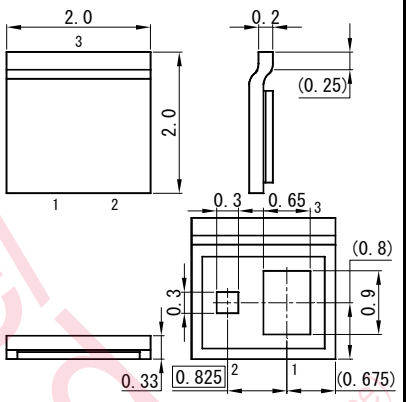
Panasonic

FJ3P02100L

Silicon P-channel MOSFET

For Load-switching

■ Package dimension Unit: mm



1. Source 3. Drain
2. Gate

Panasonic	PMCP-2020-Z1
JEITA	—
Code	—

■ Features

- Low drain-source ON resistance:RDS(on)typ. = 12.0mΩ (VGS = -2.5 V)
- High heat dissipated and ultra-compact package PMCP
- RoHS compliant (EU RoHS / MSL:Level 1 compliant)

■ Marking Symbol: A0

■ Packaging

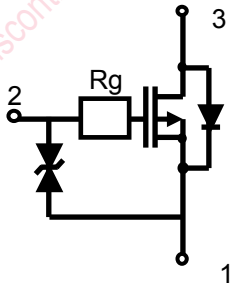
Embossed type (Thermo-compression sealing) : 7 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

Parameter		Symbol	Rating	Unit
Drain-source voltage		VDS	-20	V
Gate-source voltage		VGS	±8	V
Drain current	Ta = 25 °C, DC *2	ID1	-4.4	A
	Ta = 25 °C, DC *3	ID2	-7.5	
Drain current (Pulsed)	Ta = 25 °C *1 *2	IDp1	-13.2	A
	Ta = 25 °C *1 *3	IDp2	-22.5	
Total power dissipation	Ta = 25 °C, DC *2	PD1	300	mW
	Ta = 25 °C, DC *3	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 µs, 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)

■ Equivalent circuit, Pin name



1. Source
2. Gate
3. Drain

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

Static Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	VDSS	ID = -1.0 mA, VGS = 0 V	-20			V
Zero gate voltage drain current	IDSS	VDS = -20 V, VGS = 0 V			-10	µA
Gate-source leakage current	IGSS	VGS = ±8 V, VDS = 0 V			±10	µA
Gate-source threshold voltage	Vth	ID = -1.0 mA, VDS = -10 V	-0.3	-0.65	-1.05	V
Drain-source on-state resistance	RDS(on)1	ID = -3.7 A, VGS = -4.5 V		9.5	12.5	mΩ
	RDS(on)2	ID = -3.7 A, VGS = -2.5 V		12.0	16.5	
	RDS(on)3	ID = -3.7 A, VGS = -2.0 V		16.0	30.0	

Dynamicic Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input capacitance *1	Ciss	VDS = -10 V, VGS = 0 V, f = 1 MHz		3000		pF
Output capacitance *1	Coss			330		
Reverse transfer capacitance *1	Crss			350		

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Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Turn-on delay time *1 *2	td(on)	VDD = -10 V, VGS = 0 to -4 V,ID = -3.7 A		1		µs
Rise time *1 *2	tr			1.9		
Turn-off delay time *1 *2	td(off)	VDD = -10 V, VGS = -4 to 0 V,ID = -3.7 A		6.5		µs
Fall time *1 *2	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:tickness 36µm, 25.9mm^2

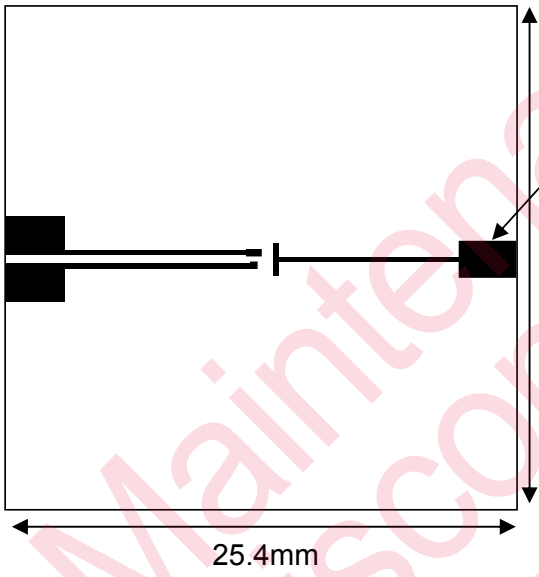

Figure2: Glass epoxy board typeB
Material:FR4, Size:25.4mm x 25.4mm x t 1.0mm, Cu pad:tickness 36µm, 82.0mm^2

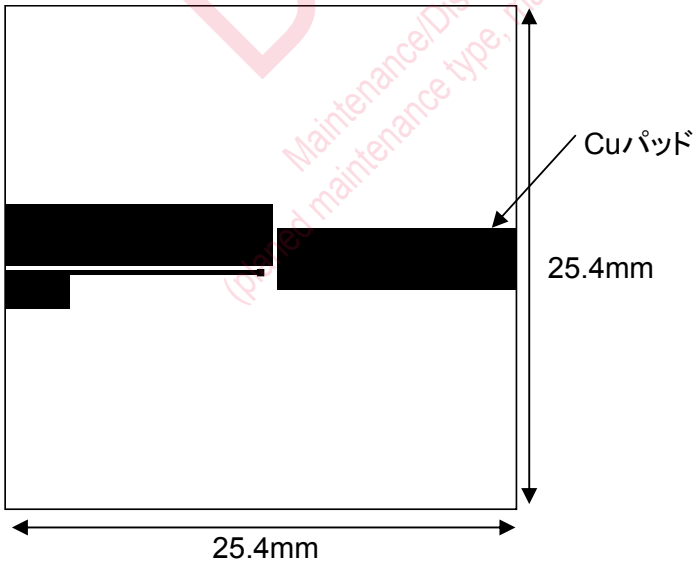

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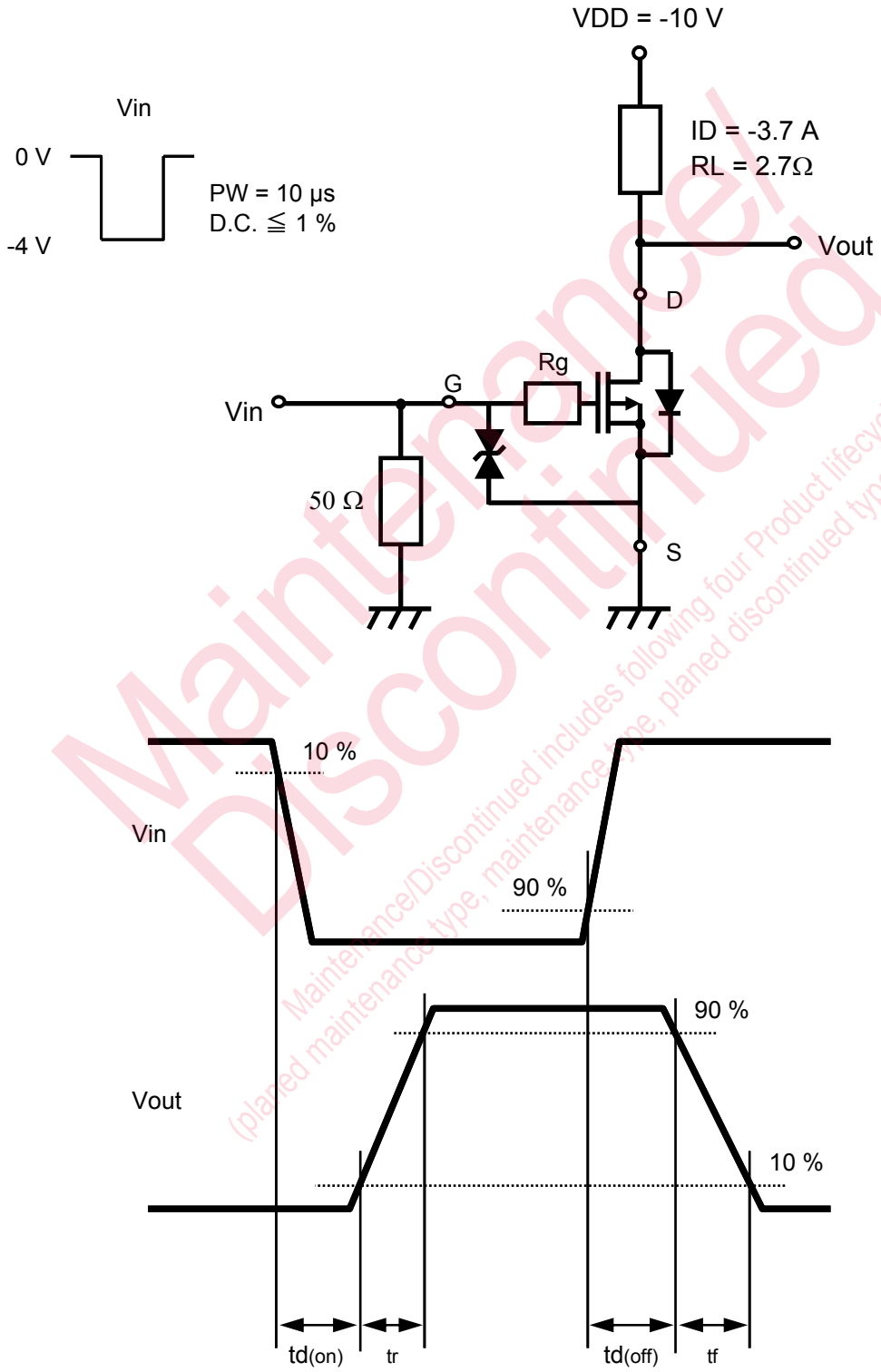
Figure3: Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time



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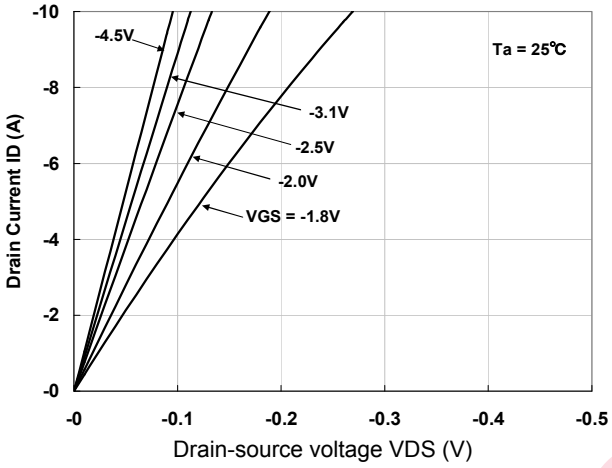
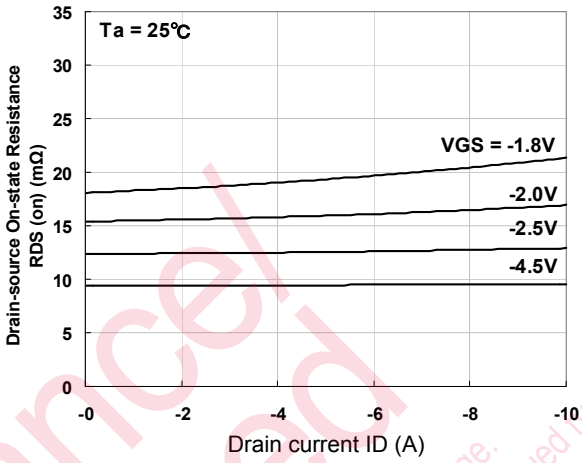
Technical Data (reference)

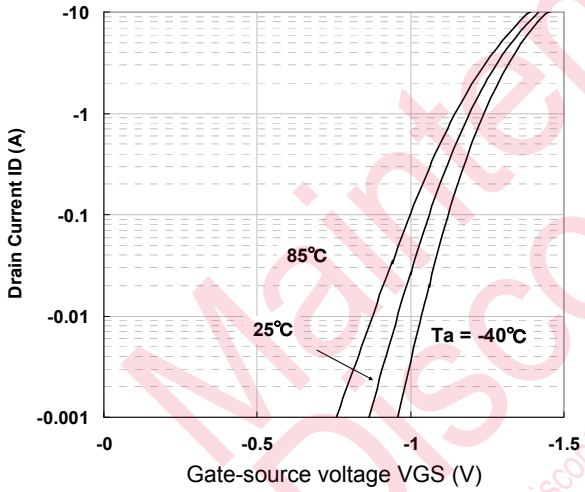
ID - VDS



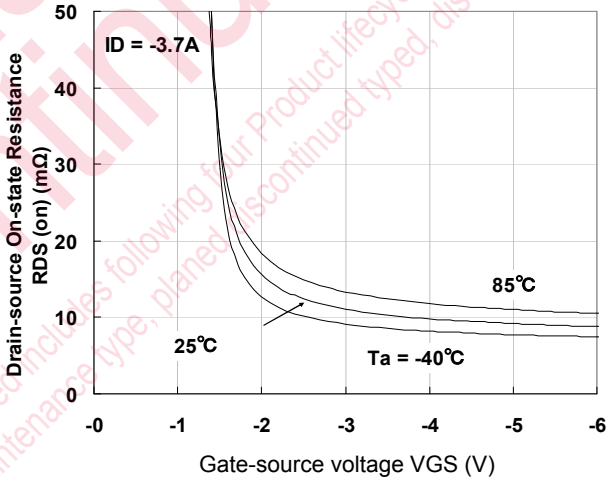
RDS(on) - ID



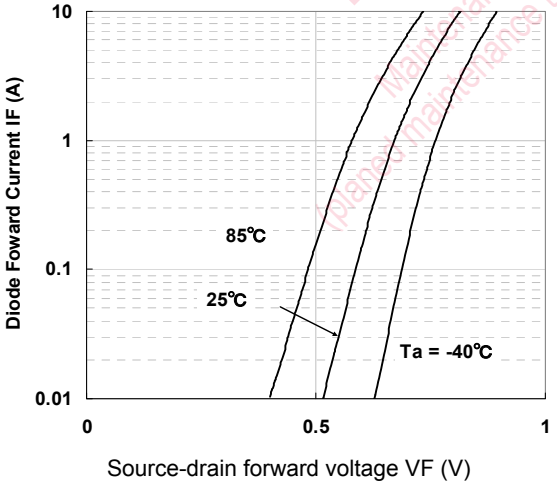
ID - VGS



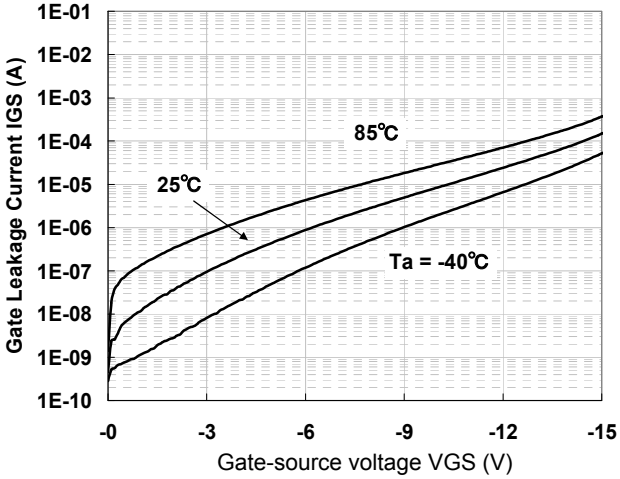
RDS(on) - VGS



IF - VF



IGS - VGS



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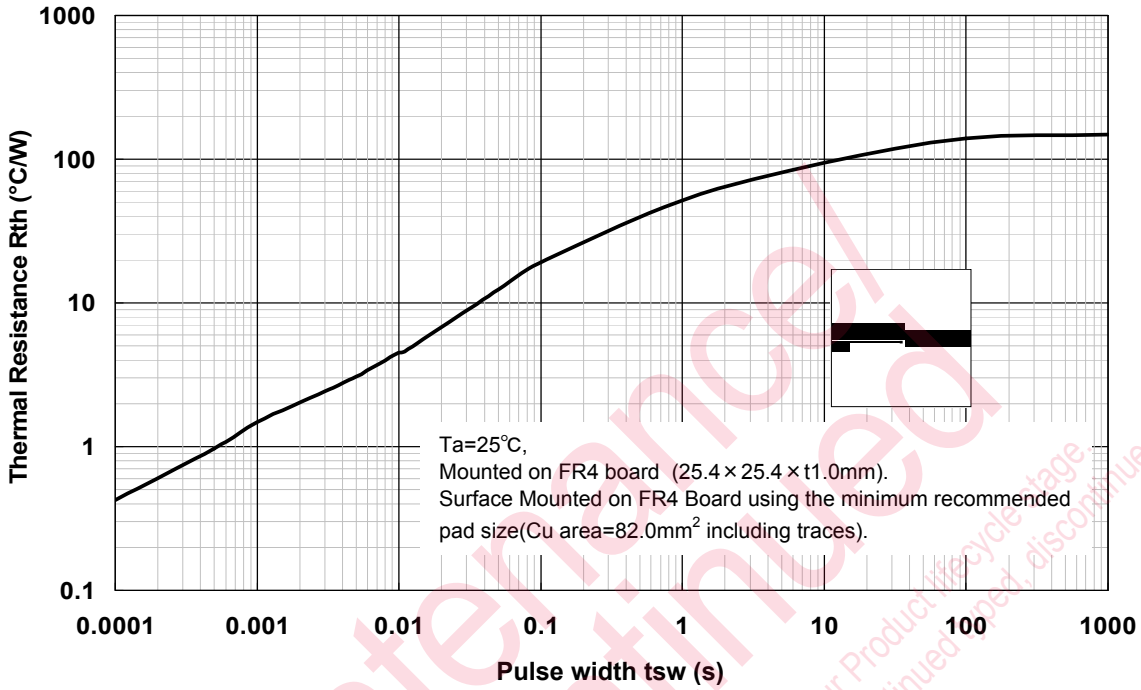
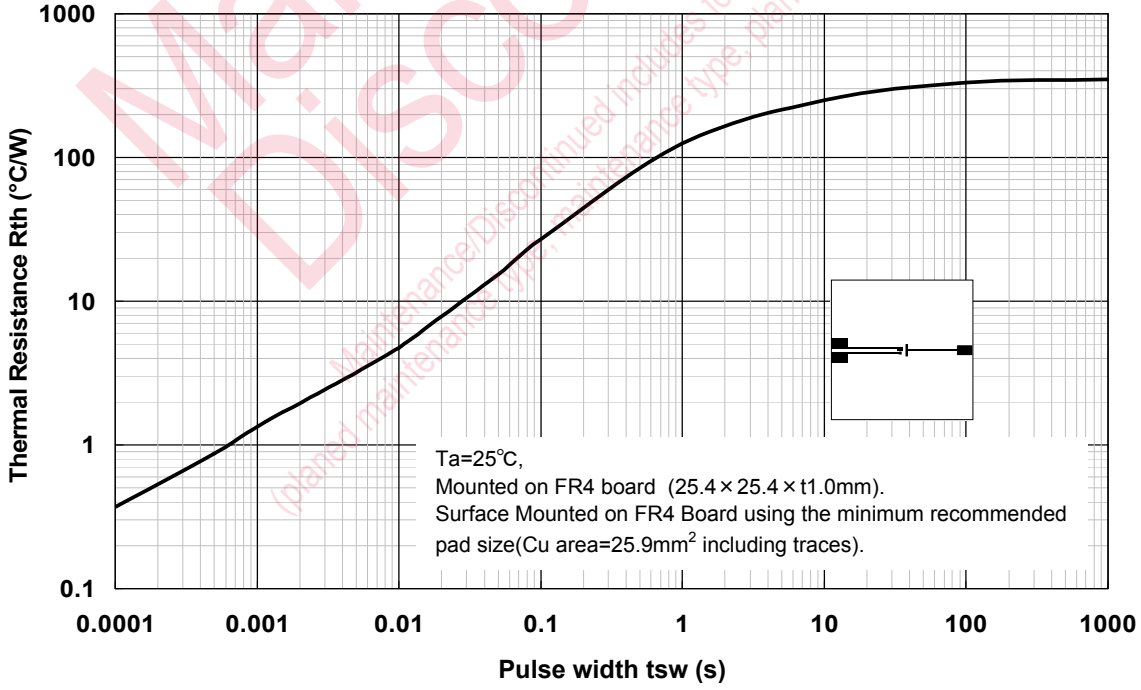
Technical Data (reference)

Rth - tsw



Rth - tsw



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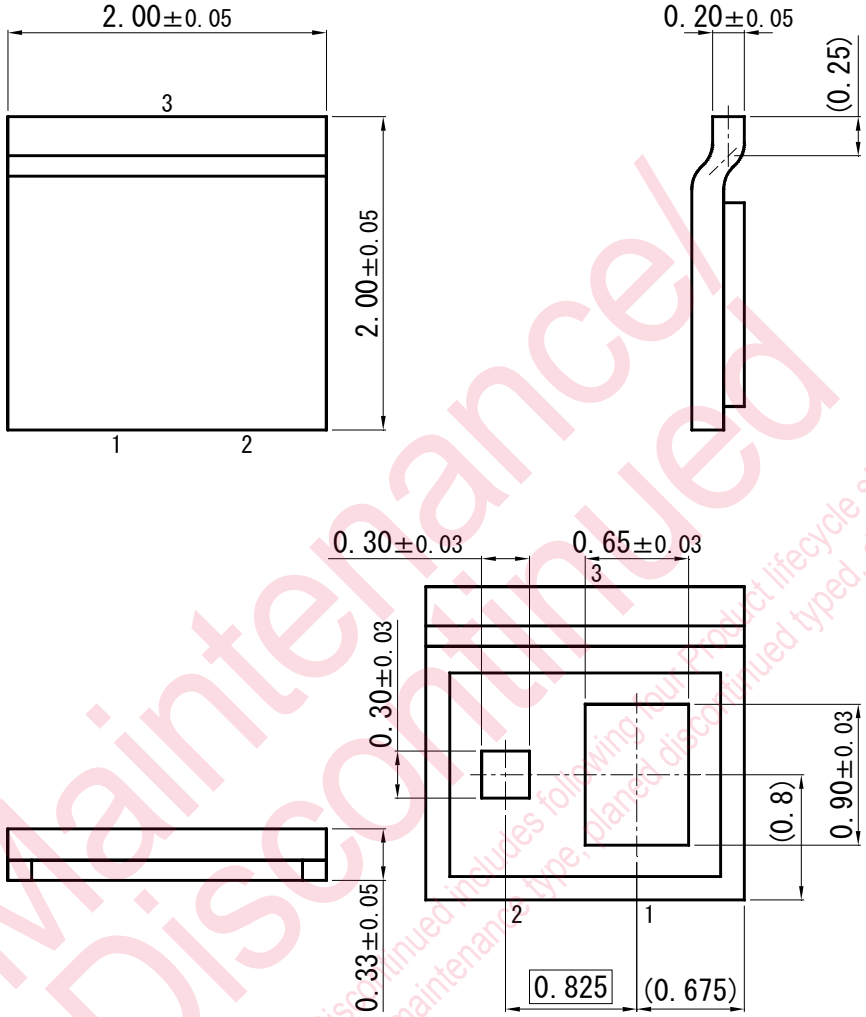
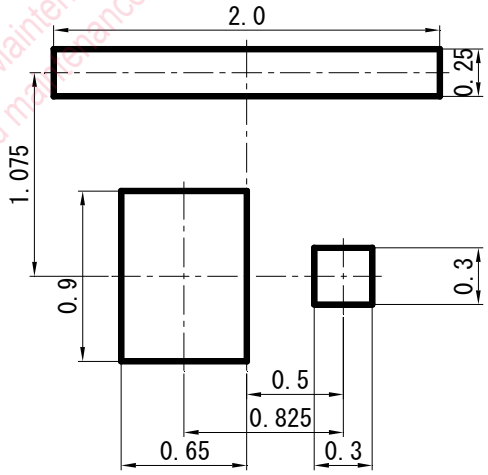
PMCP-2020-Z1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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