



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 | ± 8 | V |
| Drain current | $T_a = 25\text{ }^\circ\text{C}$, DC ^{*2} | ID1 | -4.4 |
| | $T_a = 25\text{ }^\circ\text{C}$, DC ^{*3} | ID2 | -7.5 |
| Drain current (Pulsed) | $T_a = 25\text{ }^\circ\text{C}$ ^{*1*2} | IDp1 | -13.2 |
| | $T_a = 25\text{ }^\circ\text{C}$ ^{*1*3} | IDp2 | -22.5 |
| Total power dissipation | $T_a = 25\text{ }^\circ\text{C}$, DC ^{*2} | PD1 | 300 |
| | $T_a = 25\text{ }^\circ\text{C}$, DC ^{*3} | PD2 | 850 |
| Channel temperature | Tch | 150 | $^\circ\text{C}$ |
| Storage temperature range | Tstg | -55 to +150 | $^\circ\text{C}$ |

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)

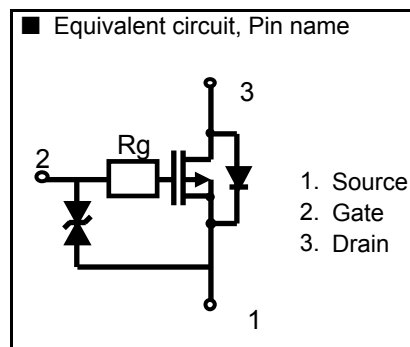
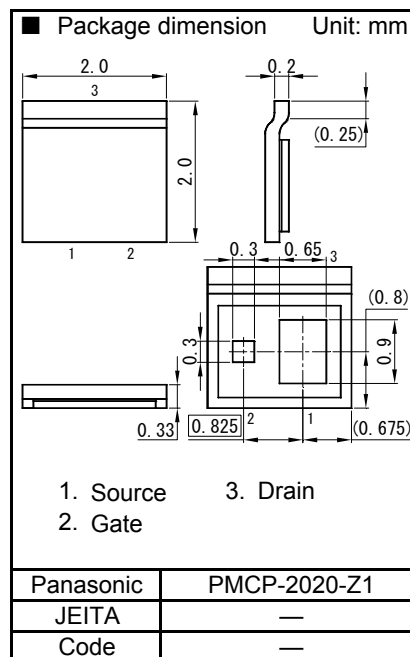
■ Electrical Characteristics $T_a = 25\text{ }^\circ\text{C} \pm 3\text{ }^\circ\text{C}$

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 | μA |
| Gate-source leakage current | IGSS | $V_{GS} = \pm 8\text{ V}$, $V_{DS} = 0\text{ V}$ | | | ± 10 | μA |
| 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 Ω |
| | 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 ^{*1} | Ciss | $V_{DS} = -10\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1\text{ MHz}$ | | 3000 | | pF |
| Output capacitance ^{*1} | Coss | | | 330 | | |
| Reverse transfer capacitance ^{*1} | Crss | | | 350 | | |





| 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:thickness 36μm, 25.9mm²

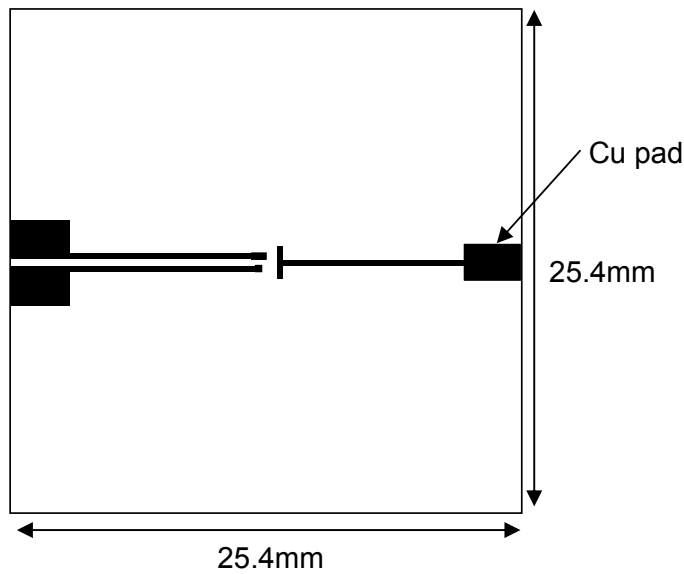


Figure2: Glass epoxy board typeB
 Material:FR4, Size:25.4mm x 25.4mm x t 1.0mm, Cu pad:thickness 36μm, 82.0mm²

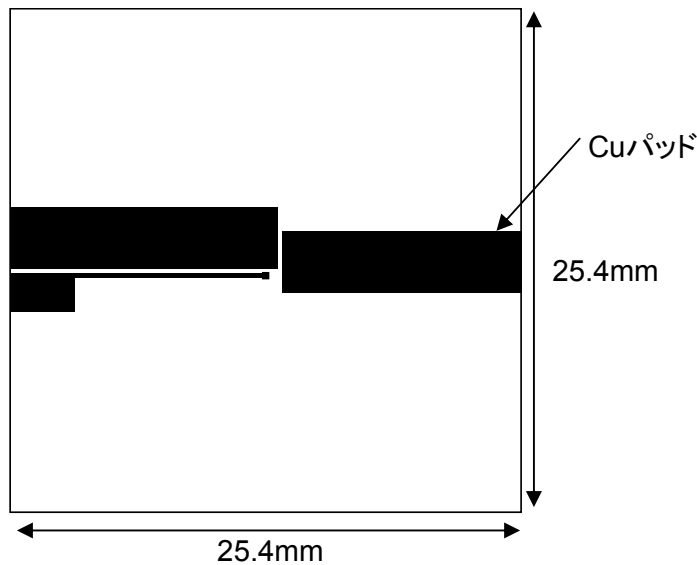
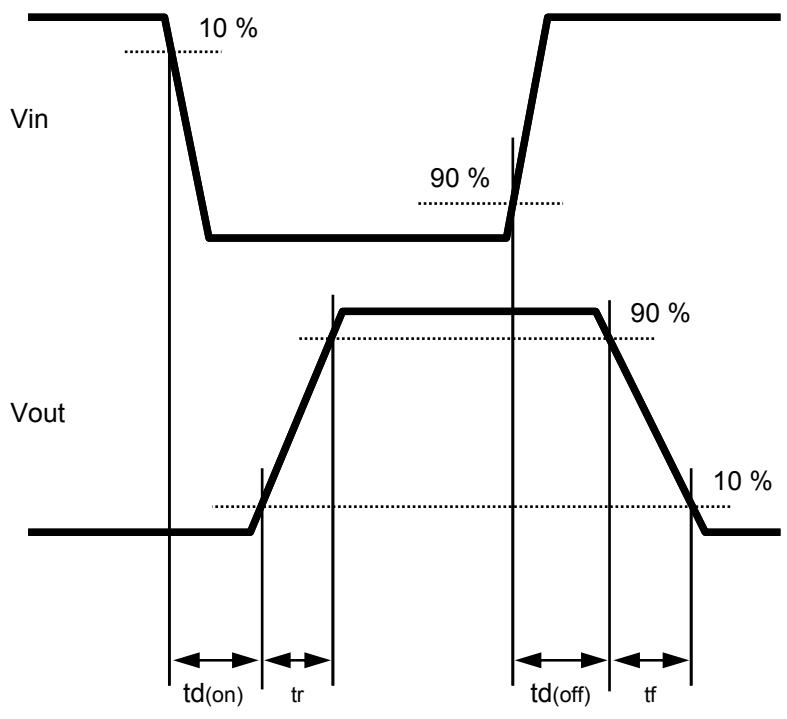
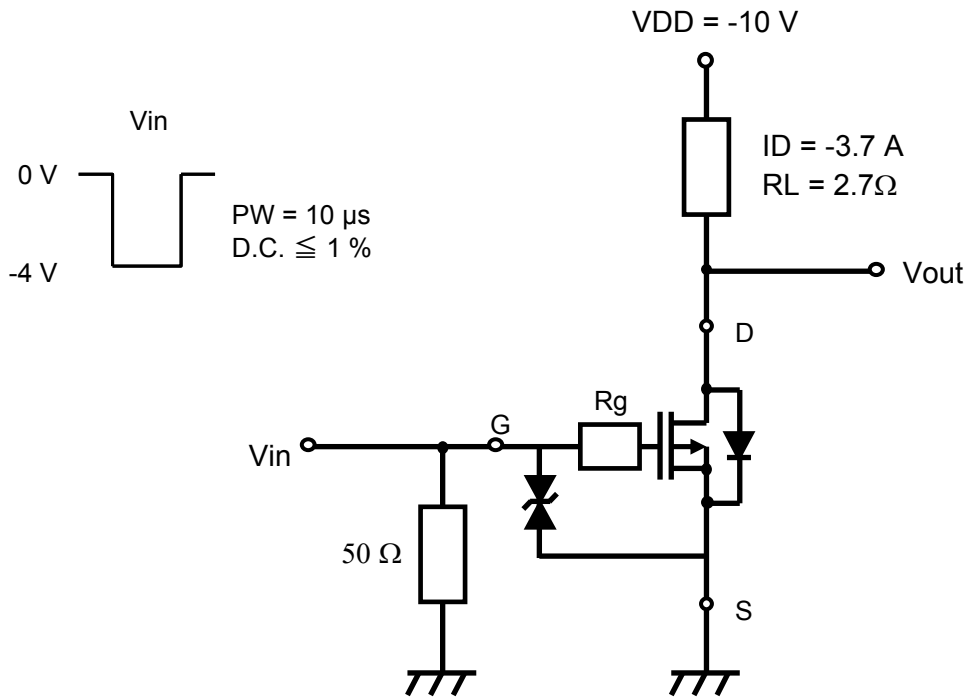
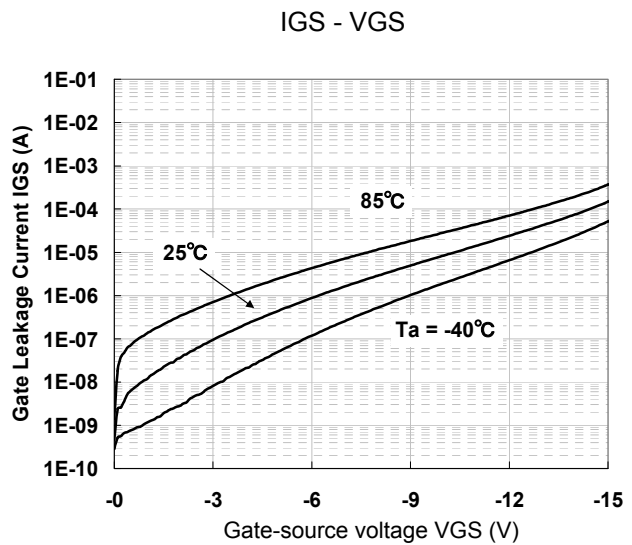
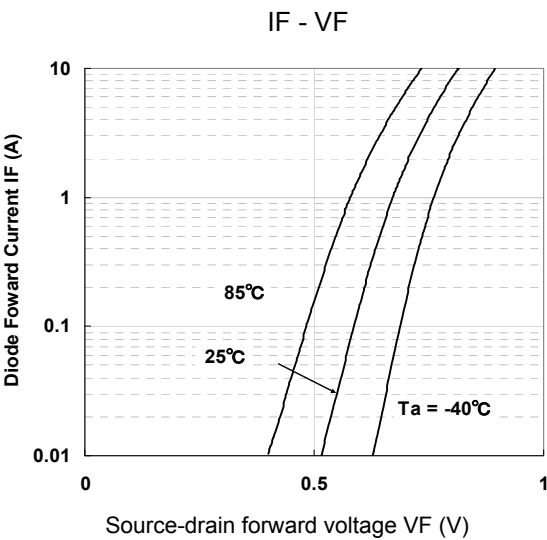
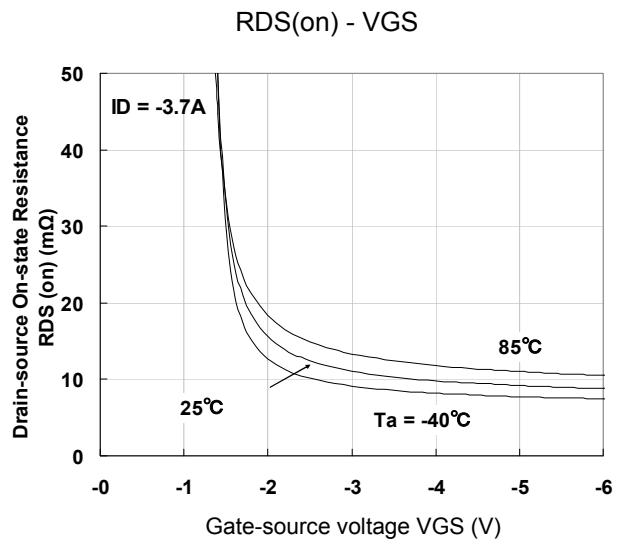
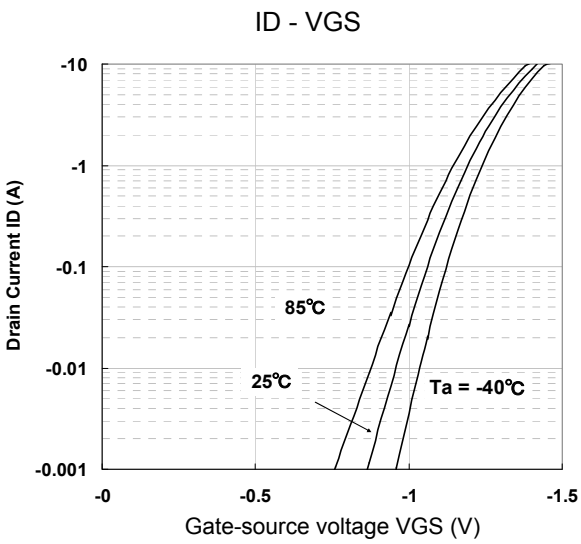
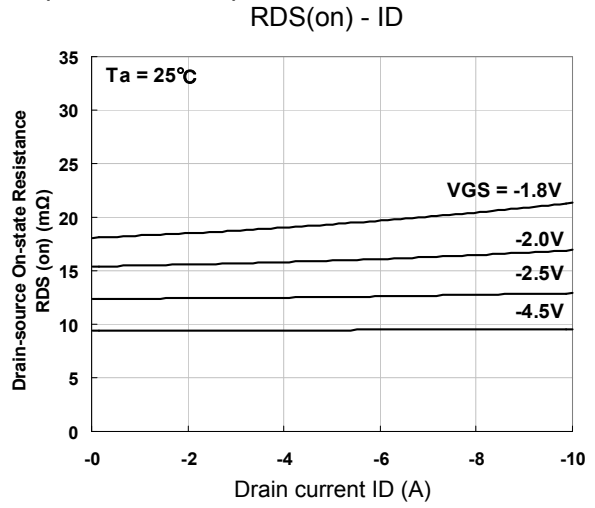
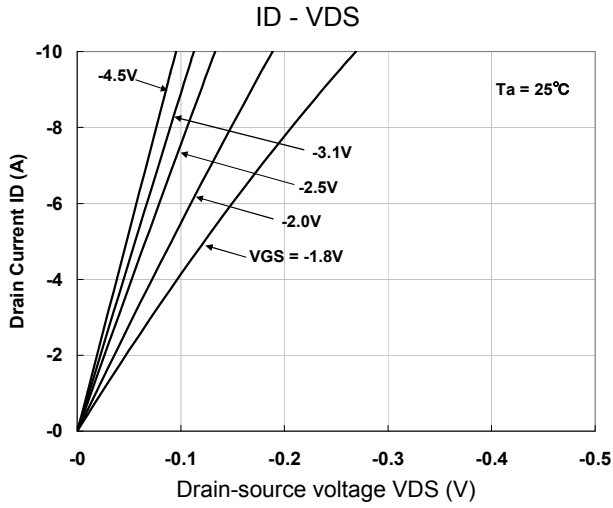




Figure3: Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time



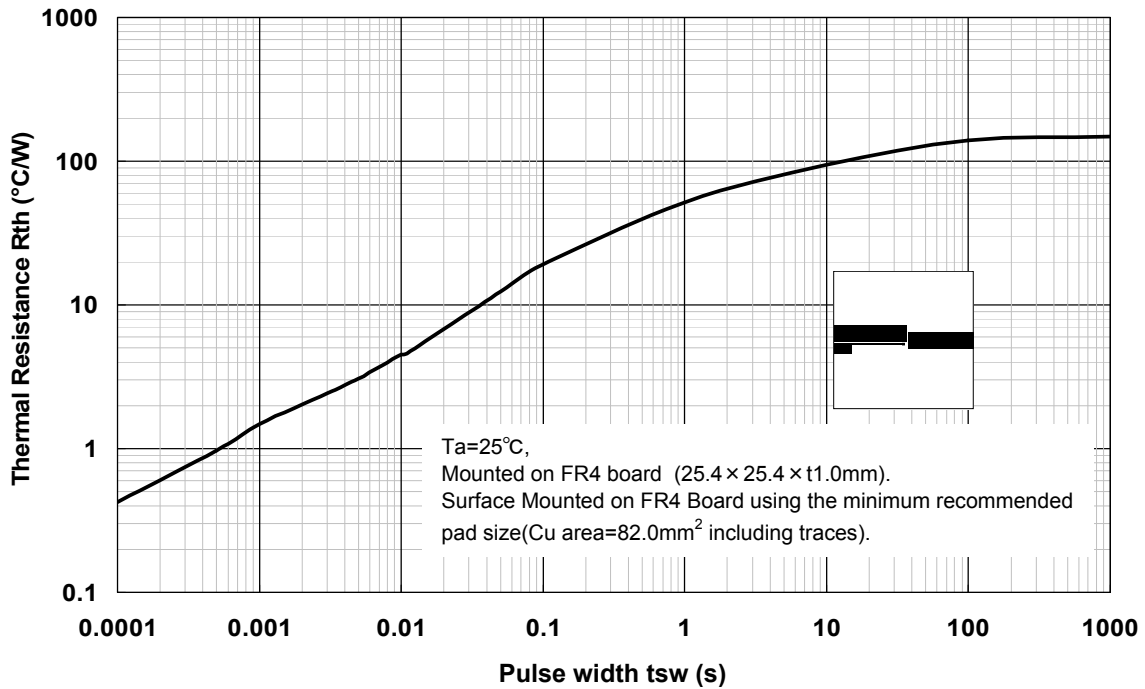
Technical Data (reference)



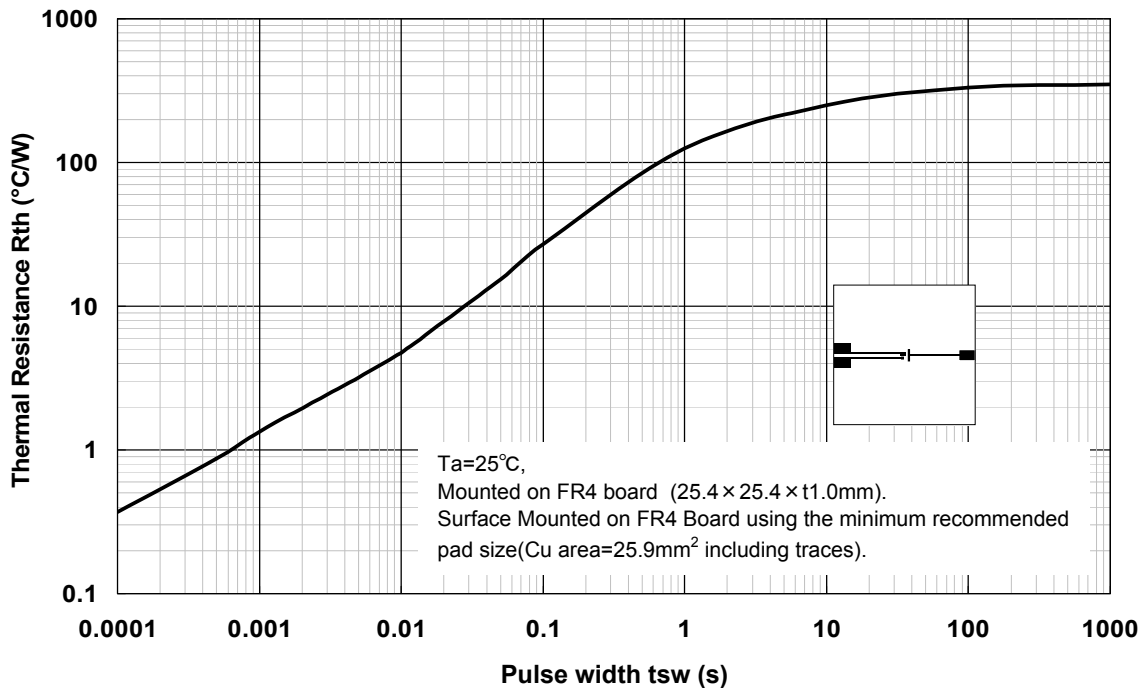


Technical Data (reference)

Rth - tsw

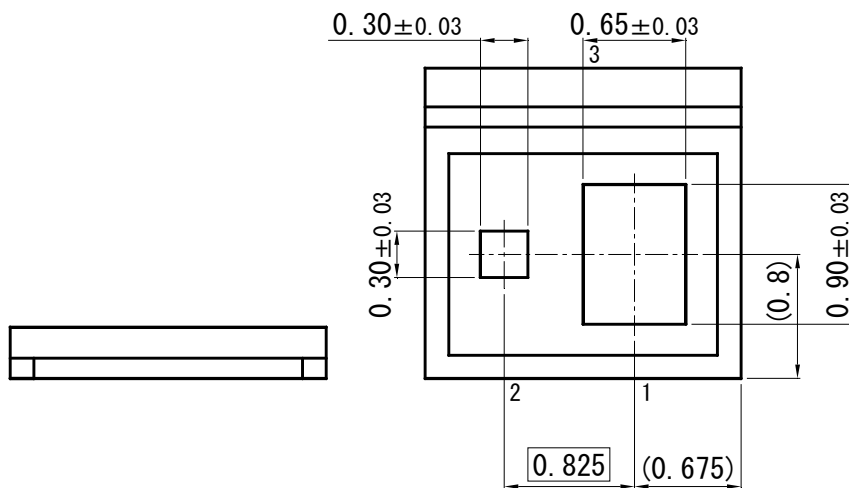
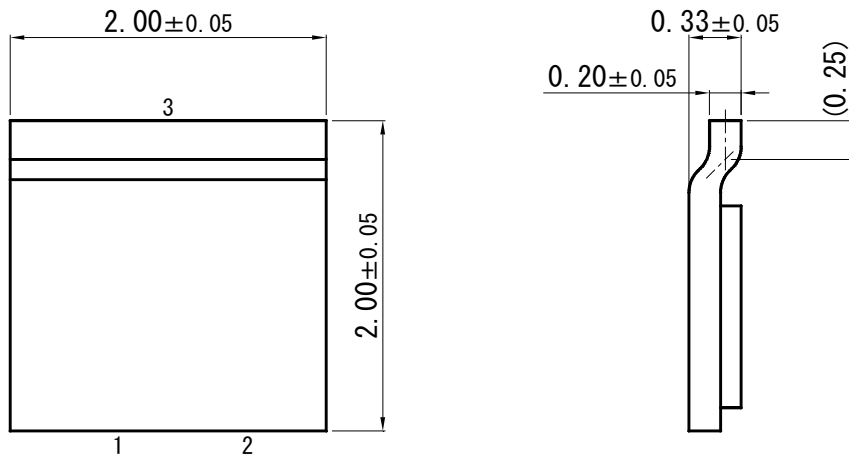


Rth - tsw

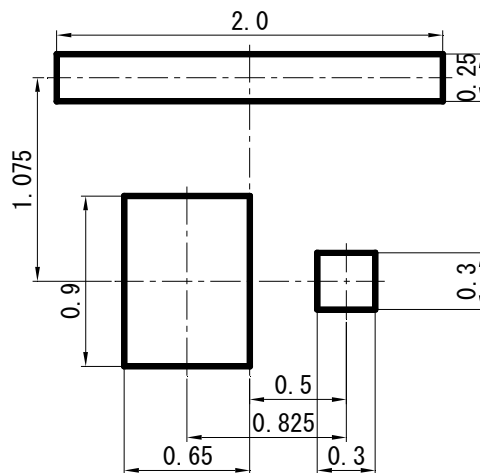


PMCP-2020-Z1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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