



FK3P02110L

Silicon N-channel MOSFET

For Load-switching

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = $12.5\text{m}\Omega$ ($V_{GS} = 2.5\text{V}$)
- 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 $T_a = 25^\circ\text{C}$

Parameter		Symbol	Rating	Unit
Drain-source voltage		VDS	24	V
Gate-source voltage		VGS	±12	V
Drain current	Ta = 25 °C, DC ^{*2}	ID1	3.0	A
	Ta = 25 °C, DC ^{*3}	ID2	6.0	
Drain current (Pulsed)	Ta = 25 °C ^{*1, *2}	IDp1	9.0	A
	Ta = 25 °C ^{*1, *3}	IDp2	18.0	
Total power dissipation	Ta = 25 °C, DC ^{*2}	PD1	200	mW
	Ta = 25 °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 $t = 10 \mu s$, 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)

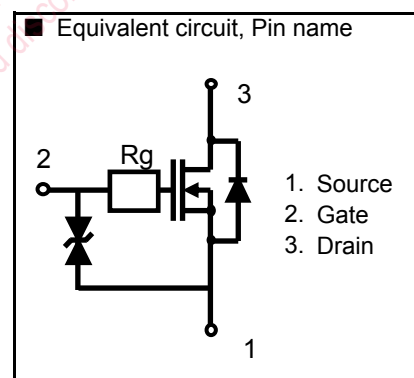
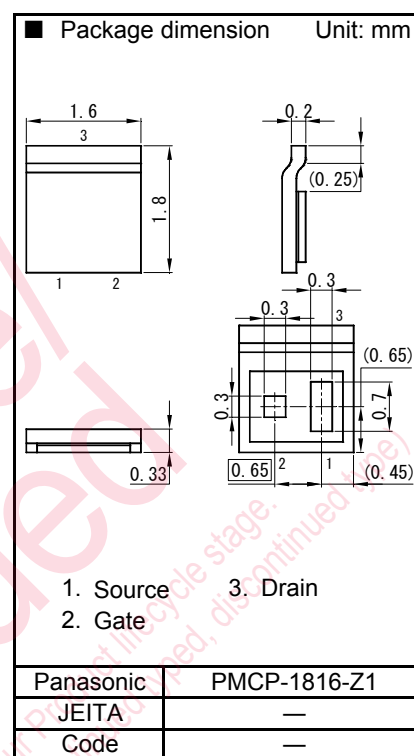
■ Electrical Characteristics $T_a = 25\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$

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	mΩ

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		



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

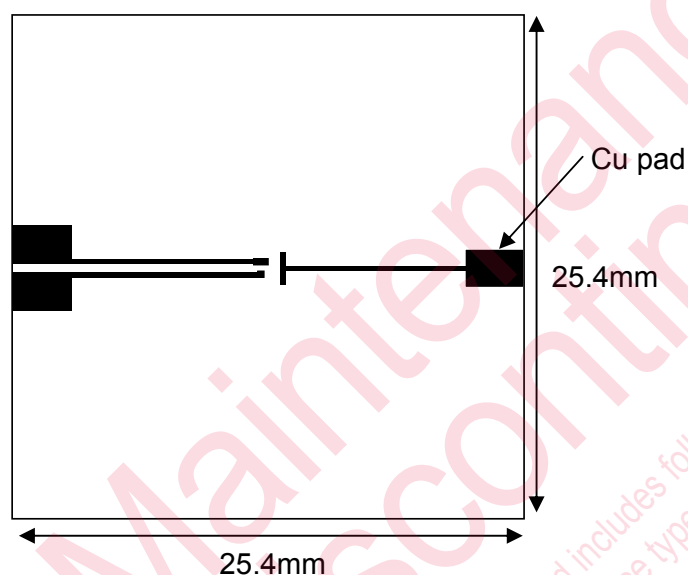
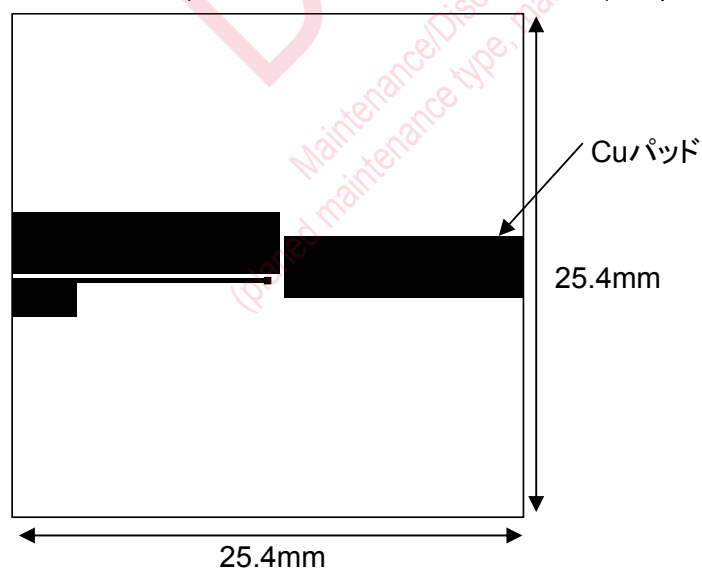


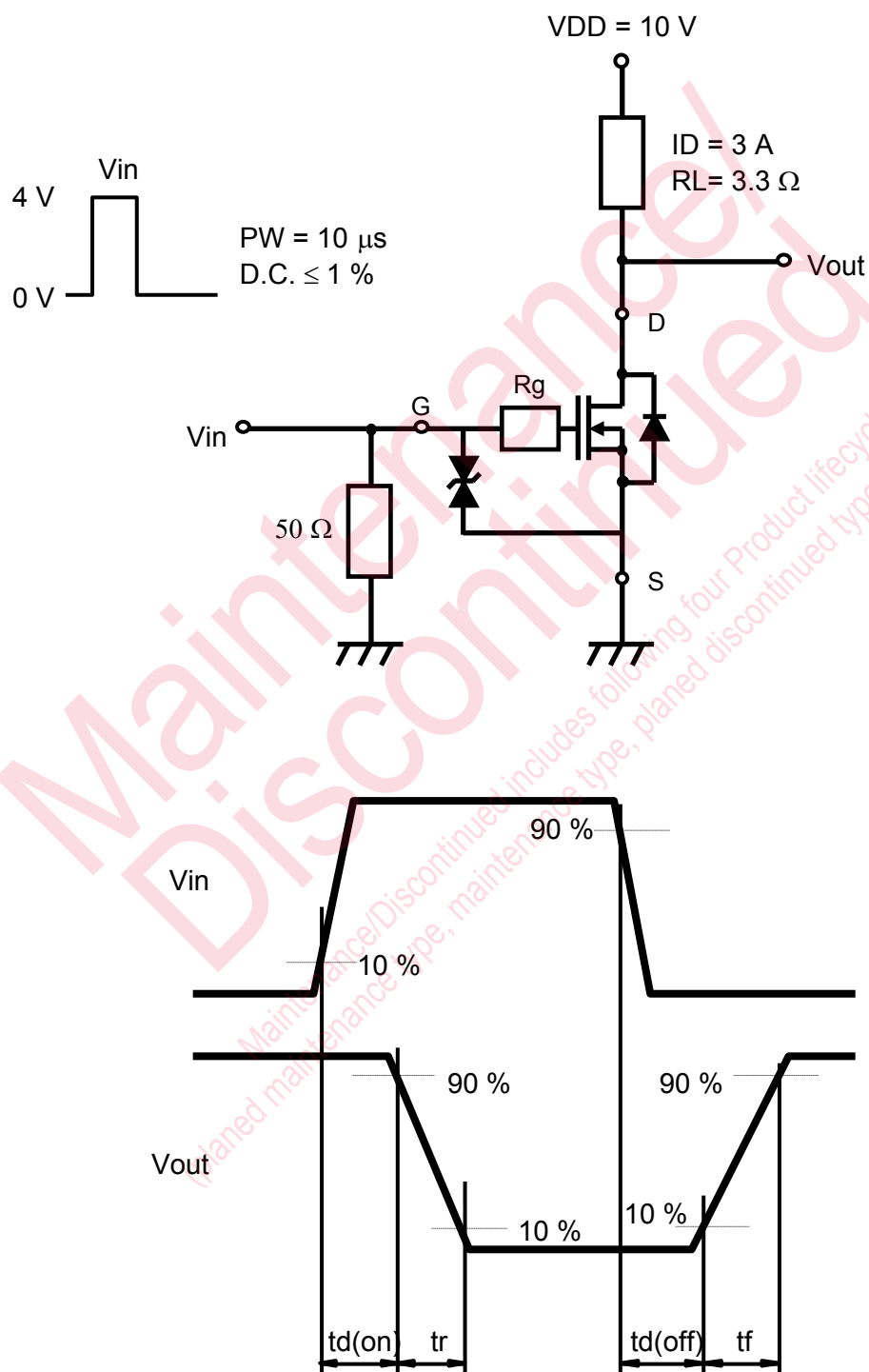
Figure2: Glass epoxy board typeB

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



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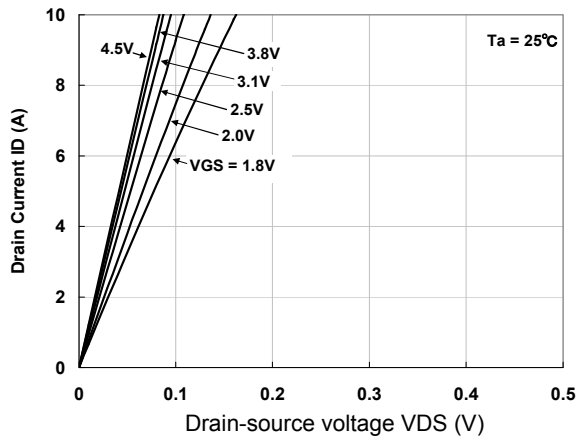
Figure3: Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time



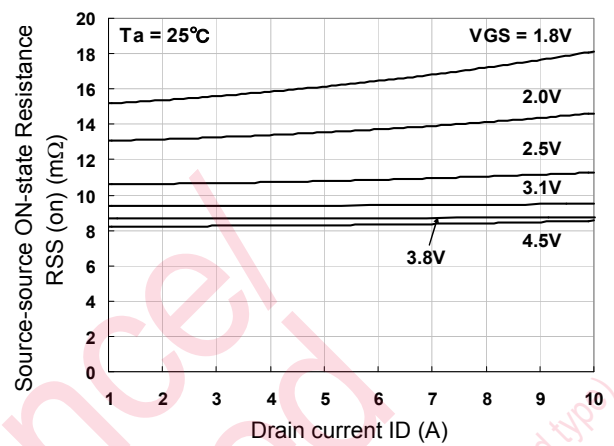


Technical Data (reference)

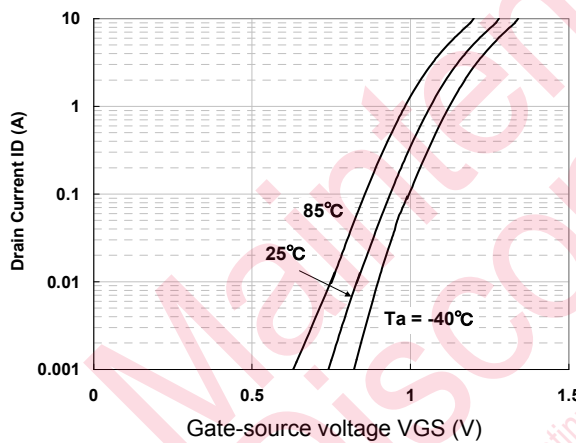
ID - VDS



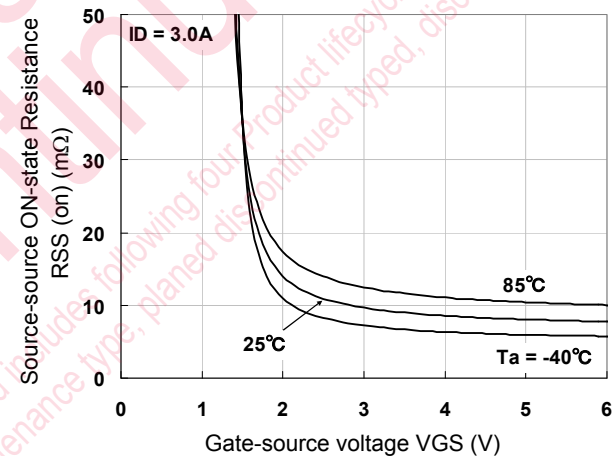
RDS(on) - ID



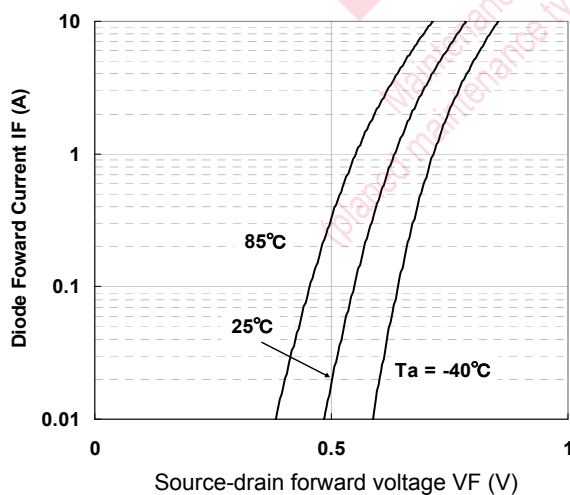
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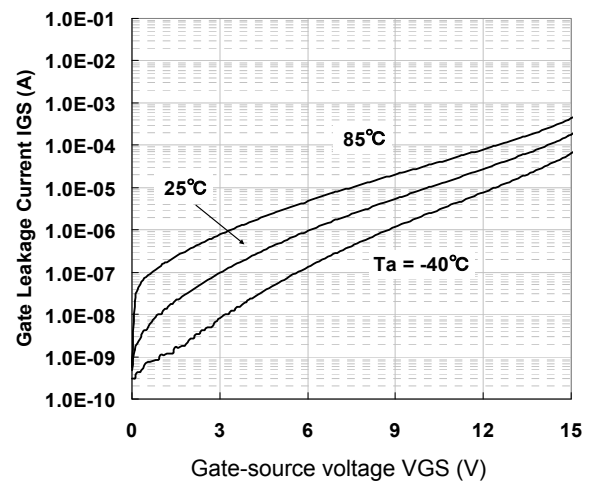
RDS(on) - VGS



IF - VF

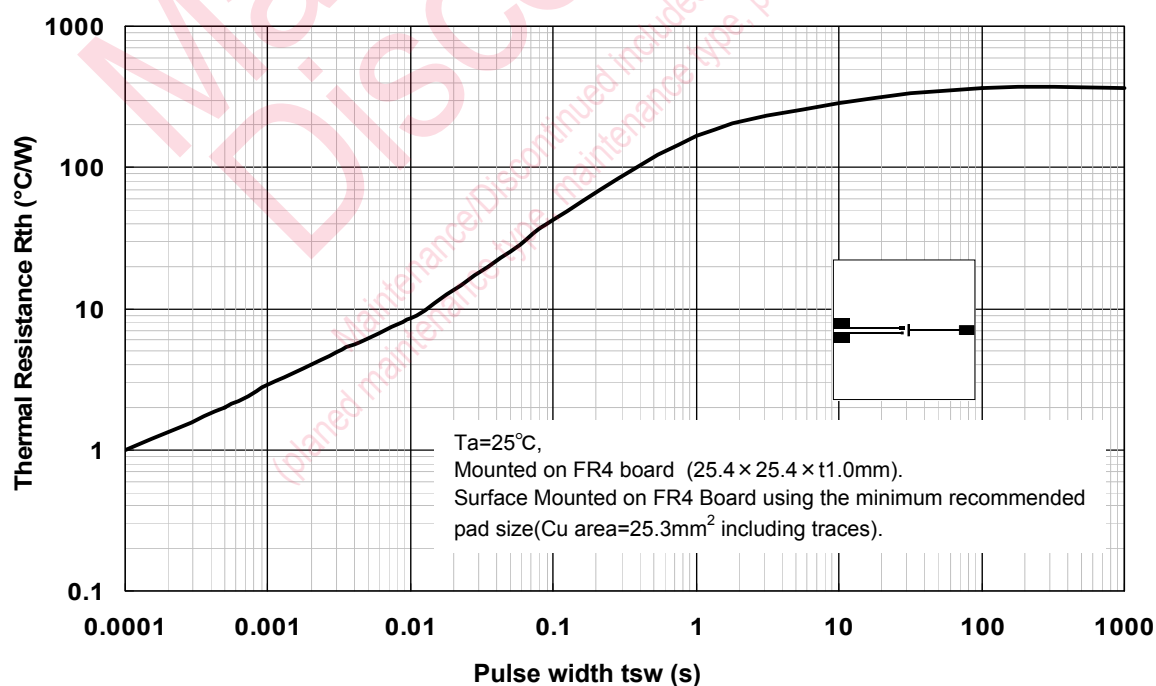
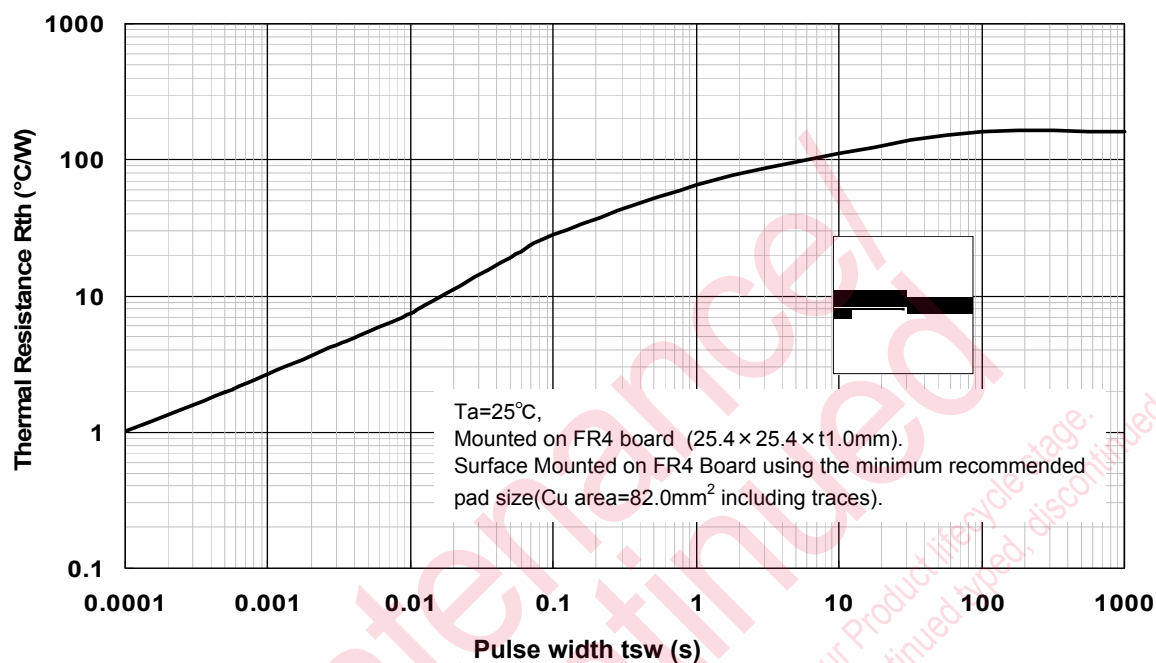


IGS - VGS



Technical Data (reference)

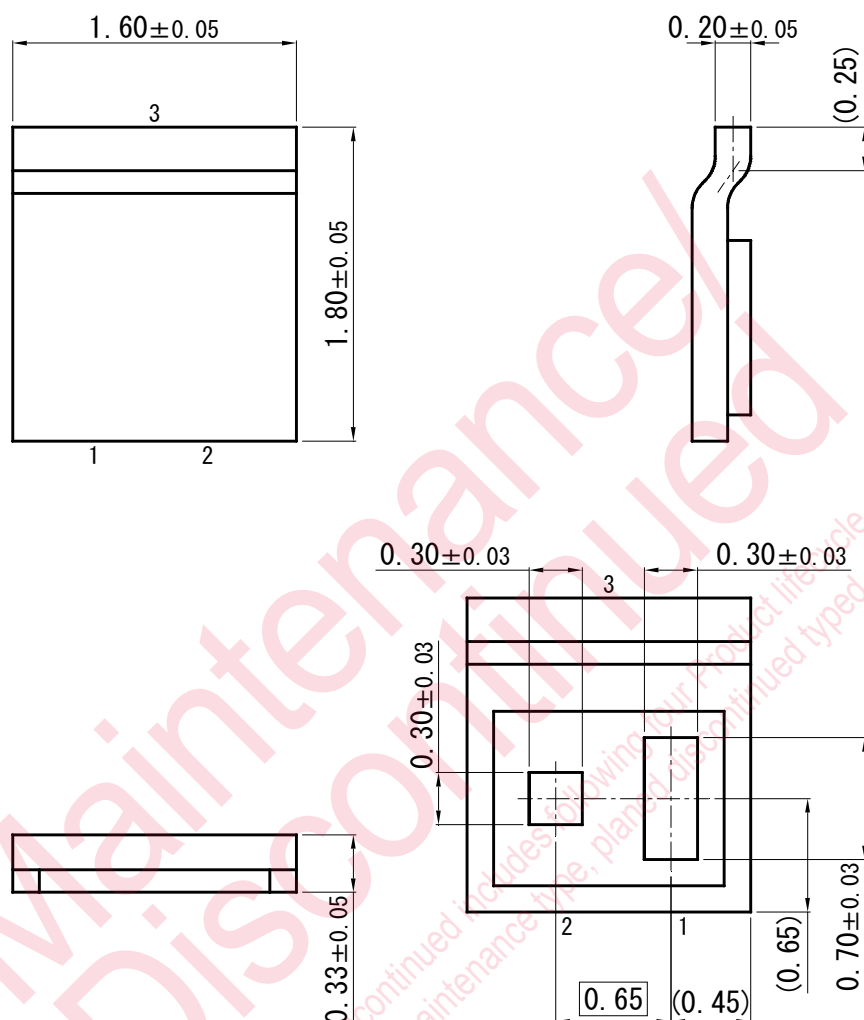
Rth - tsw



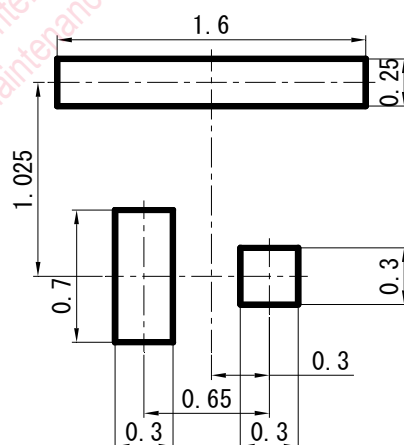
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PMCP-1816-Z1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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