ShinDengen

# D1FT10A

## Schottky Barrier Diodes
## 100V, 3A

### Feature

- Small SMD
- High Recovery Speed
- Tj=175℃
- Ultra low $I_R$
- Based on AEC-Q101
- Pb free terminal
- RoHS:Yes

### OUTLINE

**Package (House Name):** 1F
**Package (JEDEC Code):** DO-214AC

### 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, Tl=116℃ | 3 | A |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, On alumina substrate, Ta=25℃ ※ | 1.9 | A |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25℃ ※ | 1.4 | A |
| Surge forward current | $I_{FSM}$ | 50Hz sine wave, Non-repetitive, 1cycle, Peak value, Tj=25℃ | 60 | A |

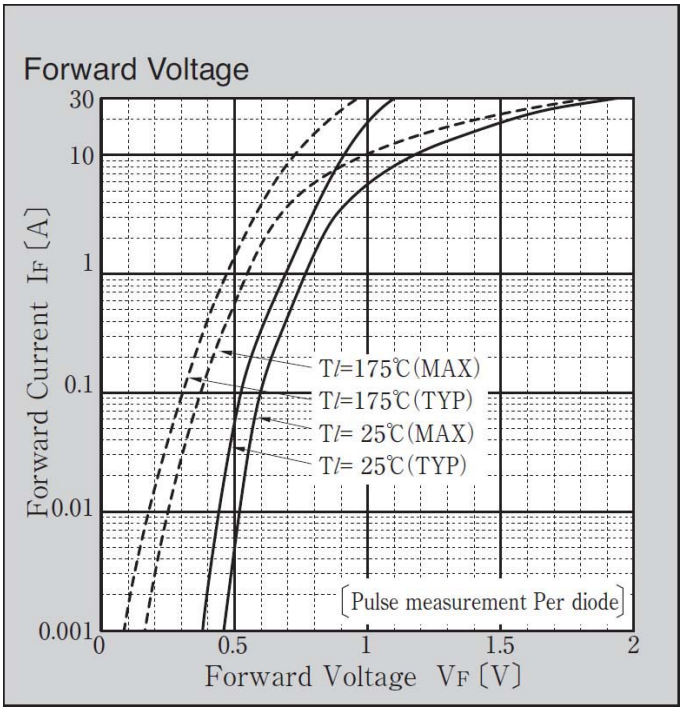
※ ：See the original Specifications

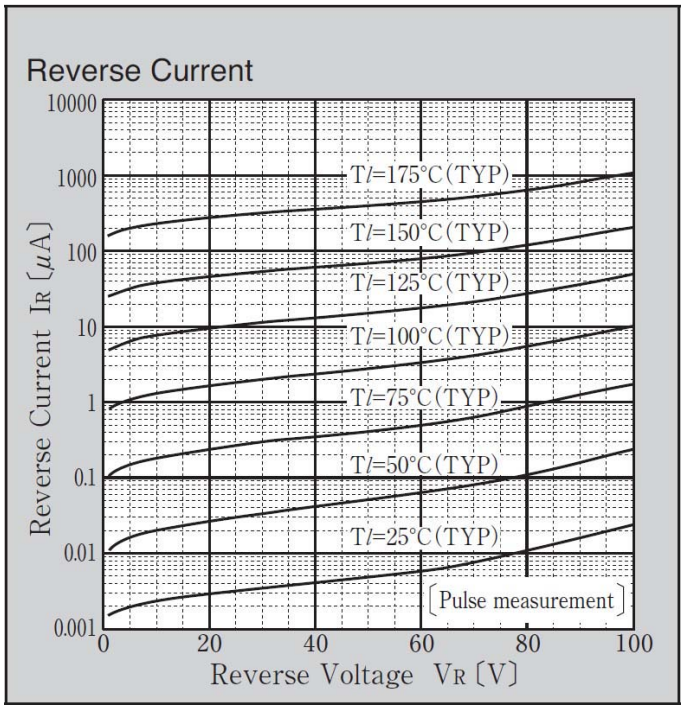
## Electrical Characteristics (unless otherwise specified : Tl=25℃)

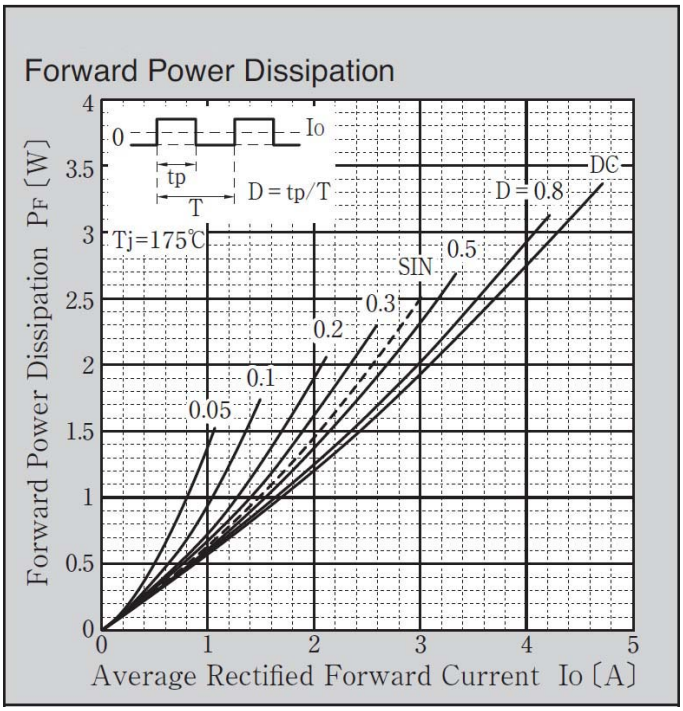
| Item | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| Forward voltage | $V_F$ | IF=3A, Pulse measurement | | | 0.86 | V |
| Forward voltage | $V_F$ | IF=1A, Pulse measurement | | | 0.75 | V |
| Reverse current | $I_R$ | VR=100V, Pulse measurement | | | 0.008 | mA |
| Total capacitance | Ct | f=1MHz, VR=10V | | 60 | | pF |
| Thermal resistance | Rth(j-l) | Junction to lead | | | 23 | ℃/W |
| Thermal resistance | Rth(j-a) | Junction to ambient, On alumina substrate ※ | | | 108 | ℃/W |
| Thermal resistance | Rth(j-a) | Junction to ambient, On glass-epoxy substrate ※ | | | 157 | ℃/W |

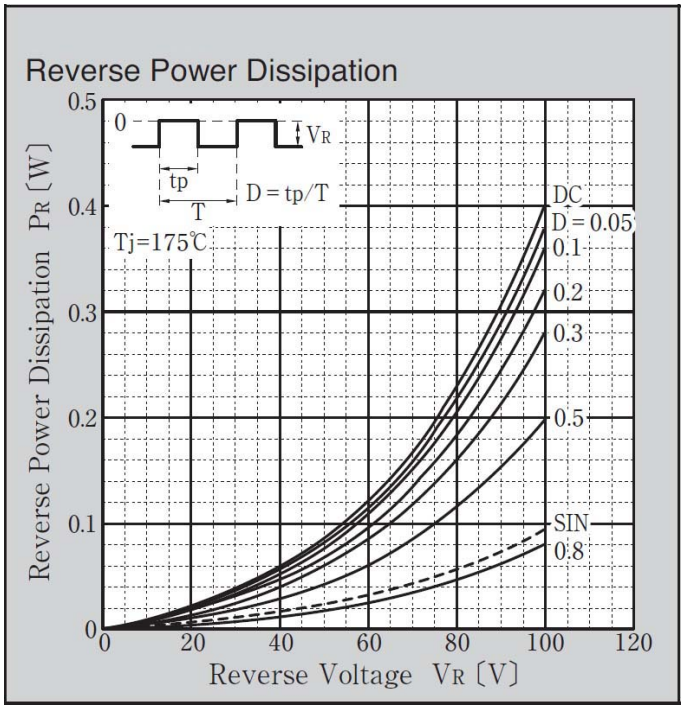
※ ：See the original Specifications

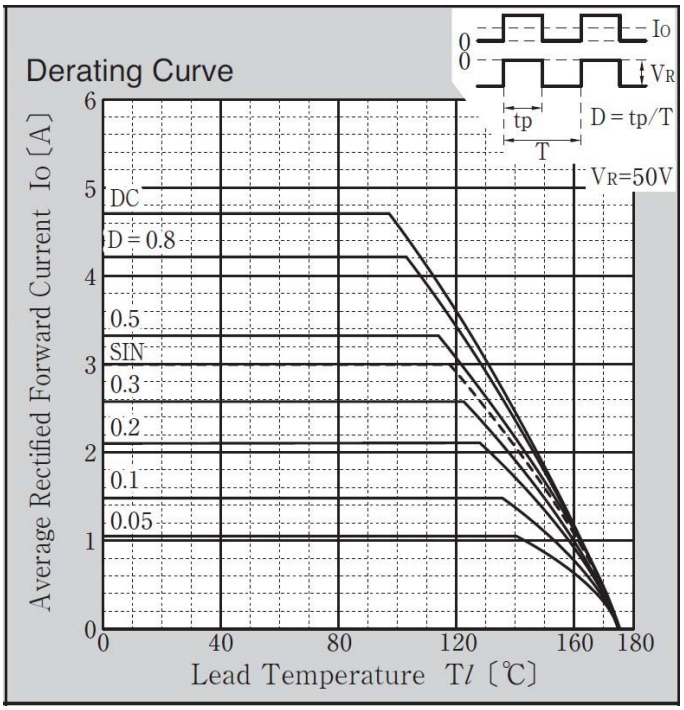
## CHARACTERISTIC DIAGRAMS

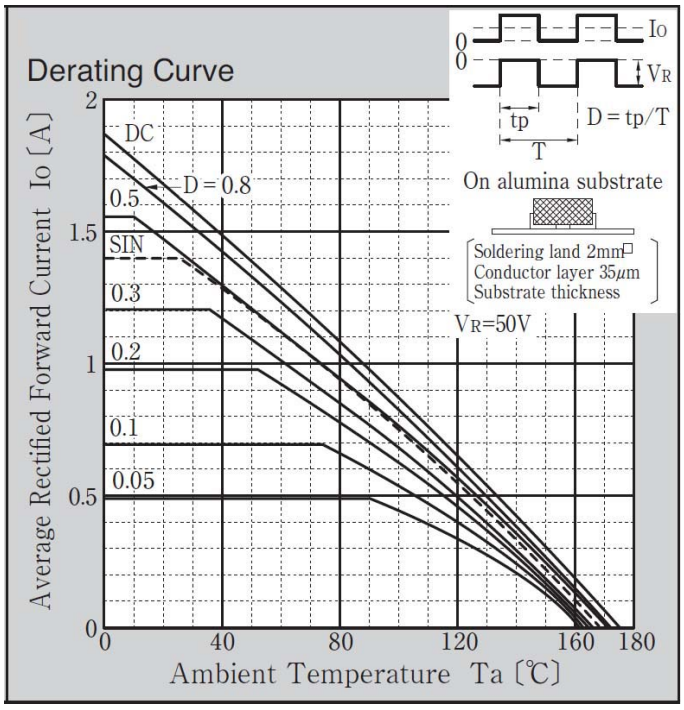


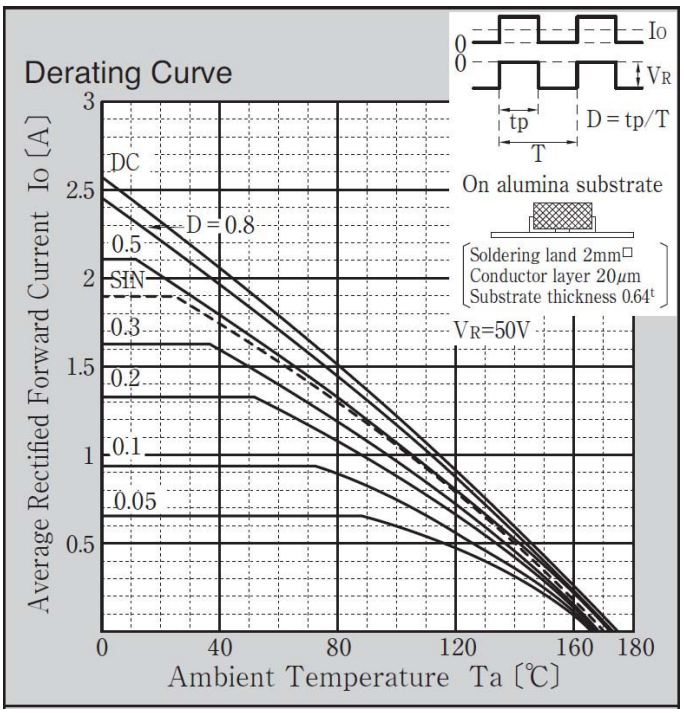



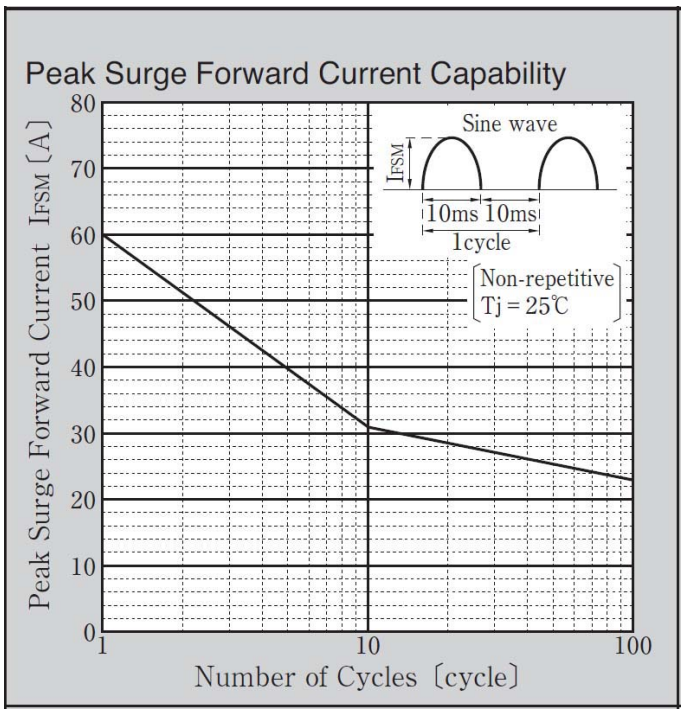



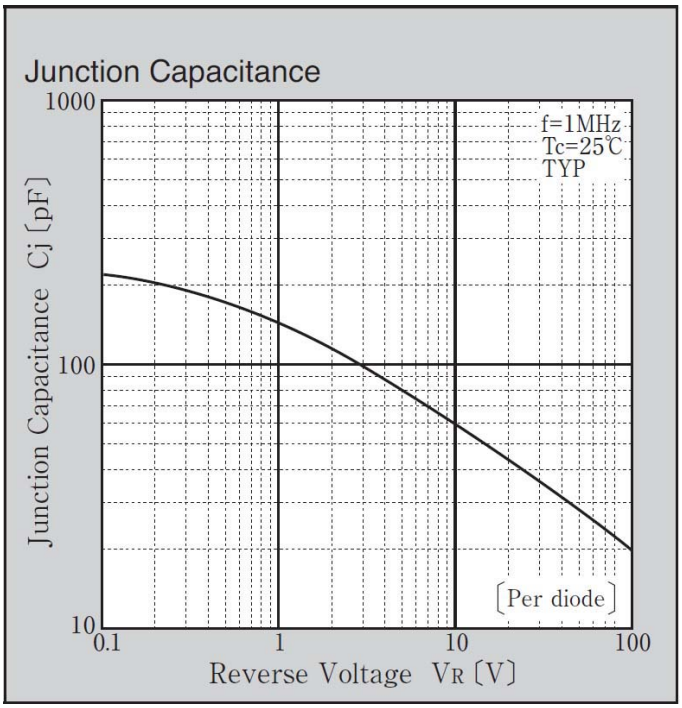



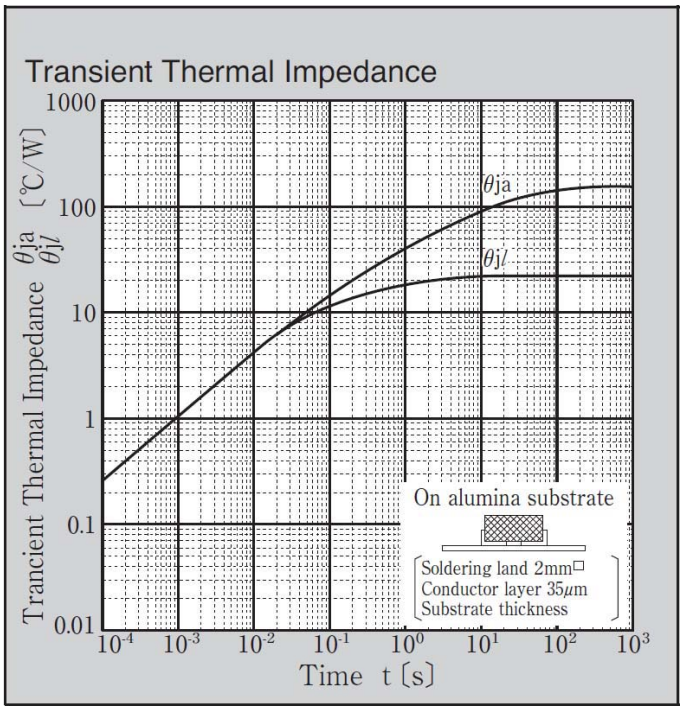

Derating Curve
Io
VR
tp
T
D = tp/T
VR=50V
DC
D = 0.8
0.5
SIN
0.3
0.2
0.1
0.05
Average Rectified Forward Current Io〔A〕
Lead Temperature Tl〔℃〕
0
40
80
120
160
180
1
2
3
4
5
6

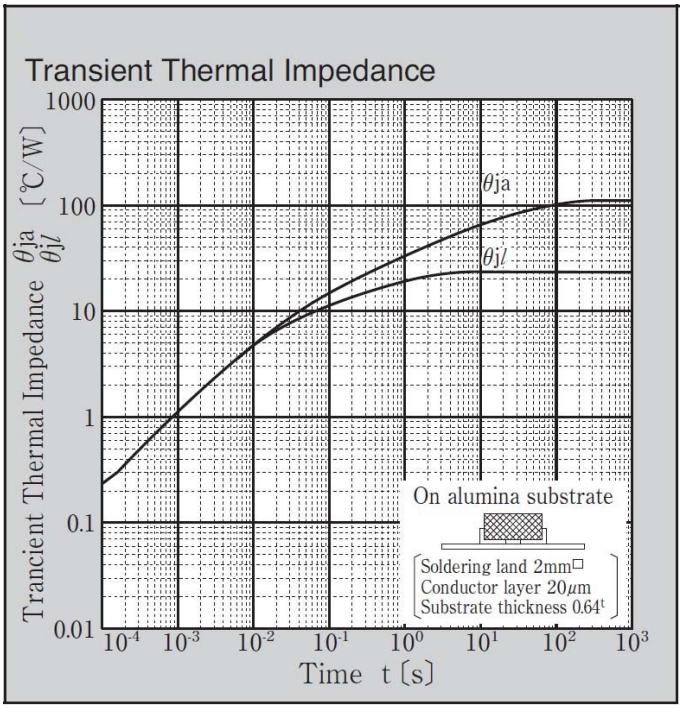

Derating Curve
Io
VR
tp
T
D = tp/T
On alumina substrate
Soldering land 2mm□
Conductor layer 35μm
Substrate thickness
VR=50V
DC
D = 0.8
0.5
SIN
0.3
0.2
0.1
0.05
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
0
40
80
120
160
180
0.5
1
1.5
2


Derating Curve
Io
VR
tp
T
D = tp/T
On alumina substrate
Soldering land 2mm□
Conductor layer 20μm
Substrate thickness 0.64t
VR=50V
DC
D = 0.8
0.5
SIN
0.3
0.2
0.1
0.05
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
0
40
80
120
160
180
0.5
1
1.5
2
2.5
3


Peak Surge Forward Current Capability
Sine wave
IFSM
10ms 10ms
1cycle
Non-repetitive
Tj = 25℃
Peak Surge Forward Current IFSM〔A〕
Number of Cycles〔cycle〕
1
10
100
0
10
20
30
40
50
60
70
80


Junction Capacitance
1000
100
10
0.1
1
10
100
f=1MHz
Tc=25℃
TYP
Per diode
Junction Capacitance Cj〔pF〕
Reverse Voltage VR〔V〕


Transient Thermal Impedance
1000
100
10
1
0.1
0.01
θja
θjl
On alumina substrate
Soldering land 2mm□
Conductor layer 35μm
Substrate thickness
Trancient Thermal Impedance θja θjl 〔℃/W〕
Time t〔s〕


Transient Thermal Impedance
1000
100
10
1
0.1
0.01
θja
θjl
On alumina substrate
Soldering land 2mm□
Conductor layer 20μm
Substrate thickness 0.64t
Trancient Thermal Impedance θja θjl 〔℃/W〕
Time t〔s〕

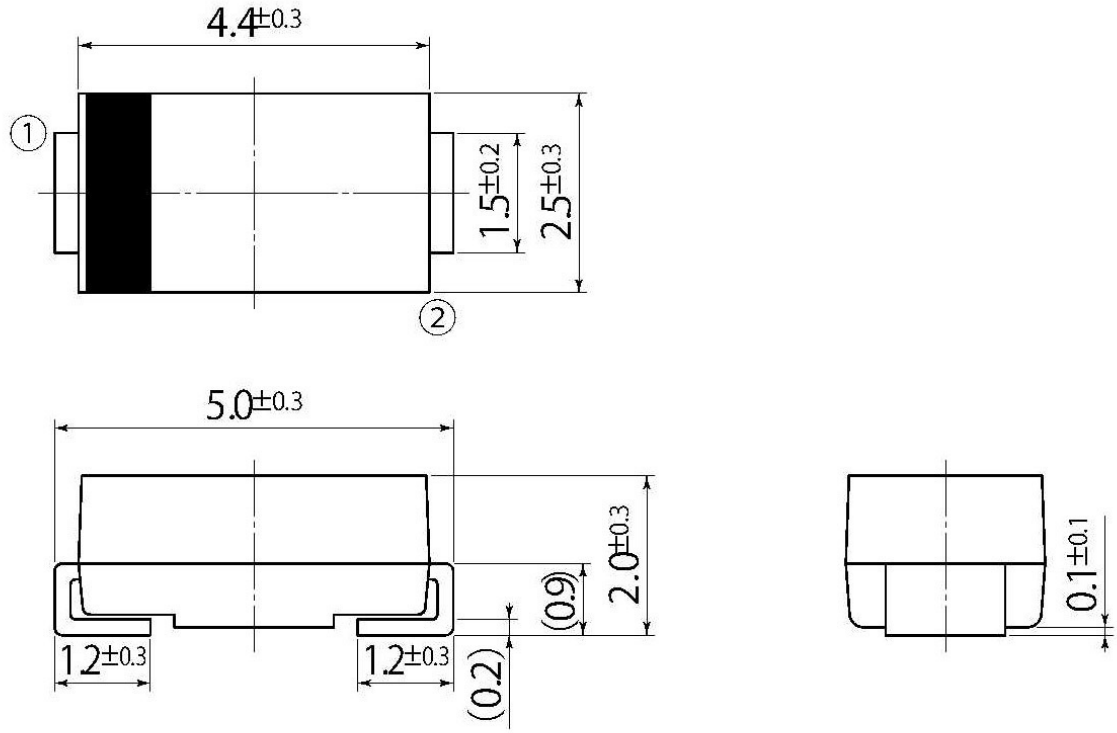
## Outline Dimensions

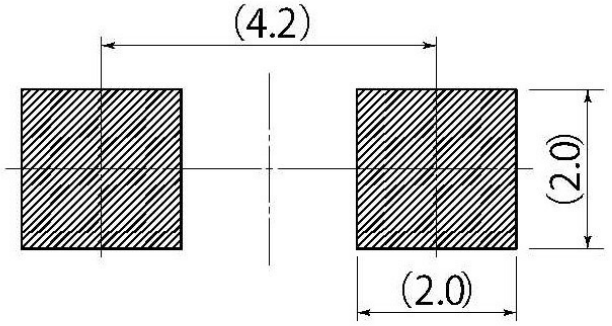
unit:mm

scale: 10/1

B3

| | |
|---|---|
| JEDEC Code | DO-214AC |
| JEITA Code | – |
| House Name | 1F |




Referential Soldering Pad

• Optimize soldering pad to the board design and soldering condition.

## Notes

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