ShinDengen

# D6FEC4ST

## Schottky Barrier Diodes
## 40V, 6A

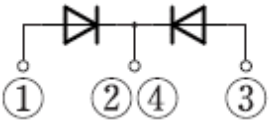
### Feature

- SMD
- Tj=175°C
- Ultra low $I_R$
- Based on AEC-Q101
- Pb free terminal
- RoHS:Yes

### OUTLINE

**Package (House Name):** FE
**Package (JEDEC Code):** TO-252AB similar
**Package (JEITA Code):** SC-63


### Equivalent circuit




### Absolute Maximum Ratings (unless otherwise specified : Tc=25°C)

| Item | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Storage temperrature | Tstg | | -55 to 175 | °C |
| Junction temperature | Tj | | -55 to 175 | °C |
| Repetitive peak reverse voltage | $V_{RRM}$ | | 40 | V |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, Rating for each diode IF(AV)/2, Tc=158°C ※ | 6 | A |
| Average forward current | $I_F$(AV) | 50Hz sine wave, Resistance load, Rating for each diode IF(AV)/2, Ta=25°C ※ | 4 | A |
| Surge forward current | $I_{FSM}$ | 50Hz sine wave, Non-repetitive, 1cycle, Peak value, Tj=25°C | 90 | A |
| Surge forward current | $I_{FSM1}$ | tp=1ms, Sine wave, Non-repetitive, Peak value, Tj=25°C | 155 | A |

※ ：See the original Specifications

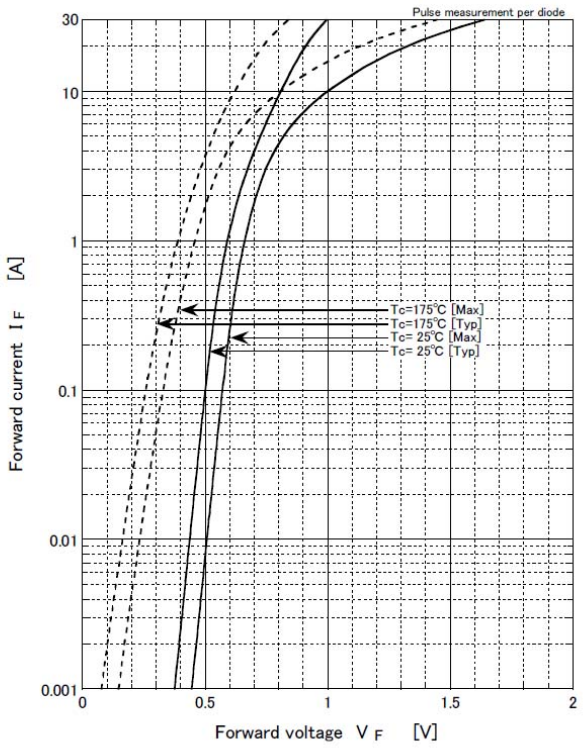
## Electrical Characteristics (unless otherwise specified : Tc=25°C)

| Item | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| Forward voltage | $V_F$ | IF=3A, Pulse measurement, per diode | | | 0.74 | V |
| Reverse current | $I_R$ | VR=40V, Pulse measurement, per diode | | | 0.008 | mA |
| Total capacitance | Ct | f=1MHz, VR=10V, per diode | | 93 | | pF |
| Thermal resistance | Rth(j-c) | Junction to case, With heatsink ※ | | | 4 | °C/W |
| Thermal resistance | Rth(j-a) | Junction to ambient ※ | | | 60 | °C/W |

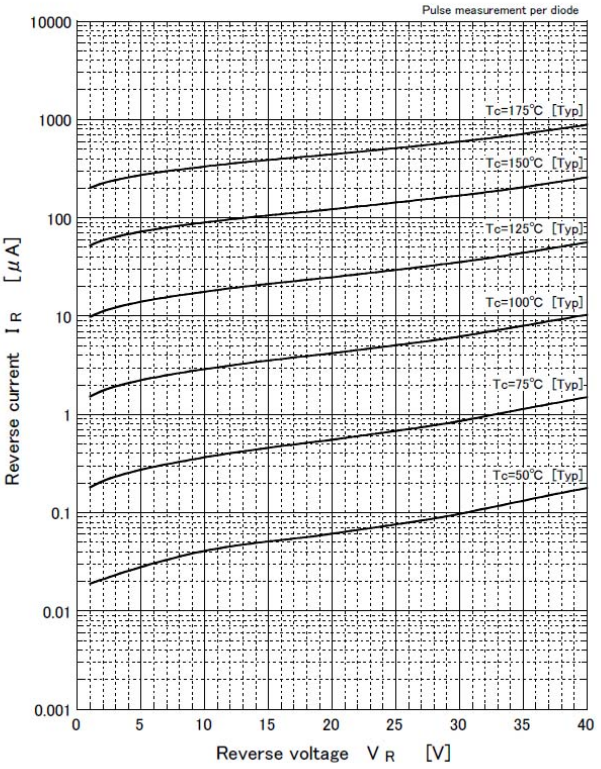
※ :See the original Specifications

## CHARACTERISTIC DIAGRAMS

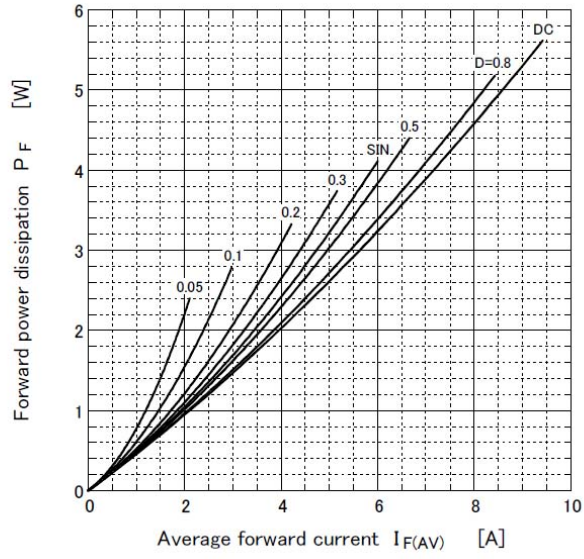
Forward voltage

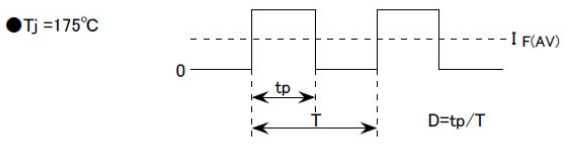



Reverse current

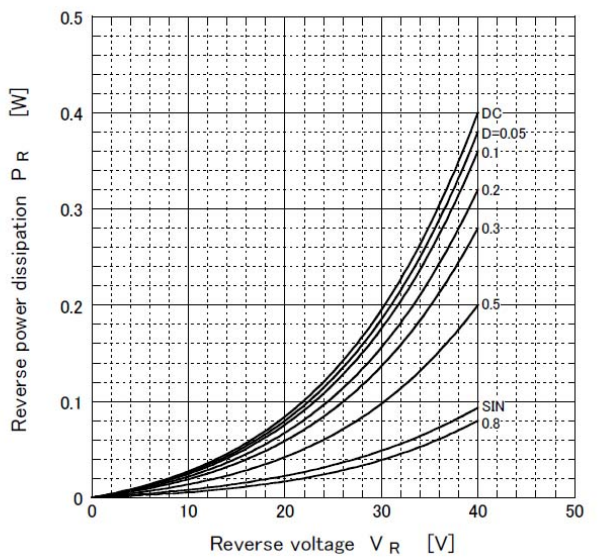


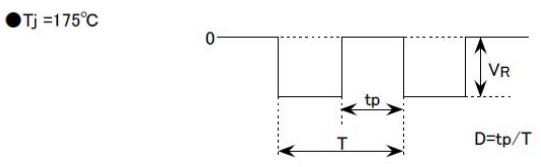

Forward power dissipation



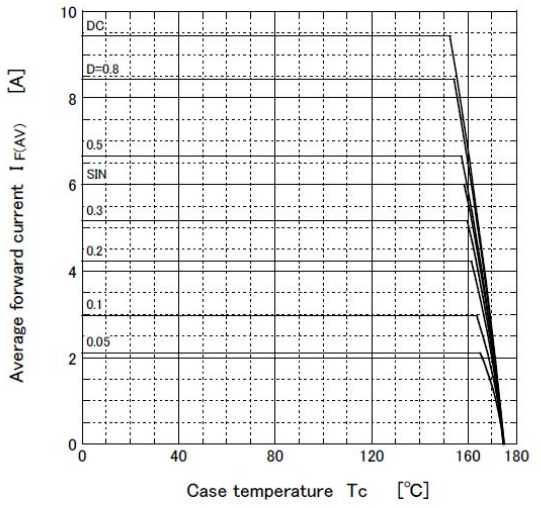




Reverse power dissipation



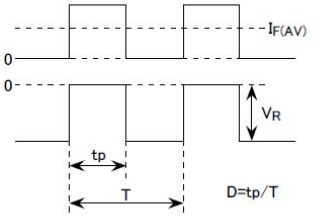
## Derating curve



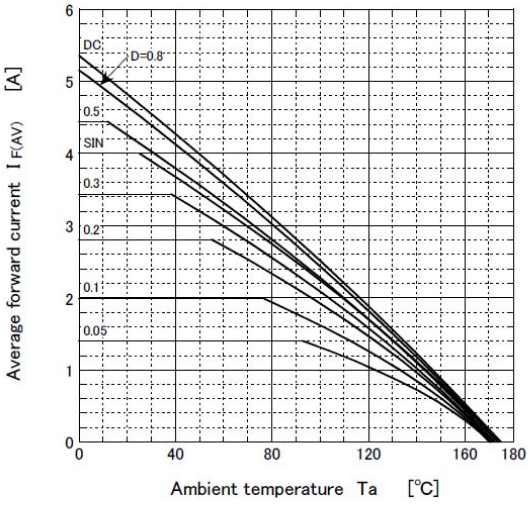

●$V_R$ = 20V
R-load
With heatsink

●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1inch² |
| Thickness | 0.64mm |
| Conductor thickness | 20μm |
| Pattern area | 65mm² |



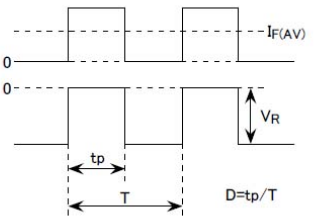

## Derating curve



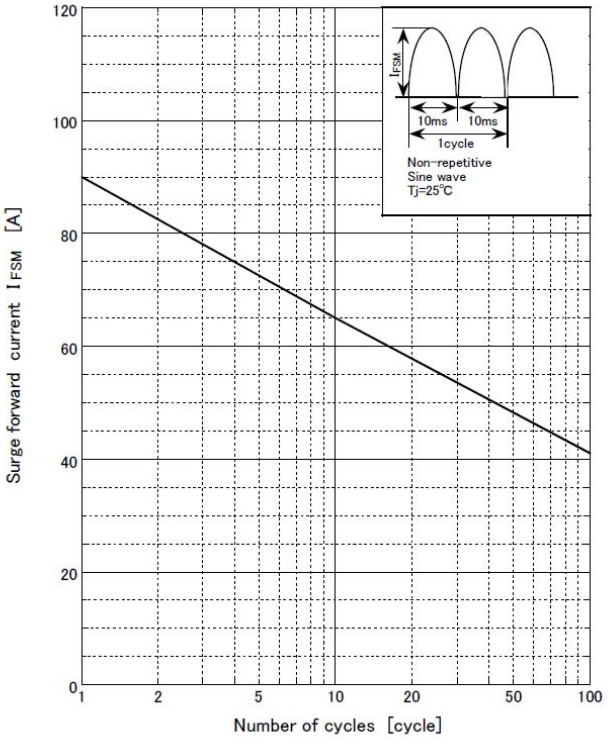

●$V_R$ = 20V
R-load
Free in air

●Substrate detail

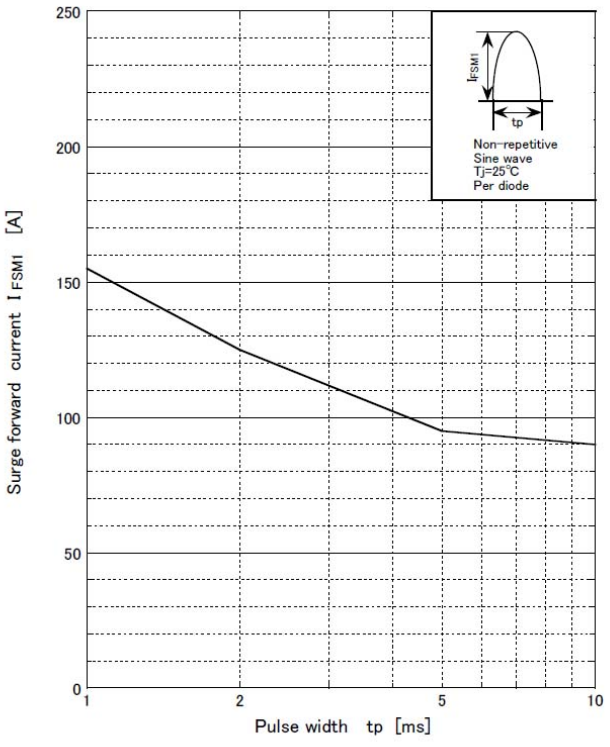
| | |
|---|---|
| Type | Glass-epoxy |
| Size | 24mm×36mm |
| Thickness | 1.6mm |
| Conductor thickness | 35μm |
| Pattern area | 56.5mm² |



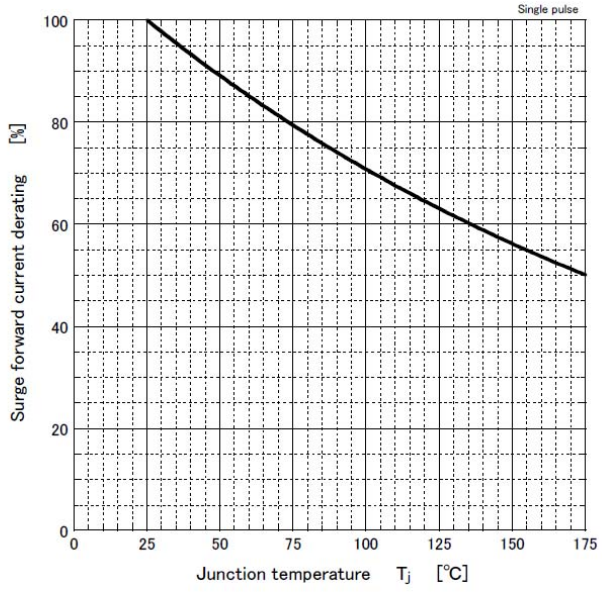

## Surge forward current capability

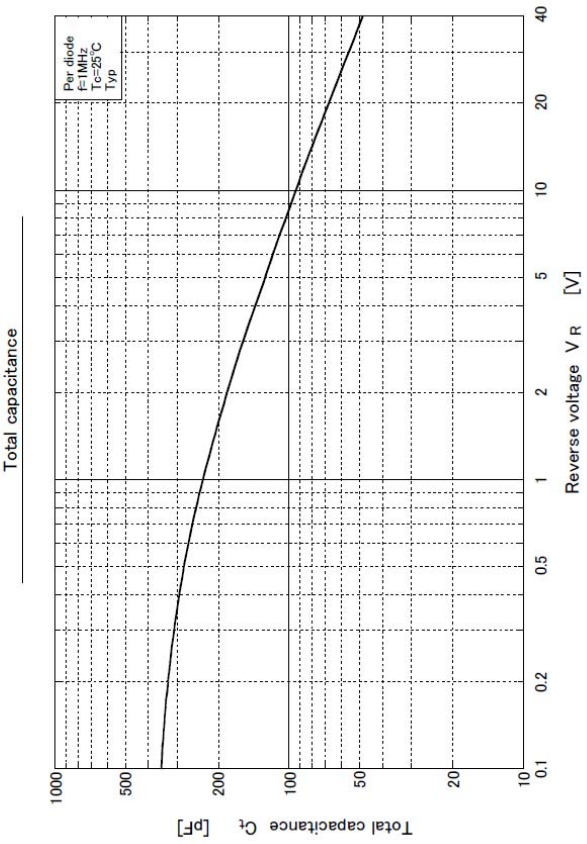


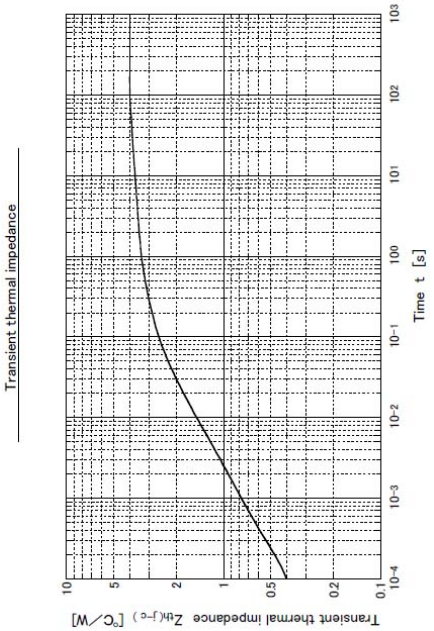

## Surge forward current capability



Surge forward current derating
vs Junction temperature



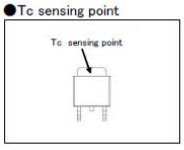



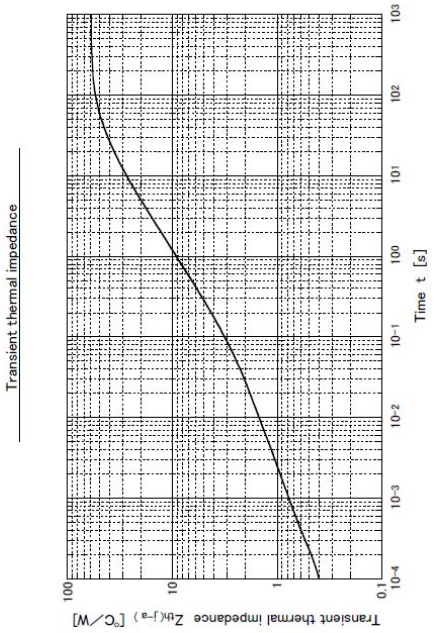




●Substrate detail

| | |
|---|---|
| Type | Alumina |
| Size | 1inch² |
| Thickness | 0.64mm |
| Conductor thickness | 20μm |
| Pattern area | 65mm² |

●Tc sensing point




●Substrate detail

| | |
|---|---|
| Type | Glass-epoxy |
| Size | 24mm×36mm |
| Thickness | 1.6mm |
| Conductor thickness | 35μm |
| Pattern area | 56.5mm² |

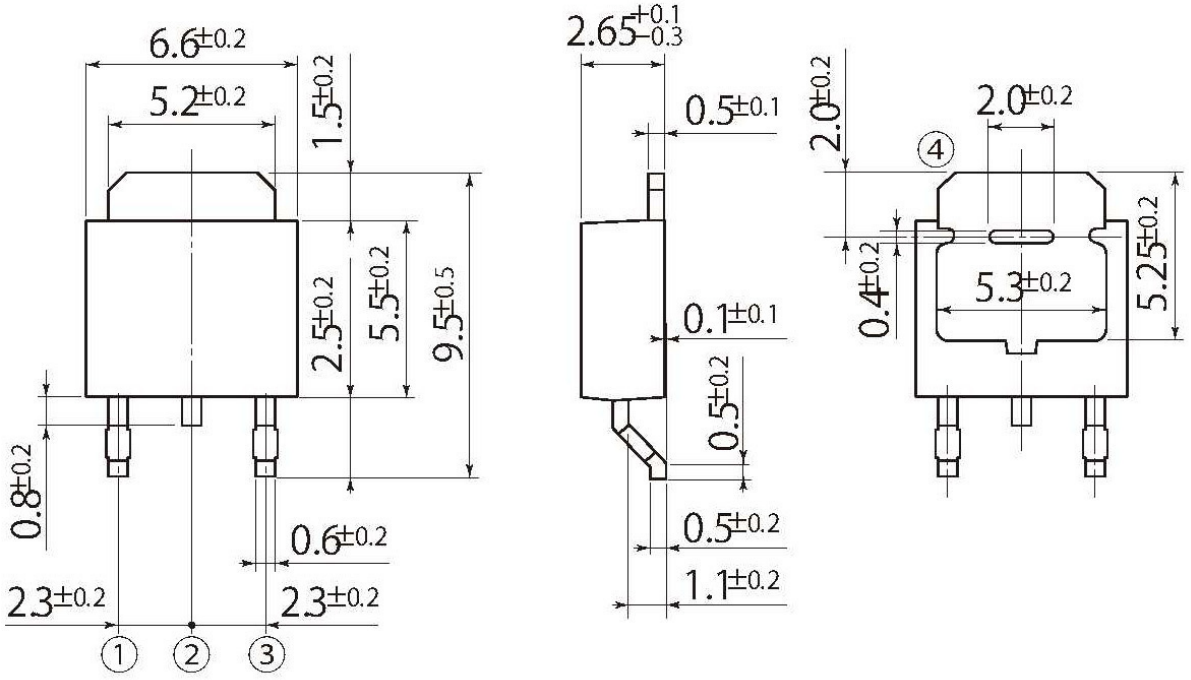
## Outline Dimensions

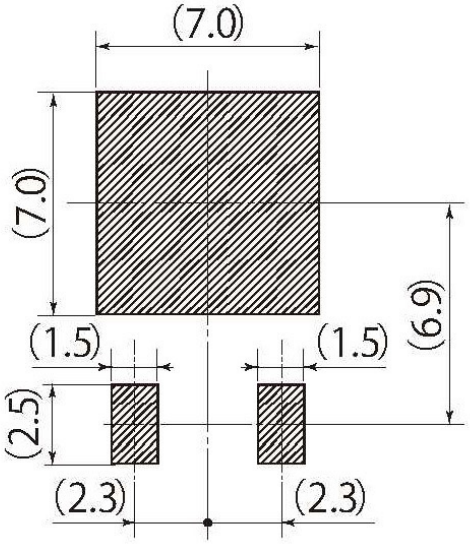
unit:mm

scale: 4/1

G3

| | |
|---|---|
| JEDEC Code | TO-252AB similar |
| JEITA Code | SC-63 |
| House Name | FE |




Referential Soldering Pad

• Optimize soldering pad to the board design and soldering condi tion.

## Notes

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