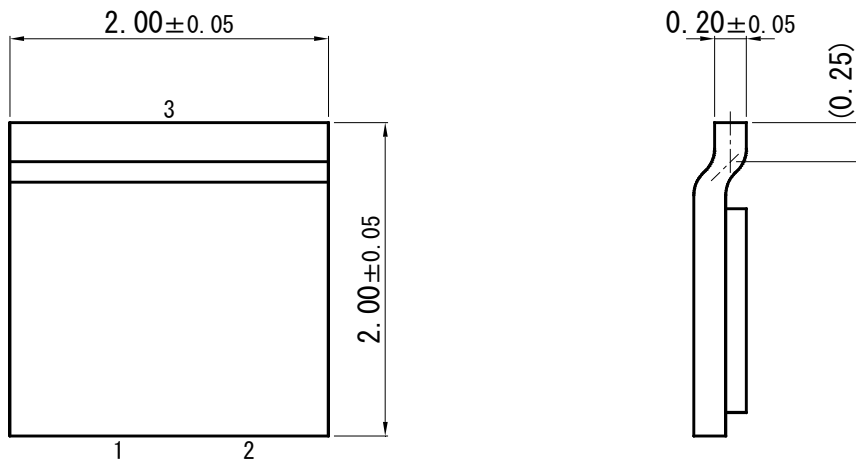
Technical Data ( reference )  
 Rth - tsw



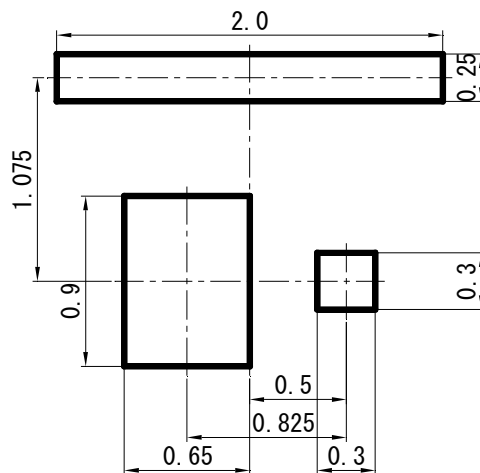


PMCP-2020-Z1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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