ShinDengen

# D5FY10ST

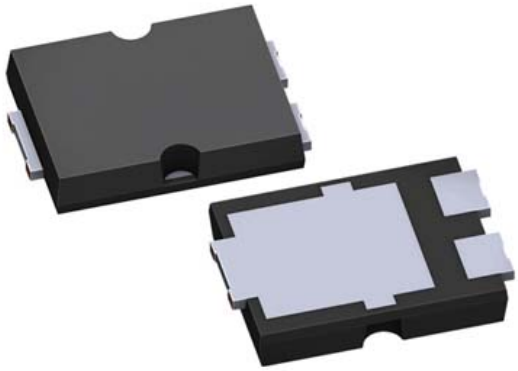
## Schottky Barrier Diodes
## 100V, 5A

### Feature

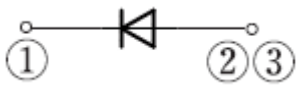
- Permit high current with a small package
- Tj=175℃
- Ultra low $I_R$
- Based on AEC-Q101
- Halogen free
- Pb free terminal
- RoHS:Yes

### OUTLINE

**Package (House Name):** FY
**Package (JEDEC Code):** TO-277A similar



### Equivalent circuit




### Absolute Maximum Ratings (unless otherwise specified : Tl=25℃)

| Item | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Storage temperrature | Tstg | | -55 to 175 | ℃ |
| Junction temperature | Tj | | -55 to 175 | ℃ |
| Repetitive peak reverse voltage | $V_{RRM}$ | | 100 | V |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, With heatsink ,Tl=162℃ ※ | 5 | A |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, On alumina substrate, Ta=25℃ ※ | 3.4 | A |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25℃ ※ | 3.1 | A |
| Surge forward current | $I_{FSM}$ | 50Hz sine wave, Non-repetitive, 1cycle, Peak value, Tj=25℃ | 210 | A |

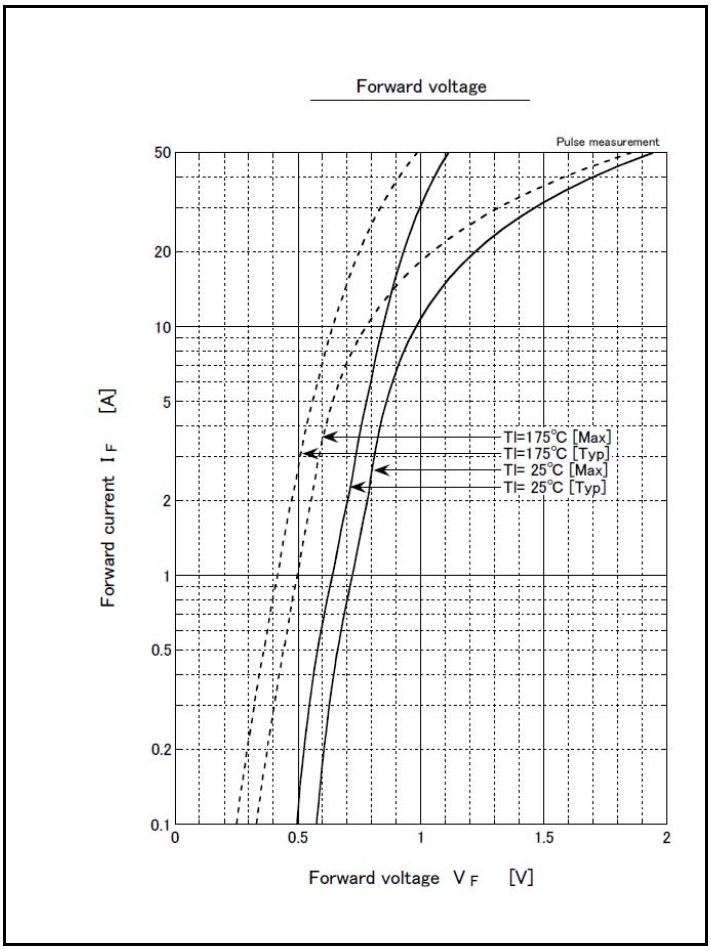
※ :See the original Specifications

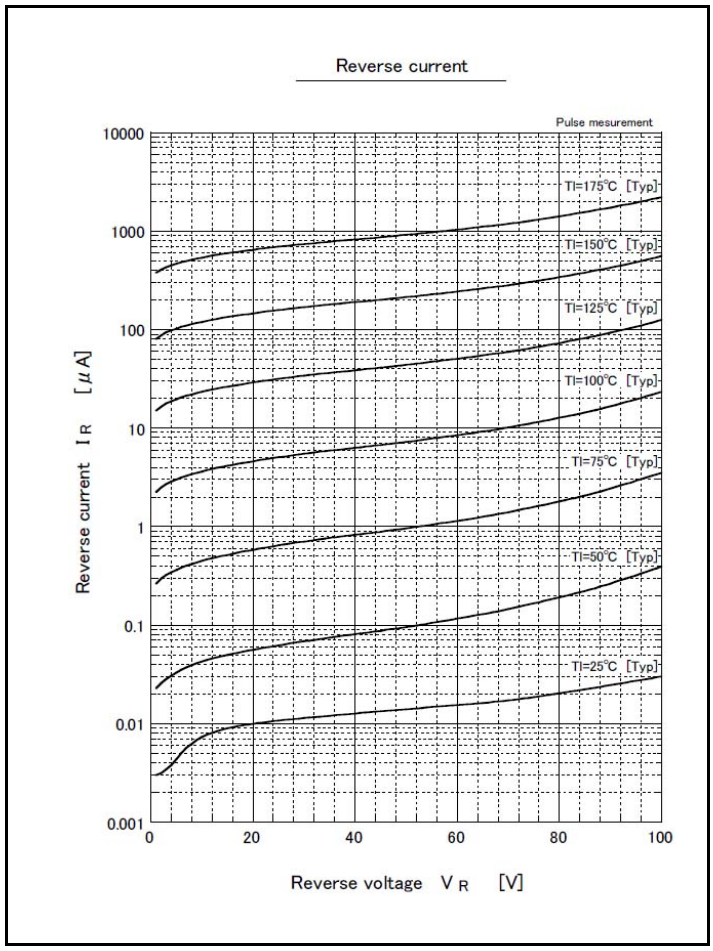
## Electrical Characteristics (unless otherwise specified : Tl=25℃)

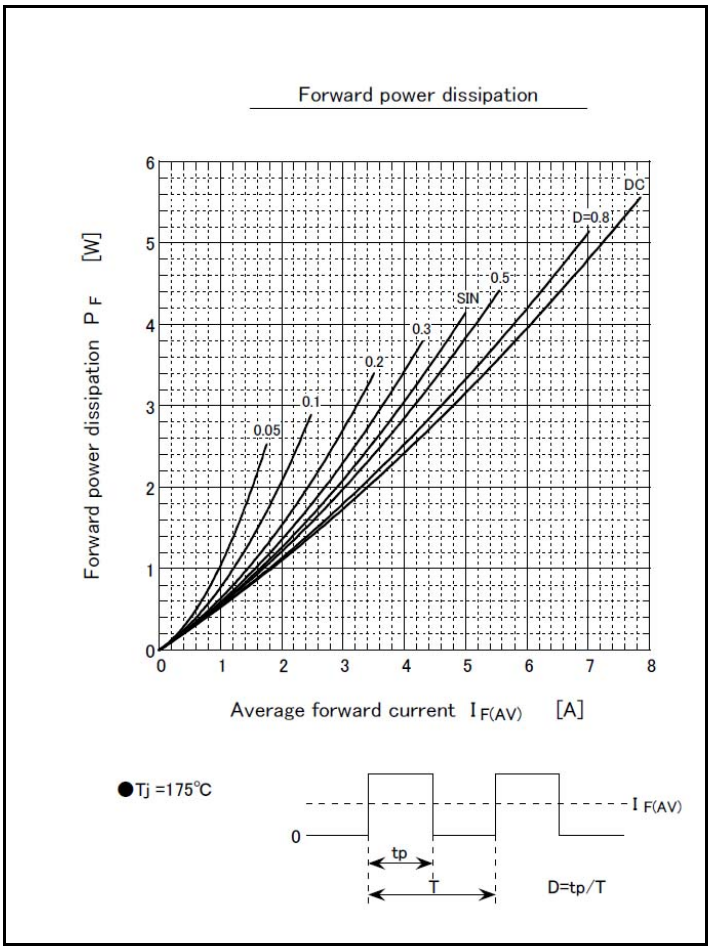
| Item | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| Forward voltage | $V_F$ | IF=5A, Pulse measurement | | | 0.86 | V |
| Reverse current | $I_R$ | VR=100V, Pulse measurement | | | 0.015 | mA |
| Total capacitance | Ct | f=1MHz, VR=10V | | 104 | | pF |
| Thermal resistance | Rth(j-l) | Junction to lead, With heatsink ※ | | | 3 | ℃/W |
| Thermal resistance | Rth(j-a) | Junction to ambient, On alumina substrate ※ | | | 60 | ℃/W |
| Thermal resistance | Rth(j-a) | Junction to ambient, On glass-epoxy substrate ※ | | | 65 | ℃/W |

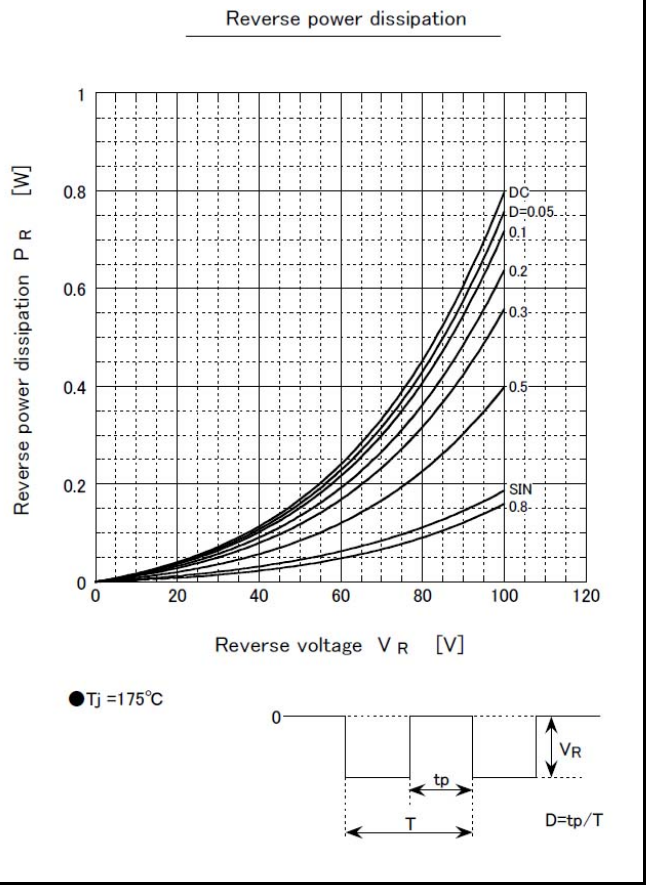
※ ：See the original Specifications

## CHARACTERISTIC DIAGRAMS

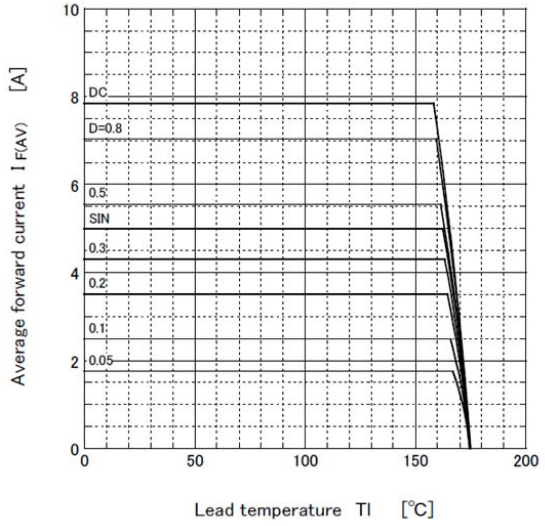


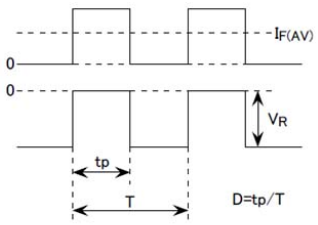
Derating curve



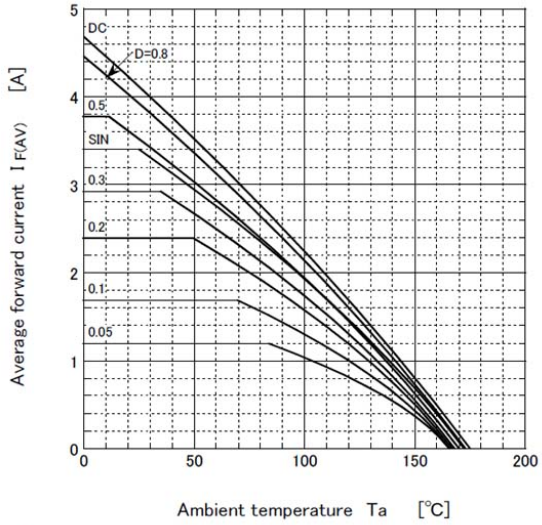

●$V_R$ = 50V
R-load
With heatsink

●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1 inch² |
| Thickness | 1mm |
| Conductor thickness | 20μm |
| Pattern area | 400mm² |



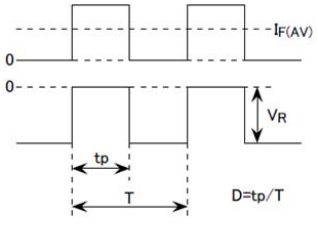

Derating curve



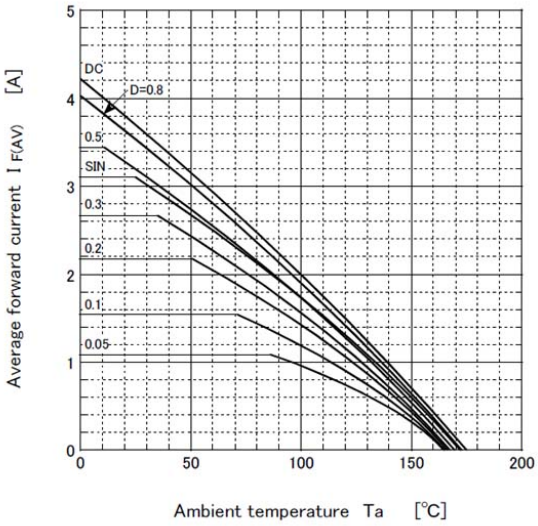

●$V_R$ = 50V
R-load
Free in air

●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1 inch² |
| Thickness | 1mm |
| Conductor thickness | 20μm |
| Pattern area | 400mm² |



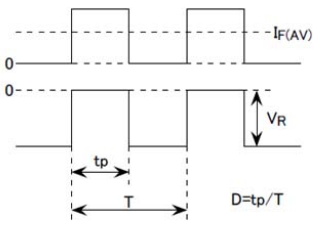

Derating curve



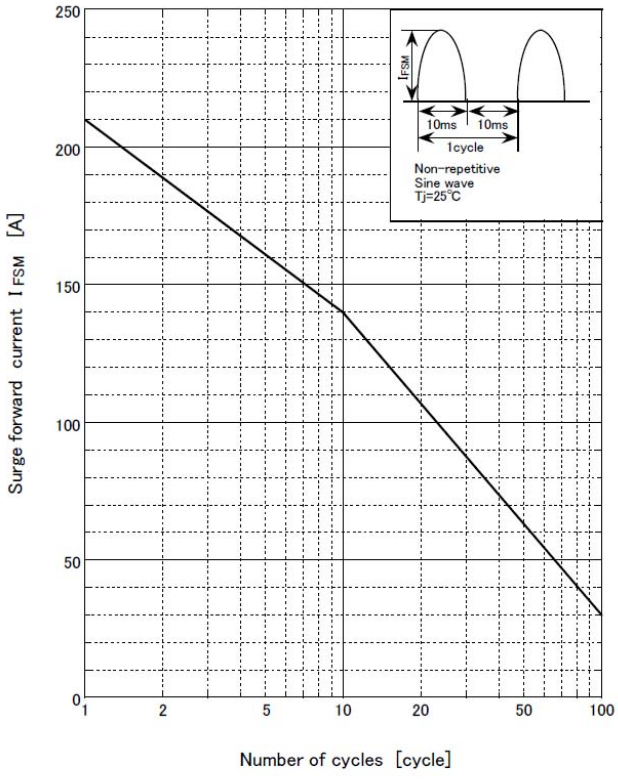

●$V_R$ = 50V
R-load
Free in air

●Substrate detail

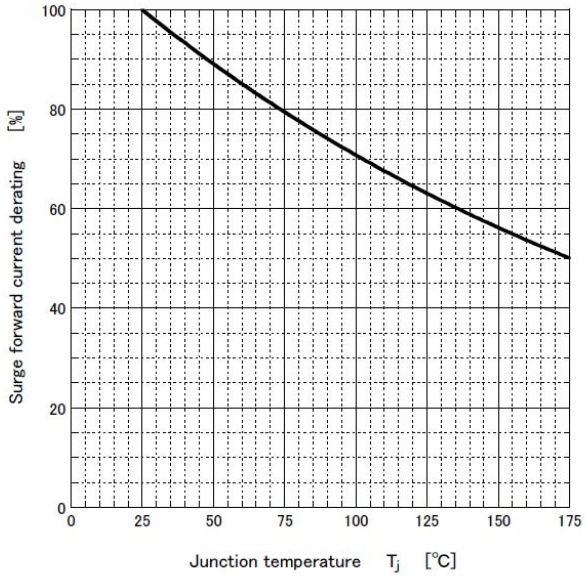
| | |
|---|---|
| Type | Glass-epoxy |
| Size | 1 inch² |
| Thickness | 1mm |
| Conductor thickness | 35μm |
| Pattern area | 400mm² |



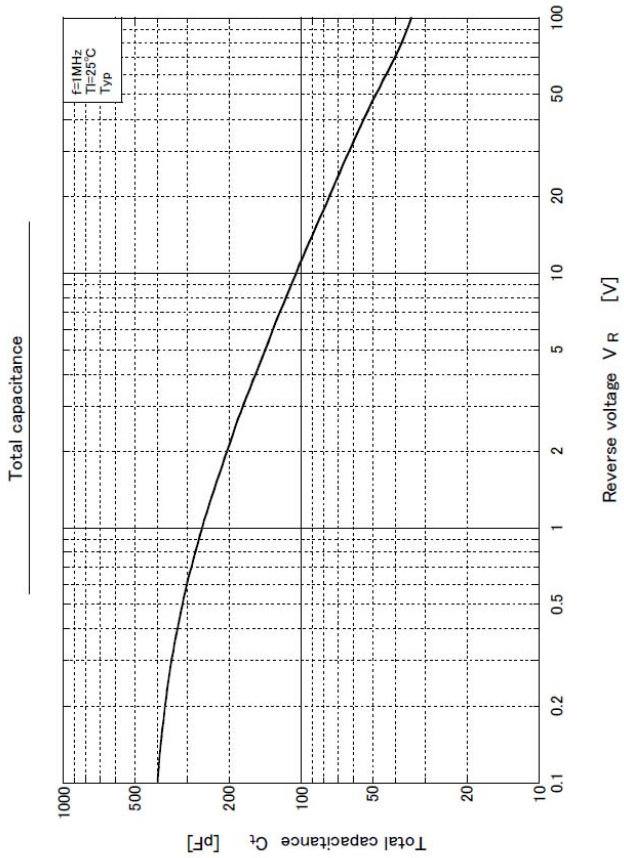

Surge forward current capability



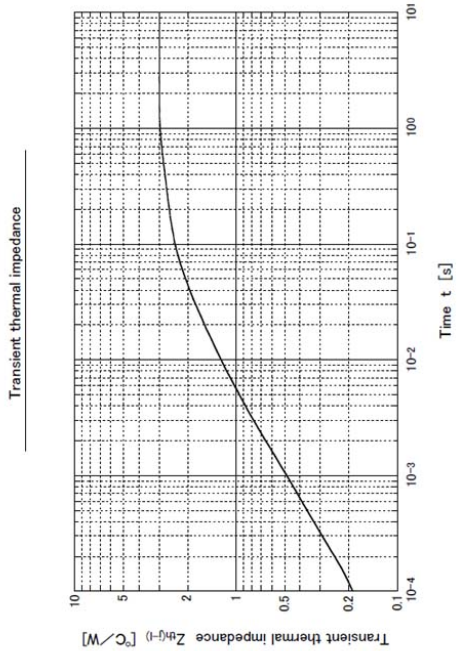
Surge forward current derating
vs Junction temperature




Total capacitance



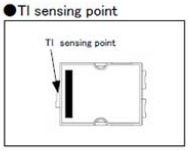

Transient thermal impedance



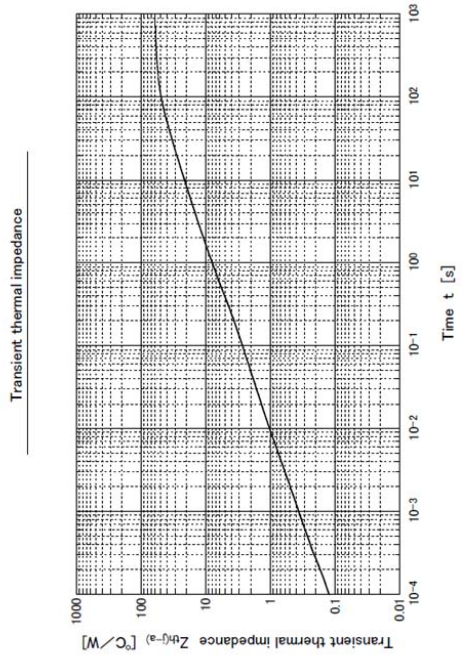

●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1 inch² |
| Thickness | 1mm |
| Conductor thickness | 20μm |
| Pattern area | 400mm² |

●Tl sensing point




Transient thermal impedance




●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1 inch² |
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| Conductor thickness | 20μm |
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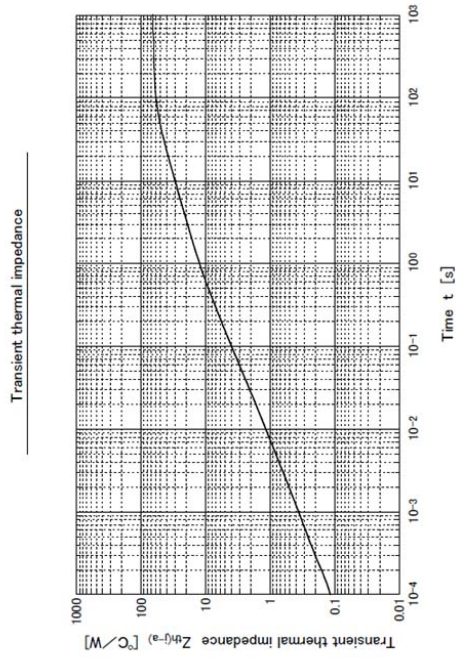



●Substrate detail

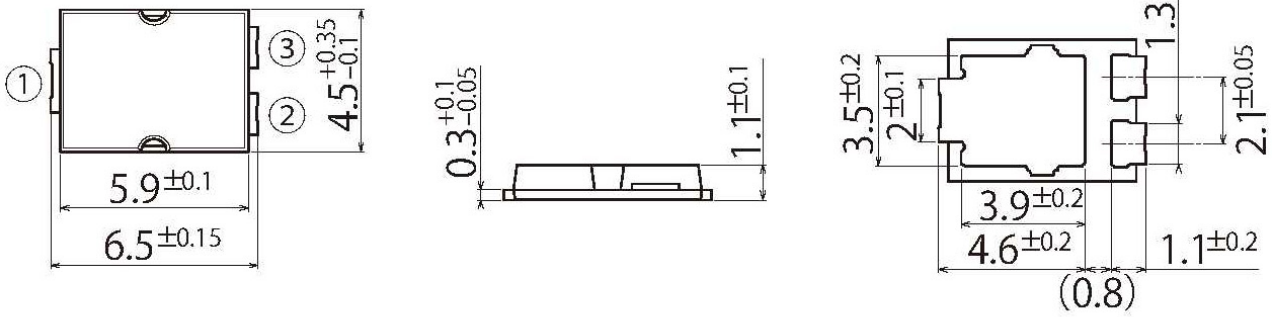
| | |
|---|---|
| Type | Glass-epoxy |
| Size | 1 inch² |
| Thickness | 1mm |
| Conductor thickness | 35μm |
| Pattern area | 400mm² |

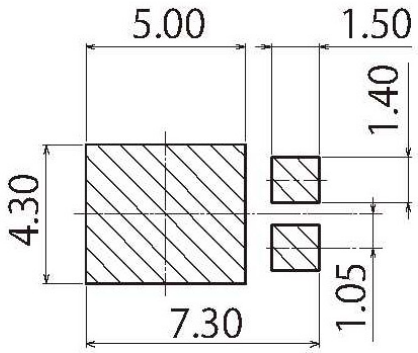
## Outline Dimensions

unit:mm

G4

| | |
|---|---|
| JEDEC Code | TO-277A similar |
| JEITA Code | – |
| House Name | FY |




Referential Soldering Pad

## Notes

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