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FK3P02110L

Silicon N-channel MOSFET

For Load-switching

■ Features

- Low drain-source ON resistance: $R_{DS(on)typ.} = 12.5m\Omega$ ($V_{GS} = 2.5 V$)
- High heat dissipated and ultra-compact package PMCP
- RoHS compliant (EU RoHS / MSL:Level 1 compliant)

■ Marking Symbol: A1

■ 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	24	V
Gate-source voltage	VGS	± 12	V
Drain current	$T_a = 25\text{ }^\circ\text{C}$, DC ^{*2}	ID1	3.0
	$T_a = 25\text{ }^\circ\text{C}$, DC ^{*3}	ID2	6.0
Drain current (Pulsed)	$T_a = 25\text{ }^\circ\text{C}$ ^{*1*2}	IDp1	9.0
	$T_a = 25\text{ }^\circ\text{C}$ ^{*1*3}	IDp2	18.0
Total power dissipation	$T_a = 25\text{ }^\circ\text{C}$, DC ^{*2}	PD1	200
	$T_a = 25\text{ }^\circ\text{C}$, DC ^{*3}	PD2	750
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 $T_a = 25\text{ }^\circ\text{C} \pm 3\text{ }^\circ\text{C}$

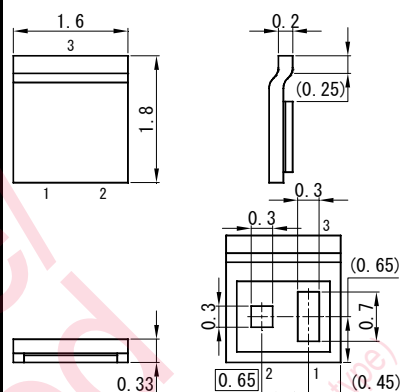
Static Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	VDSS	ID = 1.0 mA, VGS = 0 V	24			V
Zero gate voltage drain current	IDSS	VDS = 24 V, VGS = 0 V			1.0	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	0.4	0.85	1.4	V
Drain-source on-state resistance	RDS(on)	ID = 3.0 A, VGS = 2.5 V		12.5	20.0	$m\Omega$

Dynamic Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input capacitance ^{*1}	Ciss	VDS = 10 V, VGS = 0 V, f = 1 MHz		1500		pF
Output capacitance ^{*1}	Coss			140		
Reverse transfer capacitance ^{*1}	Crss			140		

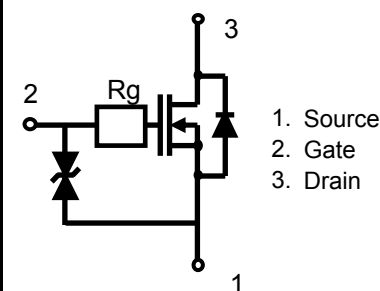
■ Package dimension Unit: mm



1. Source
2. Gate
3. Drain

Panasonic	PMCP-1816-Z1
JEITA	—
Code	—

■ Equivalent circuit, Pin name



Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Turn-on delay time ^{*1 *2}	td(on)	VDD = 10 V, VGS = 0 to 4 V, ID = 3.0 A		0.6		μs
Rise time ^{*1 *2}	tr			0.9		
Turn-off delay time ^{*1 *2}	td(off)	VDD = 10 V, VGS = 4 to 0 V, ID = 3.0 A		5.0		μs
Fall time ^{*1 *2}	tf			2.3		

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, 25.3mm²

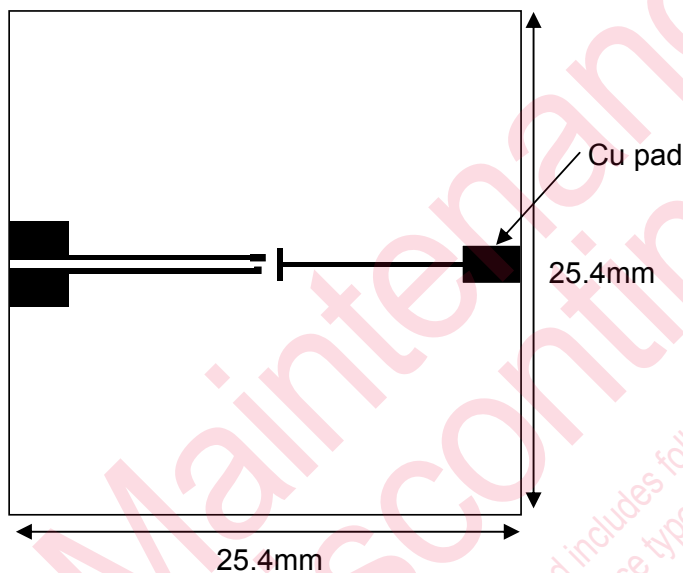


Figure2: Glass epoxy board typeB

Material:FR4, Size:25.4mm x 25.4mm x t 1.0mm, Cu pad:thickness 36μm, 82.0mm²

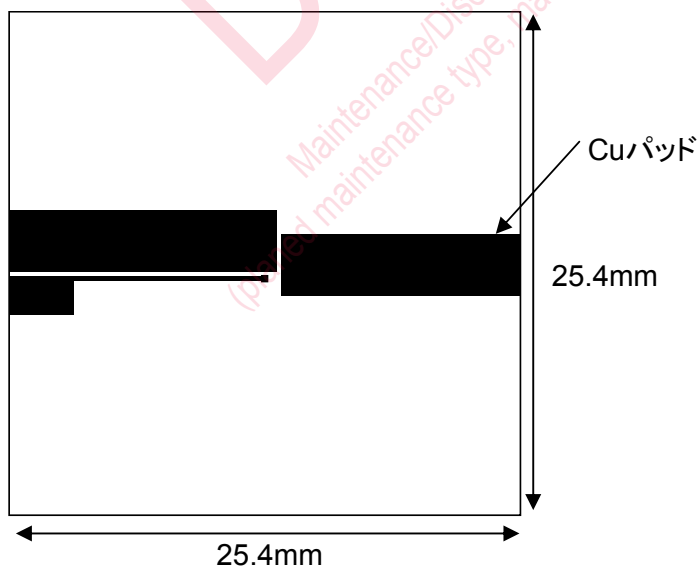
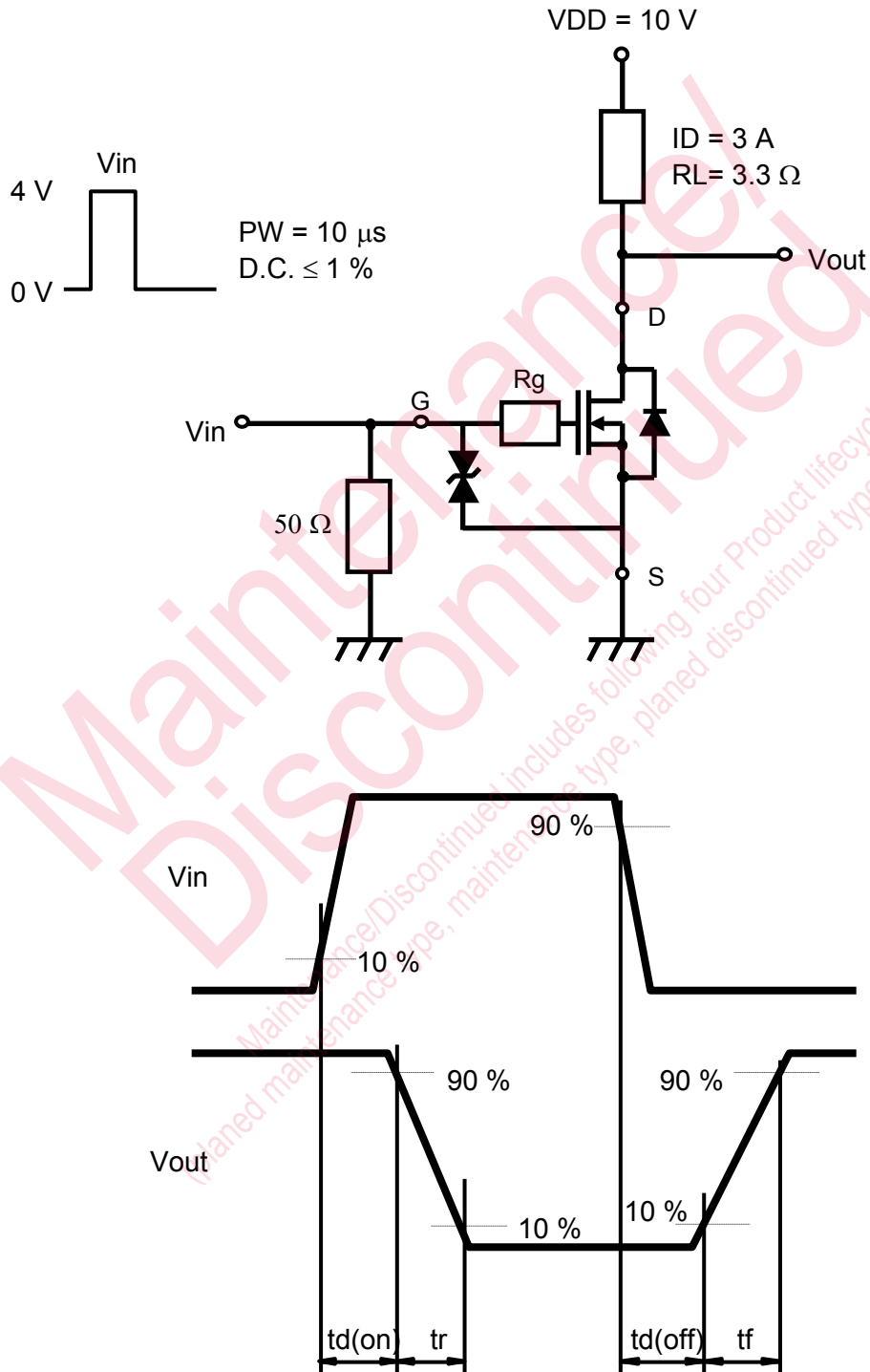


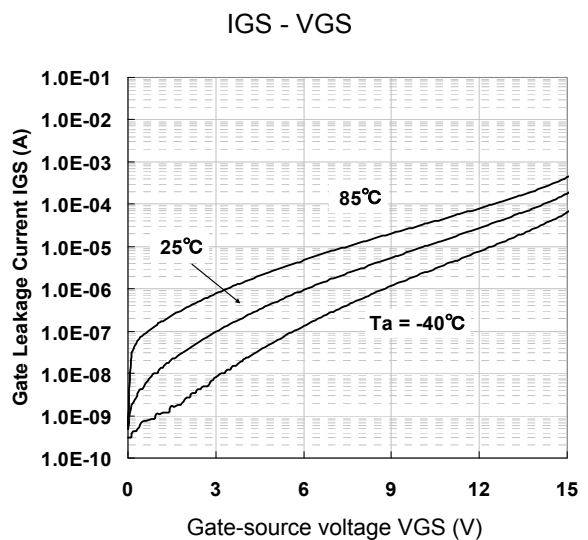
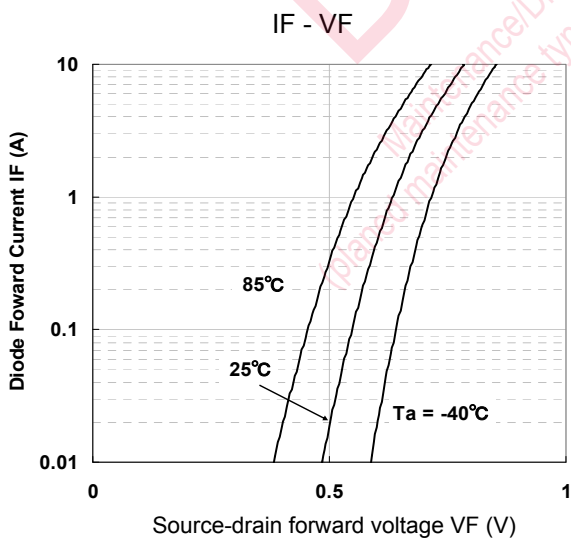
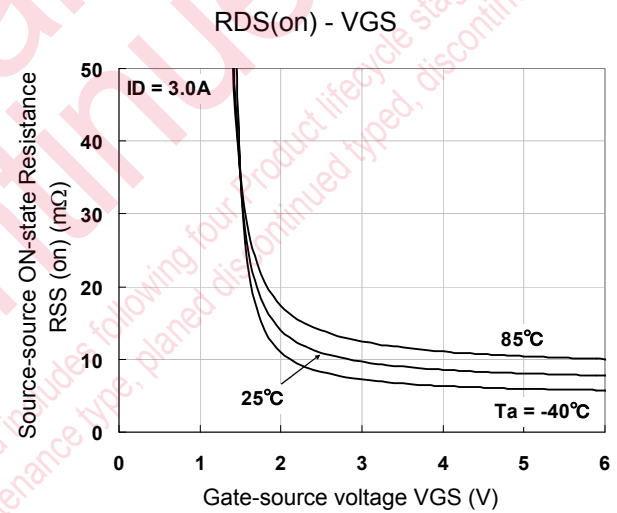
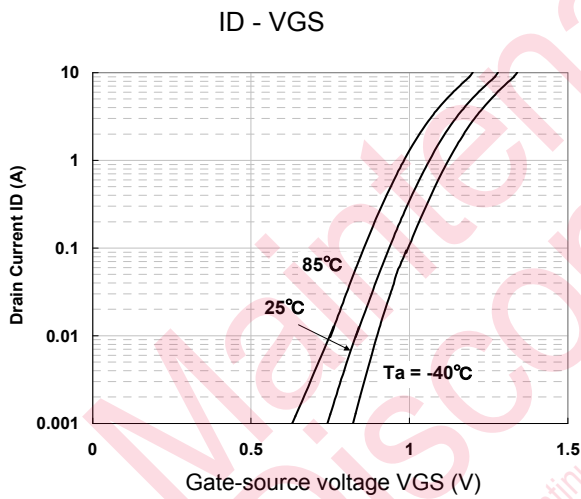
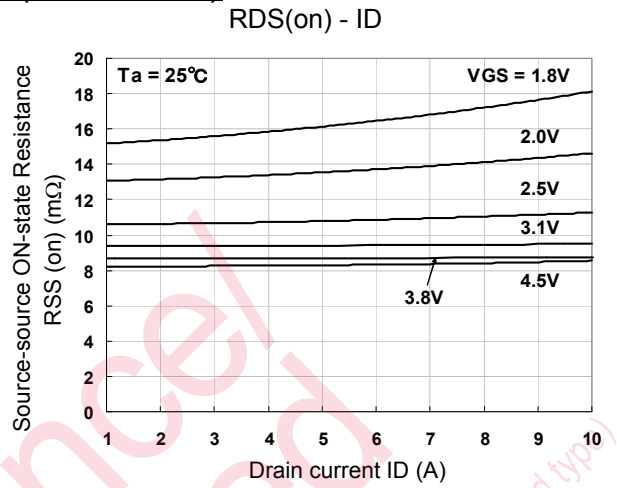
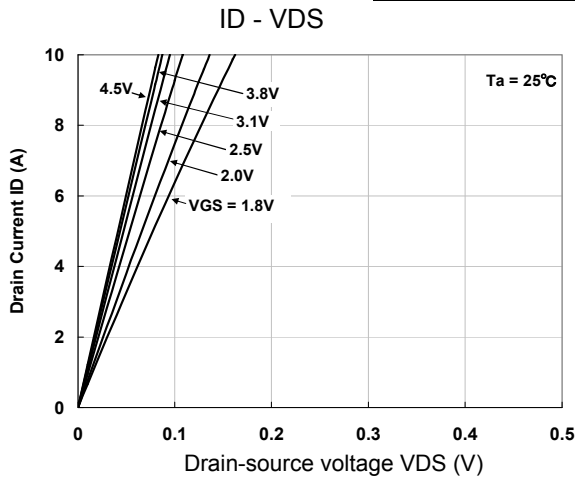


Figure3: Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time



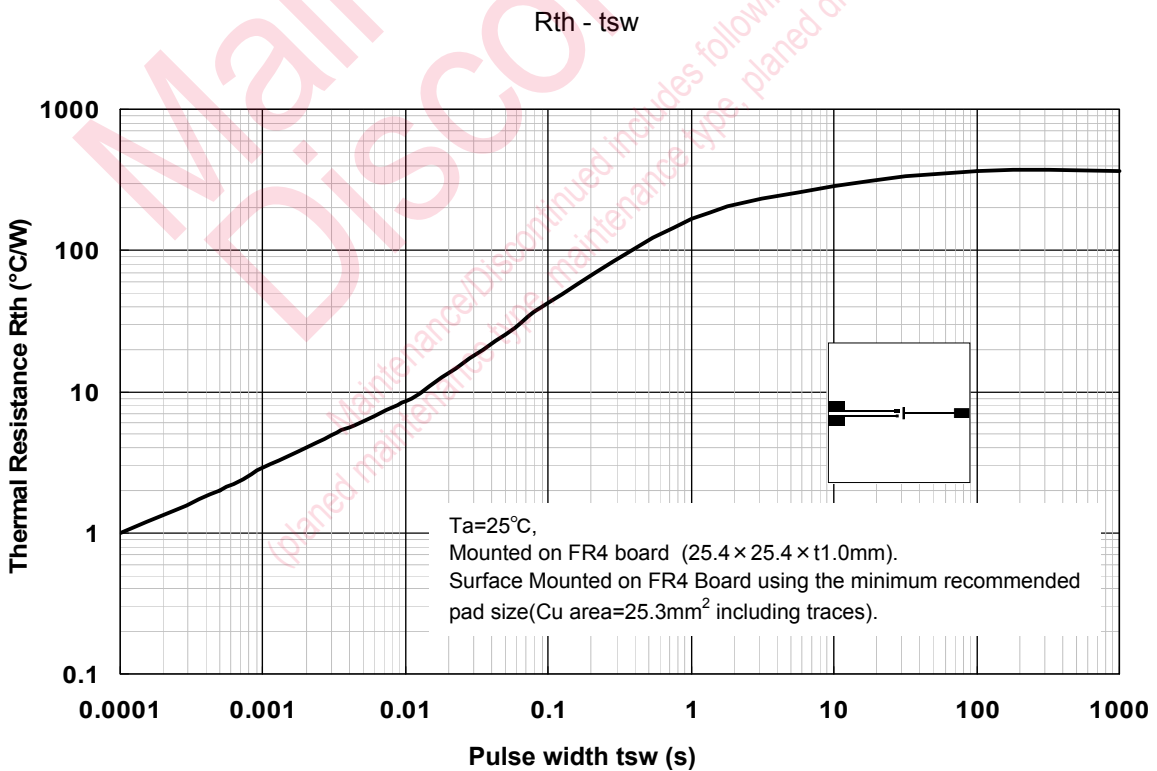
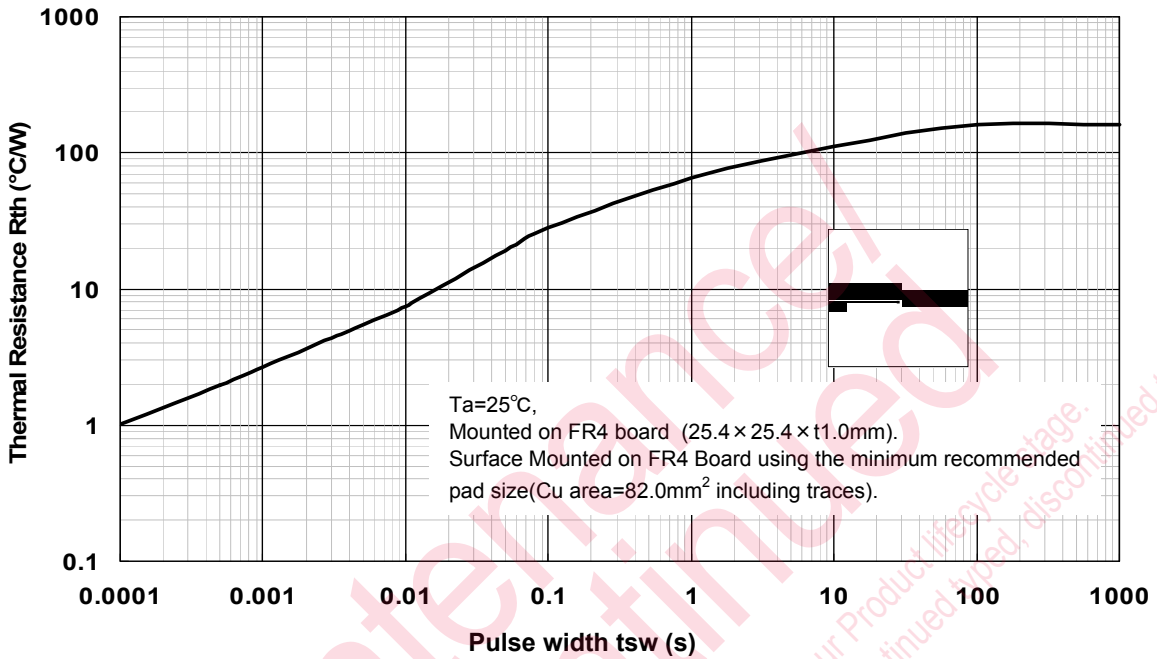


Technical Data (reference)





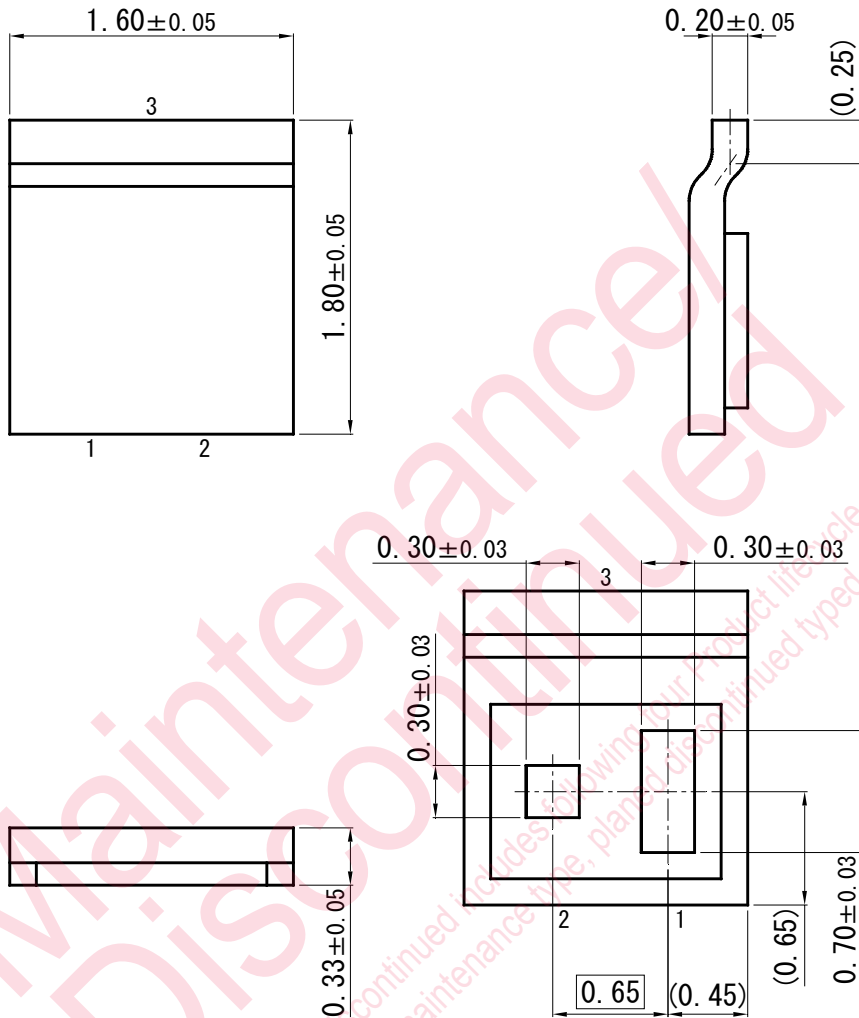
Technical Data (reference)
Rth - tsw



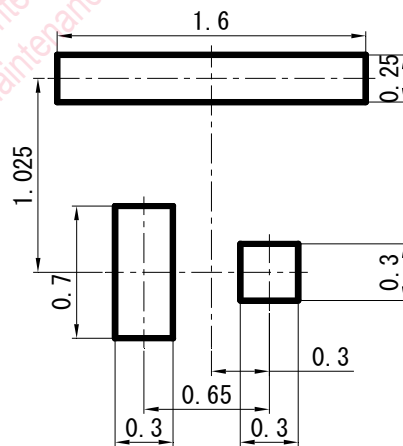


PMCP-1816-Z1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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